

# Smoke Tree Resort

Traffic Impact Analysis

7101 E. Lincoln Drive  
Town of Paradise Valley, Arizona

May 2020  
Project No. 18-0550

Prepared For:

**Beus Gilbert, PLC**  
701 N. 44th Street  
Phoenix, Arizona 85008

For Submittal to:

**Town of Paradise Valley**

Prepared By:



10605 North Hayden Road  
Suite 140  
Scottsdale, Arizona 85260  
480-659-4250

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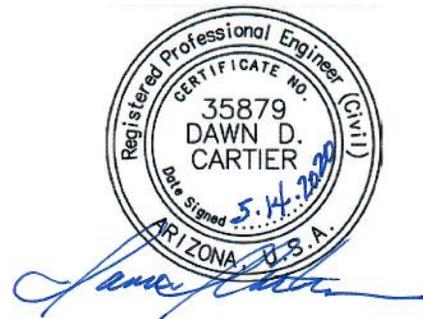
For Submittal to:  
Town of Paradise Valley

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Prepared By:



CivTech, Inc.  
10605 North Hayden Road  
Suite 140  
Scottsdale, Arizona 85260  
(480) 659-4250



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May 2020

CivTech Project No. 18-0550

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## EXECUTIVE SUMMARY

This report documents a traffic impact analysis performed for the proposed Smoke Tree Resort south of Lincoln Road between Mockingbird Lane and Scottsdale Road in the Town of Paradise Valley. The proposed development will consist of maximum of 102 standard hotel rooms, 6 resort villas, 4 of which will have 3 keys each and the remaining 2 will have 4 keys each for a total of 20 keys. Additionally, the Smoke Tree Resort will provide a 3,200 square foot quality restaurant, which will be open to the public as well as resort guests, a coffee shop, a market, an event space and other hotel amenities for guests to utilize.

In this study, two scenarios were analyzed at the request of the Town of Paradise Valley. The first scenario, Scenario 1, analyzes Smoke Tree Resort with a single shared, full movement access with Lincoln Medical Center along Lincoln Drive as well as a full movement access on Quail Run Road. The second scenario, Scenario 2, analyzes Smoke Tree Resort with its own exclusive, right in/right out access along Lincoln Drive as well as a full movement access on Quail Run Road.

CivTech, Inc. has been retained by Beus Gilbert PLLC to perform the traffic impact analysis for the proposed redevelopment. The purpose of this assessment is to address the traffic and transportation impacts of the proposed development on the surrounding streets and intersections.

The following conclusions have been documented in this study.

### General

- The proposed development is anticipated to generate approximately 754 external weekday daily trips, with 51 external trips occurring in the AM peak hour and 77 external trips occurring in the PM peak hour.

### Existing Conditions

- The results of the existing conditions analysis indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better). The following intersections include one or more approaches which currently operate with poor levels of service.
  - The intersection of **Mockingbird Lane and Lincoln Drive** currently operates with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and

PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 6.1 seconds per vehicle and 10.5 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.

- The intersection of **Scottsdale Road and Lincoln Drive** currently experiences delay on the eastbound and westbound approaches during both the AM and PM peak hours. During the AM peak hour, it is recommended that the eastbound green time be extended from 30 seconds to 33 seconds and the westbound green time be extended from 13 seconds to 17 seconds. This mitigation measure is anticipated to decrease the eastbound delay from 56.3 seconds per vehicle to 53.9 seconds per vehicle. The westbound approach remains unchanged, in order to mitigate this delay, the initial green time could be changed to allow for more vehicles to pass through the intersection without the light changing from green to yellow.
  - During the PM peak hour, it is recommended that the eastbound phase be extended from 30 seconds to 33 seconds and the westbound phase be increased from 13 seconds to 21 seconds. With these mitigation measures applied, it is expected that the eastbound delay will decrease from 57.3 seconds per vehicle to 54.2 seconds per vehicle and the westbound delay will decrease from 70.1 seconds per vehicle to 63.0 seconds per vehicle.

### Opening Year 2021

- The results of the Scenario 1 and 2 2021 peak hour analysis summarized in **Table 6** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better) with the exception of Mockingbird Lane/Lincoln Drive and Scottsdale Road/Lincoln Drive.
  - The intersection of **Mockingbird Lane and Lincoln Drive** is expected to operate with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours for opening year 2021. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the

intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 11.0 seconds per vehicle and 1.3 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.

- The intersection of **Scottsdale Road and Lincoln Drive** is expected to experience delay on the eastbound and westbound approaches during both the AM and PM peak hours of the opening year 2021. During the AM peak hour, it is recommended that the eastbound green time be extended from 30 seconds to 33 seconds and the westbound green time be extended from 13 seconds to 16 seconds. With these mitigation measures applied, it is expected that the eastbound delay would decrease from 56.8 seconds per vehicle to 53.9 seconds per vehicle and the westbound delay would decrease from 60.2 seconds per vehicle to 57.2 seconds per vehicle.
  - During the PM peak hour, it is recommended that the eastbound phase be increased from 30 seconds to 34 seconds and the westbound phase be increased from 13 seconds to 17 seconds. With these mitigation measures applied, it is anticipated that the eastbound delay will decrease from 59.4 seconds per vehicle to 54.2 seconds per vehicle and the westbound delay will decrease from 72.6 seconds per vehicle to 58.6 seconds per vehicle, which is almost an acceptable level of service.

#### Horizon year 2026

- The results of the Scenario 1 and 2 2026 peak hour analysis summarized in **Table 7** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better) with the exception of Mockingbird Lane/Lincoln Drive and Scottsdale Road/Lincoln Drive.
  - The intersection of **Mockingbird Lane and Lincoln Drive** is expected to operate with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours for horizon year 2026. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times

will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 12.7 seconds per vehicle and 1.8 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.

- The intersection of **Scottsdale Road and Lincoln Drive** is expected to experience delay on the southbound, eastbound and westbound approaches during both the AM and PM peak hours of the horizon year 2026. During both the AM and PM peak hours, it is recommended that the eastbound and westbound phasing change from split to protected phasing. During the AM peak hour, this mitigation measure should reduce the eastbound delay from 55.7 seconds per vehicle to 51.0 seconds per vehicle and reduce the westbound delay from 57.4 seconds per vehicle to 54.7 seconds per vehicle. During the PM peak hour, this mitigation measure should reduce the southbound approach delay from 70.7 seconds per vehicle to 53.3 seconds per vehicle. The westbound approach delay is anticipated to remain the same, however, the delay on the westbound approach is anticipated to be 59.3 seconds per vehicle, which is very close to the threshold for an acceptable level of service, 55 seconds per vehicle.

#### Queue Storage and Sight Distance

- According to the CivTech study done for the Ritz Carlton, the newly signalized intersection of Quail Run Road and Lincoln Drive will have eastbound/westbound left turn lanes and a westbound right turn lane striped with 150 feet of storage each. While 150 feet is being proposed due to the current development agreement with Five Star Development for the Ritz Carlton, less is required to meet the recommended AASHTO length. The recommended storage lengths are provided for horizon year 2026 using the total traffic projections.
  - The westbound left turn lane proposed for Scenario 1 at Smoke Tree Access A on Lincoln Drive has previously been discussed the Town of Paradise Valley as well as their reviewing consultant. It was decided that a maximum of 50 feet with a 60 foot taper could be provided without interference with existing turn lanes or surrounding development traffic. Scenario 2 will consist of a single right in/right out driveway and will not require a westbound left turn lane.
  - For scenario 1, Smoke Tree Resort is requesting full access. Scenario 2 will consist of a single access to Smoke Tree with right in/right out access only. With the exception of the westbound left turn at the Smoke Tree driveway on Lincoln Drive, both scenarios require the same amount of queue storage. The Town of Paradise Valley has stated that an eastbound right turn deceleration lane is required at the Smoke Tree driveway, whether it is shared with the Lincoln Medical Center or not. Using AASHTO methodology only 25 feet of storage is required, however,

50 feet is the minimum that should be recommended per AASHTO standards with a 90 foot taper. After discussions with the Town staff, it was decided that a storage length of 100 feet will be provided for the right turn deceleration lane, however, if interference with other turn lanes is expected with the 100 foot storage length, 75 feet would be an acceptable storage length.

- There are no existing obstructions to sight distance within the project intersections or along the included corners of the proposed intersection. Adequate site distance must be provided at the intersections to allow safe left and right turning movements from the development
  - The developer should ensure that sight visibility is provided at all proposed intersections according to the distances and that sight triangles at public intersections are maintained according to the Town Code. All vegetation and trees should be maintained according to Town of Paradise Valley regulations.

## INTRODUCTION

This report documents a traffic impact analysis performed for the proposed Smoke Tree Resort south of Lincoln Road between Mockingbird Lane and Scottsdale Road in the Town of Paradise Valley. The proposed development will consist of maximum of 102 standard hotel rooms, 6 resort villas, 4 of which will have 3 keys each and the remaining 2 will have 4 keys each for a total of 20 keys. Additionally, the Smoke Tree Resort will provide a 3,200 square foot quality restaurant, which will be open to the public as well as resort guests, a coffee shop, a market, an event space and other hotel amenities for guests to utilize.

### Study Requirements

This study analyzes the traffic impact due to the proposed development on the surrounding street network. The study will be prepared in conformance with the Town of Paradise Valley's Traffic Impact Analysis (TIA) Criteria and Traffic Impact Statement (TIS) Criteria, May 2015. The specific objectives of the study are:

- ◆ To determine whether the planned street system in the vicinity of the site is adequate to accommodate the increased traffic that results from the proposed development.
- ◆ To recommend additional street improvements or traffic control devices, where necessary, and to mitigate the additional site-generated traffic

### Study Area

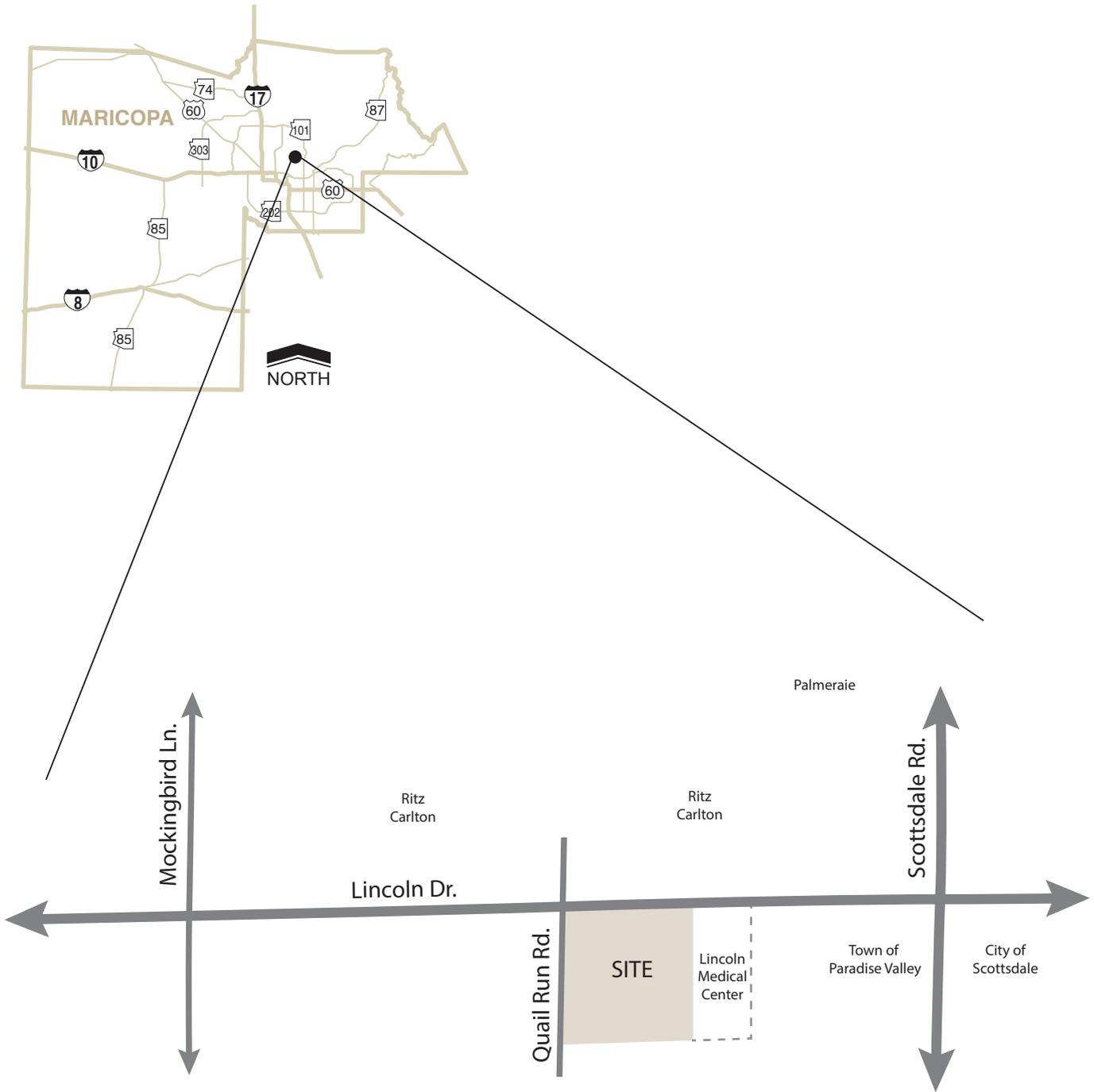
This study is classified as a Category 1 TIA meaning the study area is defined as all signalized and major unsignalized intersections within a ¼ -mile radius of the site. The following study area intersections have been evaluated:

- Mockingbird Lane & Lincoln Drive
- Quail Run Road & Lincoln Drive
- Smoke Tree Driveway West & Lincoln Drive
- Smoke Tree Driveway East & Lincoln Drive
- Medical Office Driveway West & Lincoln Drive
- Medical Office Driveway East & Lincoln Drive
- Apartment Driveway & Lincoln Drive
- AJ's Driveway & Lincoln Drive
- Scottsdale Road & Lincoln Drive

### Horizon Years

Per the study requirements, a Category 1 Traffic Impact and Mitigation Analysis is required. Analysis will be conducted on the current conditions, the opening year and opening plus five years.

For purposes of this study, the development will be assumed fully built out by 2021. Therefore, the analysis years to be analyzed for this study include opening year 2021 and horizon year 2026. A location map of the study area is provided in **Figure 1**.



**Figure 1:** Vicinity Map

## EXISTING CONDITIONS

### *SURROUNDING LAND USE*

The surrounding area includes various land uses. Directly north of the site, on the north side of Lincoln Drive, is the site for the new Ritz Carlton luxury hotel. Bordering the site to the east is the site for the proposed Lincoln Medical Center expansion. West of the site are detached single-family homes. Northeast of the site is the Lincoln Scottsdale, multi-family apartment homes. Also within the vicinity of the site are many retail shops and restaurants.

### *EXISTING ROADWAY NETWORK*

The existing roadway network analyzed in this study includes Mockingbird Lane, Lincoln Drive, Quail Run Road and Scottsdale Road.

**Mockingbird Lane** is a north-south three-lane road with one lane in each travelling direction and a continuous two-way-left-turn lane north of Lincoln Drive, and a two-lane road south of Lincoln Drive. Mockingbird Lane begins at the intersection with McDonald Road and continues north for approximately 2 miles before terminating at the intersection with Northern Avenue. The posted speed limit is 35 miles per hour (mph).

**Lincoln Drive** is an east-west four-lane road with two lanes in each travelling direction. Within the vicinity of the site, there are raised medians along portions of the road. Lincoln Drive begins just east of the State Route 51 freeway and continues east for approximately 7 miles before terminating at the intersection with Cattletrack Road, just west of the Arizona Canal. The posted speed limit is 40 mph within the vicinity of the site.

**Quail Run Road** is a north-south two-lane road with one lane in each travelling direction. Quail Run Road begins just north of a private property south of the site and continues north for approximately 0.15 miles before terminating at the intersection with Lincoln Drive. There is no posted speed limit.

**Scottsdale Road** is a north-south six-lane road with three lanes in each travelling direction within the vicinity of the site. There are broken, raised medians along the whole length of road. Scottsdale Road begins at the intersection with Rio Salado Parkway and continues north for approximately 18 miles before terminating at the intersection with Carefree Highway. The posted speed limit is 45 mph.

### *EXISTING INTERSECTION CONFIGURATION*

The intersection of **Mockingbird Lane and Lincoln Drive** is a four-legged signalized intersection with protected left turns on the southbound and westbound approaches. The northbound and southbound approaches each have one dedicated left turn lane and a shared through and right turn lane. The eastbound and westbound approaches each have one dedicated left turn lane, one through lane, and one shared through and right turn lane. There are pedestrian crosswalks across all legs of the intersection.

The intersection of **Quail Run Road and Lincoln Drive** is a four-legged, stop-controlled intersection with free movements in the east and west directions. The northbound approach has one shared left turn/through/right turn lane. The eastbound approach has one through lane and one shared through and right turn lane. The westbound approach has two through lanes and a break in the median to allow for dedicated left turns. The southbound approach is currently a construction access point with one shared left turn/through/right turn lane.

The intersection of **Smoke Tree Driveway West and Lincoln Drive** is a three-legged, stop-controlled “T” intersection with free movements in the east and west directions. The northbound approach has one shared left turn and right turn lane. The eastbound approach has one through lane and one shared through and right turn lane. The westbound approach has two through lanes and a break in the median to allow for dedicated left turns.

The intersection of **Smoke Tree Driveway East and Lincoln Drive** is a three-legged, stop-controlled “T” intersection with free movements in the east and west directions. The northbound approach has one shared left turn and right turn lane. The eastbound approach has one through lane and one shared through and right turn lane. The westbound approach has two through lanes and a break in the median to allow for dedicated left turns.

The intersection of **Medical Office Driveway West and Lincoln Drive** is a three-legged, stop-controlled “T” intersection with free movements in the east and west directions. The northbound approach has one shared left turn and right turn lane. The eastbound approach has one through lane and one shared through and right turn lane. The westbound approach has two through lanes and a break in the median to allow for dedicated left turns.

The intersection of **Medical Office Driveway East and Lincoln Drive** is a three-legged, stop-controlled “T” intersection with free movements in the east and west directions. The northbound approach has one shared left turn and right turn lane. The eastbound approach has one through lane and one shared through and right turn lane. The westbound approach has two through lanes and a break in the median to allow for dedicated left turns.

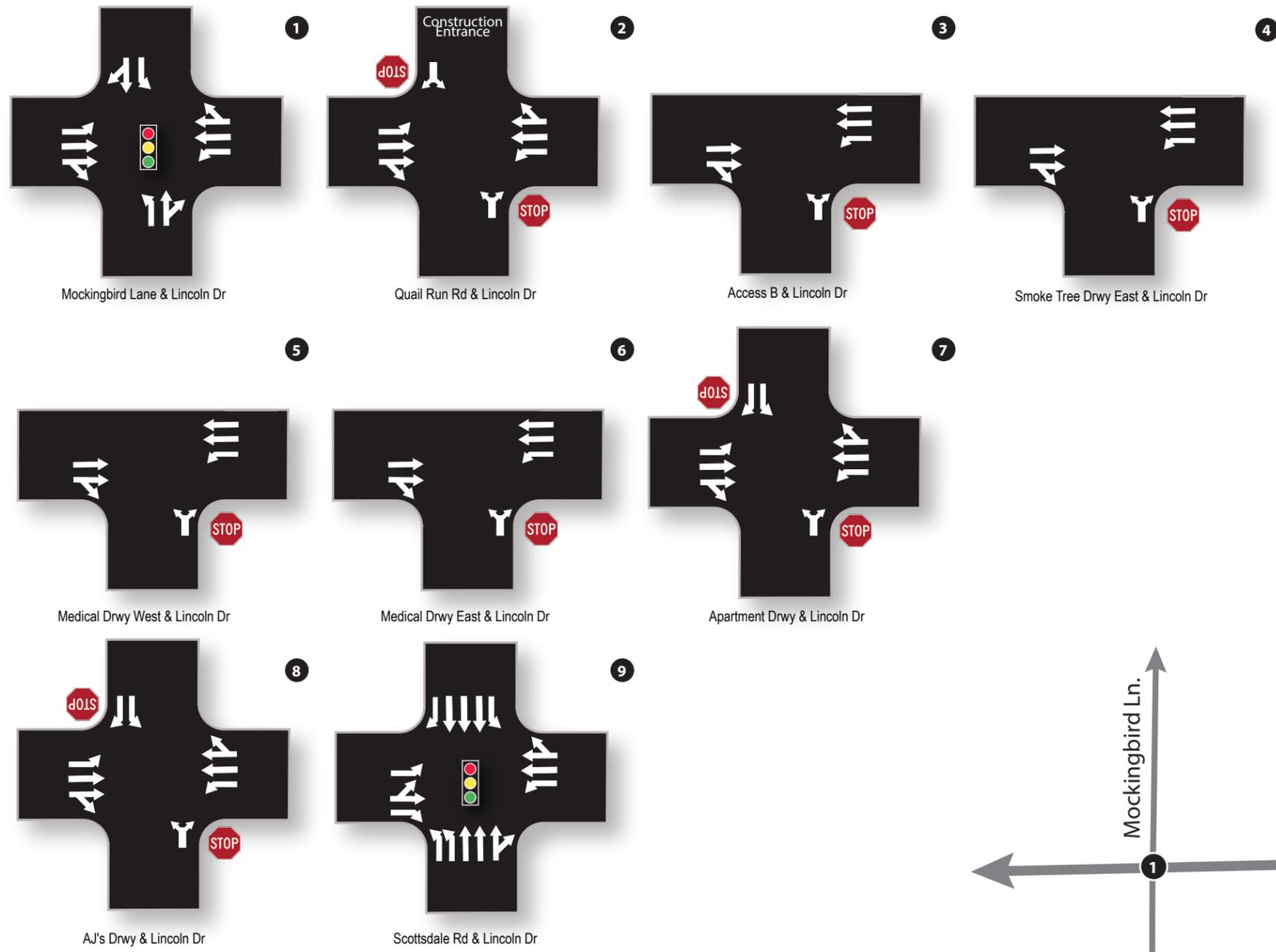
The intersection of **Apartment Driveway and Lincoln Drive** is a four-legged, stop-controlled intersection with free movements in the east and west directions. The southbound approach consists of one dedicated left turn lane and one dedicated right turn lane. The eastbound approach consists of a two-way-left turn lane one through lane and one shared through and right turn lane. The northbound approach consists of one shared left turn and right turn lane. The westbound approach consists of a two-way left turn lane, on through lane and one shared through and right turn lane.

The intersection of **AJ’s Driveway and Lincoln Drive** is a four-legged, stop-controlled intersection with free movements in the east and west directions. The northbound approach has one shared left turn and right turn lane. The eastbound approach has a

two-way-left-turn lane, one through lane and one shared through and right turn lane. The southbound approach has one dedicated left turn lane and one dedicated right turn lane. The westbound approach has a dedicated left turn lane, one through lane and one shared through and right turn lane.

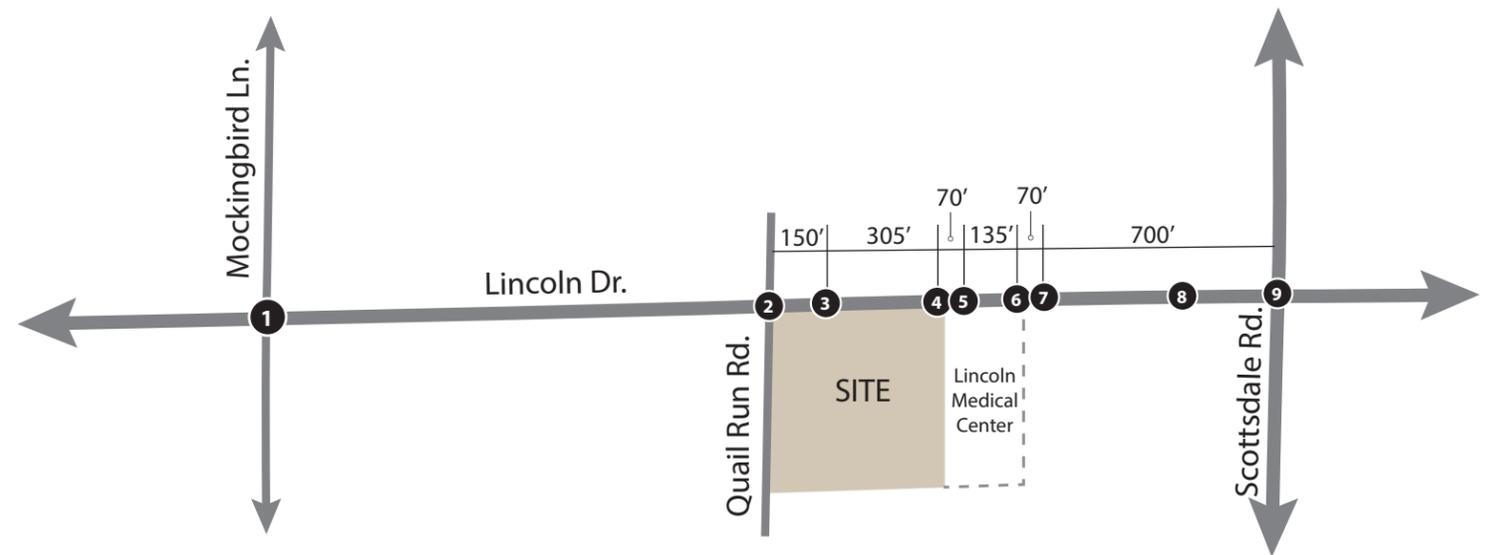
The intersection of **Scottsdale Road and Lincoln Drive** is a four-legged signalized intersection with split phasing on the eastbound and westbound approaches and protected left turns on the northbound and southbound approaches. The northbound approach has two dedicated left turn lanes, two through lanes and one shared through and right turn lane. The westbound approach has one dedicated left turn lane, one through lane and one shared through and right turn lane. The southbound approach has one dedicated left turn lane, three through lanes and one dedicated right turn lane. The eastbound approach has one dedicated left turn lane, one shared left turn and through lane and one dedicated right turn lane. There are pedestrian cross walks across all legs of the intersection.

The existing intersection configurations and traffic control is illustrated in **Figure 2**.



Thru or Turning Movement  
 Bike Lane  
 Traffic Signal Stop Sign

NORTH



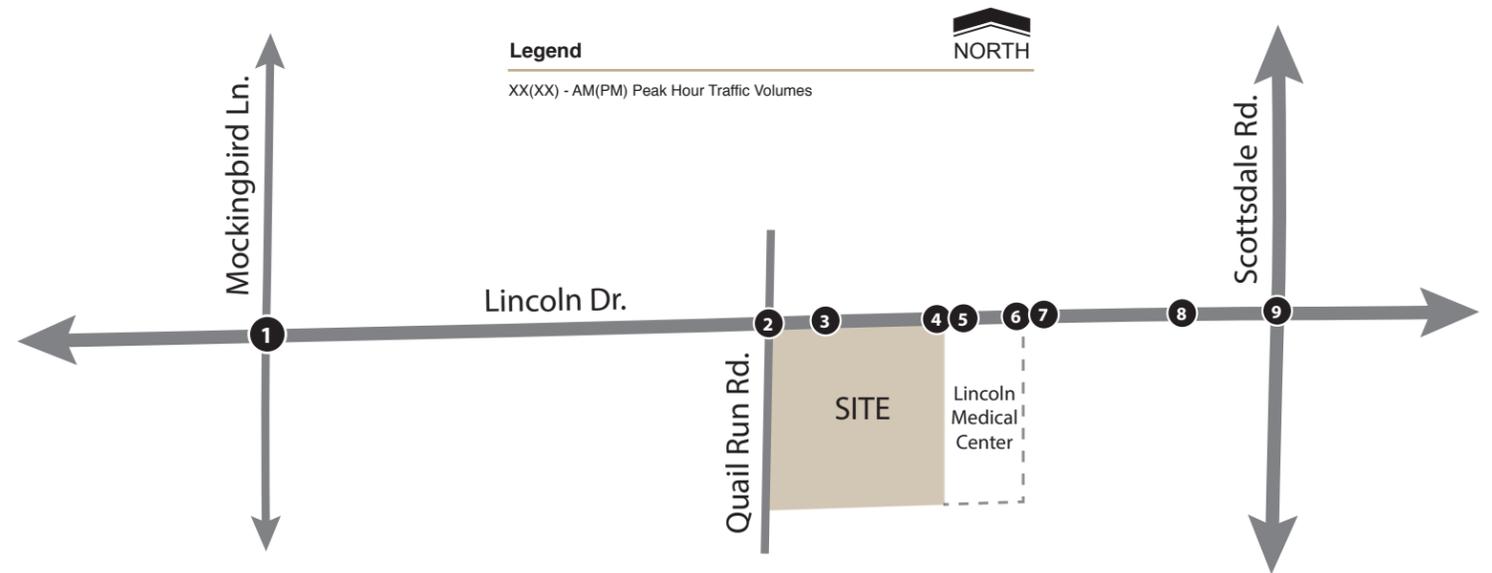
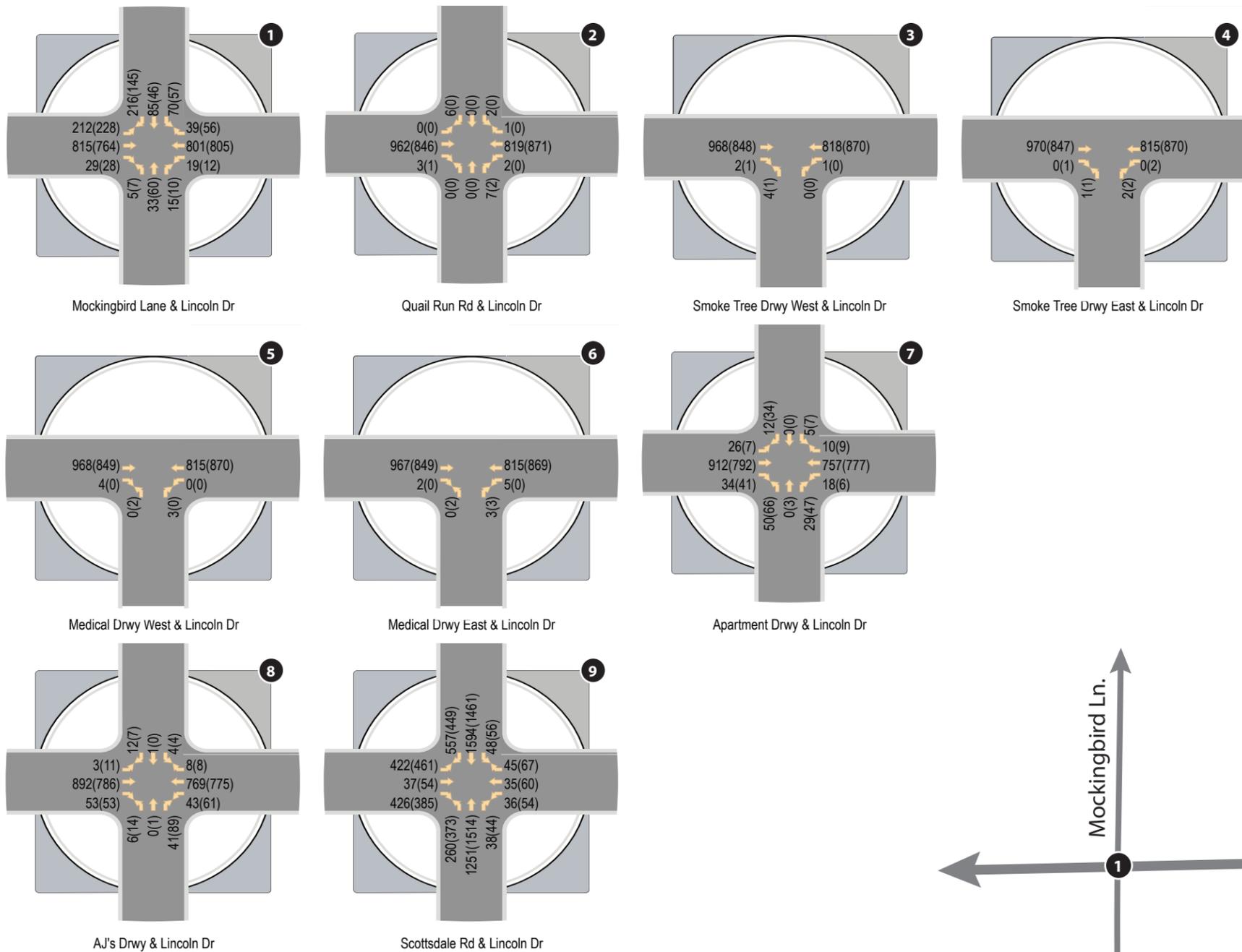
**Figure 2:** Existing Lane Configurations and Traffic Controls

## **EXISTING TRAFFIC VOLUMES**

CivTech engaged Field Data Services of Arizona, Inc. to record traffic volumes at nine study intersections within the project vicinity. Peak hour volume turning movement counts were performed from 7:00-9:00 AM and 4:00-6:00 PM on Thursday, May 31, 2018. Peak hour turning movement counts were conducted at the following study intersections:

- Mockingbird Lane & Lincoln Drive
- Quail Run Road & Lincoln Drive
- Smoke Tree Driveway West & Lincoln Drive
- Smoke Tree Driveway East & Lincoln Drive
- Medical Office Driveway West & Lincoln Drive
- Medical Office Driveway East & Lincoln Drive
- Apartment Driveway & Lincoln Drive
- AJ's Driveway & Lincoln Drive
- Scottsdale Road & Lincoln Drive

The Town of Paradise Valley requires that a seasonal adjustment factor be applied to existing traffic counts taken outside of typical months. These traffic counts were conducted in May, and summer months typically have lower amounts of traffic due to school not being in session. The seasonal adjustment factor for the month of May is 1.01, however since they were conducted on the last day of the month, the adjustment factor for the month of June will be used to be more conservative. The seasonal adjustment factor for June is 1.03, this was applied to all traffic within the study area. Existing 2018 traffic volumes with the seasonal adjustment factor applied are presented in **Figure 3** for the weekday AM and PM peak hours. Raw traffic volume data obtained for this study have been included in **Appendix B**.



**Figure 3:** Seasonally Adjusted Existing Traffic Volumes

## EXISTING CAPACITY ANALYSIS

Peak hour capacity analyses have been conducted for the study intersections based on existing intersection configurations and traffic volumes. All intersections have been analyzed using the methodologies presented in the *Highway Capacity Manual (HCM)*, *Special Report 209*, and Updated 2016 and using Synchro software, version 10.0 under the HCM 6<sup>th</sup> edition methodology.

The concept of level of service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels of service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. Levels of service for intersections are defined in terms of delay ranges. **Table 1** lists the level of service criteria for signalized and unsignalized intersections, respectively.

**Table 1 – Level of Service Criteria**

Level of Service	Control Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Source: Exhibit 19-8, Exhibit 20-2, Exhibit 21-8 and Exhibit 22-8, Highway Capacity Manual 2017

Synchro 10.0 software calculates the LOS per the HCM 6<sup>th</sup> edition methodology. The 6<sup>th</sup> edition HCM documents the signalized LOS calculation methodology which takes into account lane geometry, traffic volumes and cycle length/phasing to compute LOS. Synchro analysis worksheets report individual movement delay/LOS and overall delay/LOS for signalized intersections; unsignalized intersection worksheets report the worst-case delay/LOS and the average overall intersection delay. Signal timing data for the intersection of Mockingbird Lane and Lincoln Drive was provided by the Town of Paradise Valley. Timing for the intersection of Scottsdale Road and Lincoln Drive was provided by the City of Scottsdale. Results of the existing level of service analyses are shown in **Table 2** for both AM and PM peak hours. The existing conditions analysis worksheets have been included in **Appendix C**.

**Table 2 – Existing Peak Hour Levels of Service**

ID	Intersection	Intersection Control	Approach/Movement	Existing LOS AM (PM)	Mitigated AM (PM)
1	Mockingbird Lane & Lincoln Drive	Signal	NB	E(E)	[Not Mitigated]
			SB	E(E)	
			EB	A(A)	
			WB	B(A)	
			<b>Overall</b>	<b>B(B)</b>	
2	Quail Run Road & Lincoln Drive	2-way stop (NB/SB)	NB Shared	B(A)	[Not Mitigated]
			SB Shared	B(A)	
			EB Left	A(A)	
			WB Left	A(A)	
3	Smoke Tree Driveway West & Lincoln Drive	1-way stop (NB)	NB Shared	B(B)	[Not Mitigated]
			WB Left	A(A)	
4	Smoke Tree Driveway East & Lincoln Drive	1-way stop (NB)	NB Shared	B(B)	[Not Mitigated]
			WB Left	A(A)	
5	Medical Driveway West & Lincoln Drive	1-way stop (NB)	NB Shared	B(B)	[Not Mitigated]
			WB Left	A(A)	
6	Medical Driveway West & Lincoln Drive	1-way stop (NB)	NB Shared	B(B)	[Not Mitigated]
			WB Left	A(A)	
7	Apartment Driveway & Lincoln Drive	2-way stop (NB/SB)	NB Shared	B(B)	[Not Mitigated]
			SB Left	B(B)	
			SB Right	A(B)	
			EB Left	A(A)	
			WB Left	A(A)	
8	AJ's Driveway & Lincoln Drive	2-way stop (NB/SB)	NB Shared	B(B)	[Not Mitigated]
			SB Left	B(B)	
			SB Right	A(A)	
			EB Left	A(A)	
			WB Left	A(A)	
9	Scottsdale Road & Lincoln Drive	Signal	NB	C(C)	D(D)
			SB	D(D)	D(D)
			EB	E(E)	D(D)
			WB	E(E)	E(E)
			<b>Overall</b>	<b>D(D)</b>	<b>D(D)</b>

The results of the existing conditions analysis summarized in **Table 2** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better). The following intersections include one or more approaches which currently operate with poor levels of service.

The intersection of **Mockingbird Lane and Lincoln Drive** currently operates with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle

starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 6.1 seconds per vehicle and 10.5 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.

The intersection of **Scottsdale Road and Lincoln Drive** currently experiences delay on the eastbound and westbound approaches during both the AM and PM peak hours. Although mitigation is not typically recommended for existing conditions, since this stretch of Lincoln Drive is currently under construction, recommendations will be made in order to minimize the current delay. During the AM peak hour, it is recommended that the eastbound green time be extended from 30 seconds to 33 seconds and the westbound green time be extended from 13 seconds to 17 seconds. This mitigation measure is anticipated to decrease the eastbound delay from 56.3 seconds per vehicle to 53.9 seconds per vehicle. The westbound approach remains unchanged, in order to mitigate this delay, the initial green time could be changed to allow for more vehicles to pass through the intersection without the light changing from green to yellow, however, this change will be at the discretion of the City of Scottsdale as this intersection is owned and operated by them.

During the PM peak hour, it is recommended that the eastbound phase be extended from 30 seconds to 33 seconds and the westbound phase be increased from 13 seconds to 21 seconds. With these mitigation measures applied, it is expected that the eastbound delay will decrease from 57.3 seconds per vehicle to 54.2 seconds per vehicle and the westbound delay will decrease from 70.1 seconds per vehicle to 63.0 seconds per vehicle.

Existing signal timing proposed for the existing scenario was applied to all future scenarios.

## PROPOSED DEVELOPMENT

### ***SITE LOCATION***

The proposed redevelopment will be located at 7101 East Lincoln Drive in the Town of Paradise Valley, Arizona.

### ***SITE ACCESS***

There are two access scenarios that will be evaluated within this study; they are described in detail below.

#### Scenario 1

Scenario 1 provides two access points proposed for this development, described as follows:

- Access A is a proposed full movement access point on Lincoln Drive located at the Smoke Tree Resort eastern property line; this will be a shared access with the Lincoln Medical Plaza bordering Smoke Tree to the east. The two existing access points to the site will be removed and replaced with this single access. The two Lincoln Medical driveways will also be removed in this scenario. After discussion with Paul Mood at the Town of Paradise Valley, it was concluded that this is the most likely scenario for the redevelopment of Smoke Tree. The location of this intersection is shown in Figure 4 along with the scenario 2 option. For both scenarios, a dedicated eastbound right turn lane will be constructed on Lincoln Drive.
- Access B is a proposed access from Quail Run Road to the Smoke Tree site. The intersection of Quail Run Road and Lincoln Drive will be signalized by 2020 and it is expected that some vehicles will utilize Quail Run Road to access the Smoke Tree site. This access will be a full movement access on the western border of the site approximately 215 south of Lincoln Drive.

The two existing Smoke Tree Driveways, intersections 3 and 4, will both be removed by opening year 2021 and replaced with a single, full movement access located west of the eastern property line.

#### Scenario 2

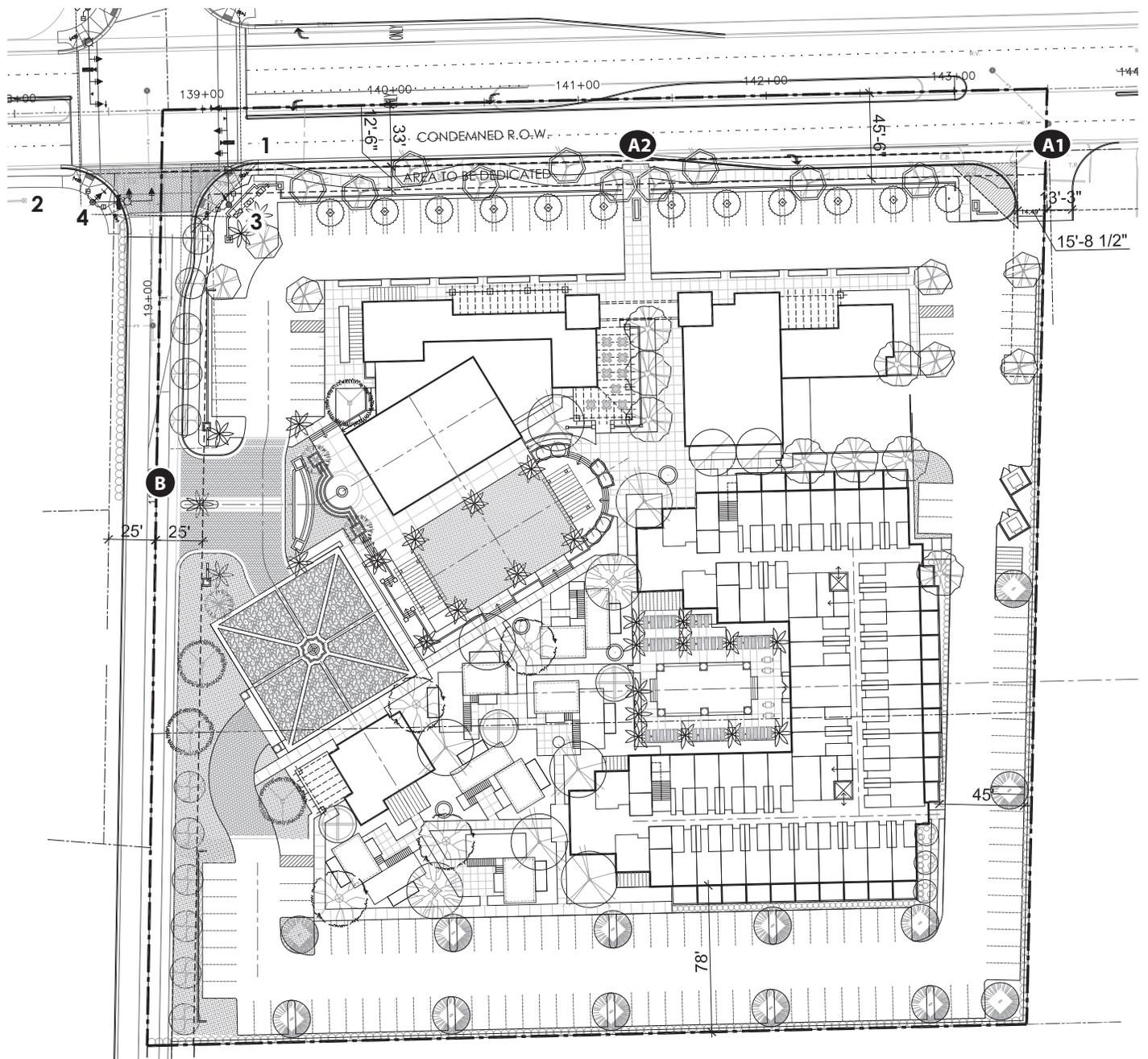
There are two access points proposed for this development, described as follows:

- Access A is a proposed right in/right out access point on Lincoln Drive located west of the eastern Smoke Tree property line. The two existing access points to the site will be removed and replaced with this single access. The final location of this access point will be close to the midpoint of the Smoke Tree frontage on Lincoln Drive. A median is currently being constructed on Lincoln Drive, which would prevent any left-in or left-out movements at this location. For both

scenarios, a dedicated eastbound right turn lane will be constructed on Lincoln Drive.

- Access B is a proposed access from Quail Run Road to the Smoke Tree site. The intersection of Quail Run Road and Lincoln Drive will be signalized by build out year 2021, and it is expected that some vehicles will utilize Quail Run Road to access the Smoke Tree site. This access will be a full movement access on the western border of the site approximately 215 feet south of Lincoln Drive.

The proposed site plan is provided in **Figure 4**.



Note: This Site Plan does not accurately depict Access B in its final location

- A1 - Represents approximate location of Access if cross access with Lincoln Medical is available.
- A2 - Represents approximate location of Access if no cross access with Lincoln Medical is available.

**Figure 4:** Site Plan and Access

## **TRIP GENERATION**

The potential trip generation for the proposed development was estimated utilizing the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10<sup>th</sup> Edition* and *Trip Generation Handbook, 3<sup>rd</sup> Edition*. The ITE *Trip Generation Manual* contains data collected by various transportation professionals for a wide range of different land uses. The data are summarized in the report and average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily and peak hour trips.

Since the Smoke Tree Resort is a proposed redevelopment of the current resort, some of the existing traffic counts are existing trips generated by the site. To be conservative, these trips were not subtracted from the existing traffic counts, meaning that there will actually be less “new trips” than mentioned in this study.

The proposed development will consist of maximum of 102 standard hotel rooms, 6 for rent hotel resort villas, 4 of which will have 3 keys each and the remaining 2 will have 4 keys each for a total of 20 keys. The resort villas are rentable rooms, not for sale units. Additionally, the Smoke Tree Resort will provide a 3,200 square foot quality restaurant, a 4,000 square foot market and a 1,800 SF coffee shop, all of which will be open to the public as well as resort guests. The market and coffee shop will be combined into a single “shopping center” land use (land use code 820) since the two buildings are connected. An event space and other hotel amenities for guests will be provided but are not anticipated to generate any off-site trips.

Since this boutique resort does not fully comply with the definition of a standard hotel or a resort hotel, a combination of the two was used. The weighted averages from the Resort Hotel, LUC 330, and the fitted curves from the standard Hotel, LUC 310, were averaged and utilized in order to determine the number of trips generated by the Smoke Tree Resort. Additionally, an internal capture percentage was applied to the external restaurant trips, and market/coffee shop trips because it is assumed that not all trips to and from these areas will be external. For the quality restaurant, it is anticipated that 50% of the trips will be arriving externally and the other 50% will be hotel guests. For the market/coffee shop, it is assumed that 65% of the trips will be from resort guests and the remaining 35% will be external trips. **Table 3** depicts the trip generation summary for the proposed development. Trip generation calculations are provided in **Appendix D**.

**Table 3 – Trip Generation Summary**

Proposed Use	ITE LUC	Size	Units	Weekday Trips						
				Daily	AM			PM		
				Total	In	Out	Total	In	Out	Total
Main Hotel/ Resort Villas	310/330	122	Rooms	544	28	20	48	29	28	57
Quality Restaurant	931	3,200	SF	268	2	0	2	17	8	25
Market/Coffee Shop	820	5,800	SF	218	3	2	5	11	11	22
Total Trips				1,030	33	22	55	57	47	104
<i>Internal Capture Reduction (Quality Restaurant 50%)</i>				<i>(134)</i>	<i>(1)</i>	<i>(0)</i>	<i>(1)</i>	<i>(9)</i>	<i>(4)</i>	<i>(13)</i>
<i>Internal Capture Reduction (Market/Coffee Shop 65%)</i>				<i>(142)</i>	<i>(2)</i>	<i>(1)</i>	<i>(3)</i>	<i>(7)</i>	<i>(7)</i>	<i>(14)</i>
<b>Subtotals</b>				<b>754</b>	<b>30</b>	<b>21</b>	<b>51</b>	<b>41</b>	<b>36</b>	<b>77</b>

As shown in **Table 3**, the proposed development is anticipated to generate approximately 754 external weekday daily trips, with 51 external trips occurring in the AM peak hour and 77 external trips occurring in the PM peak hour.

### **TRIP DISTRIBUTION AND ASSIGNMENT**

A single trip distribution pattern was assumed for the proposed development. It is expected that the resort development will generate trips based on future population within a 7-mile radius of the site. Future total population within a 7-mile radius of the site, as predicted by the 2020/2030 socio-economic data compiled by the Maricopa Association of Governments (MAG), was used as a basis to estimate trip distribution for the resort development.

The resulting trip distribution percentages for the study area are shown in **Table 4**. The trip distribution calculations are included in **Appendix E**.

**Table 4 – Site Trip Distribution**

Direction (To/From)	Trip Distribution
North on Mockingbird Ln	6%
South on Mockingbird Ln	4%
West on Lincoln Dr	25%
North on Scottsdale Rd	35%
South on Scottsdale Rd	30%
<b>Total</b>	<b>100%</b>

**Figure 5** illustrates the trip distribution percentages shown in **Table 4** on the existing roadway network with the study area. The percentages presented in **Figure 5** were applied to the site trips generated to determine the AM and PM peak hour site traffic at the intersections within the study area. The resulting site generated traffic for the proposed development are presented in **Figure 6**.

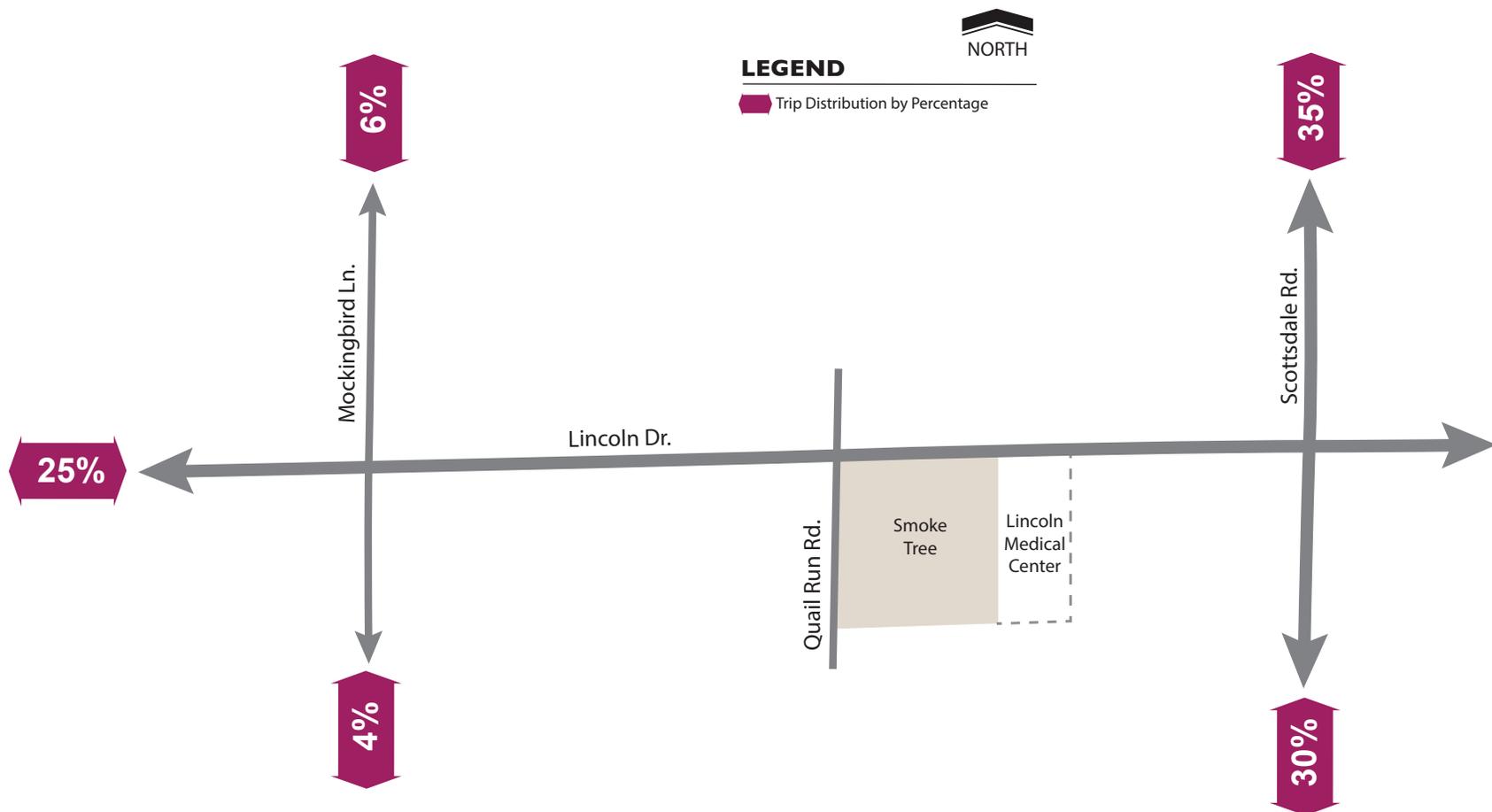


Figure 5: Trip Distribution

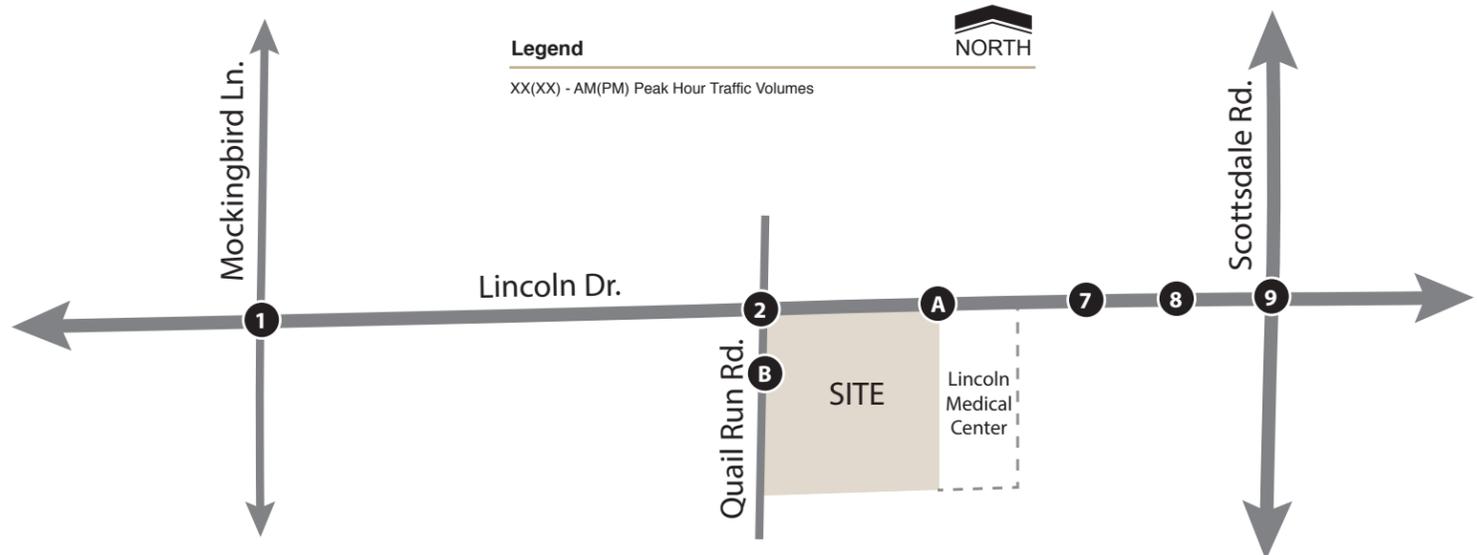
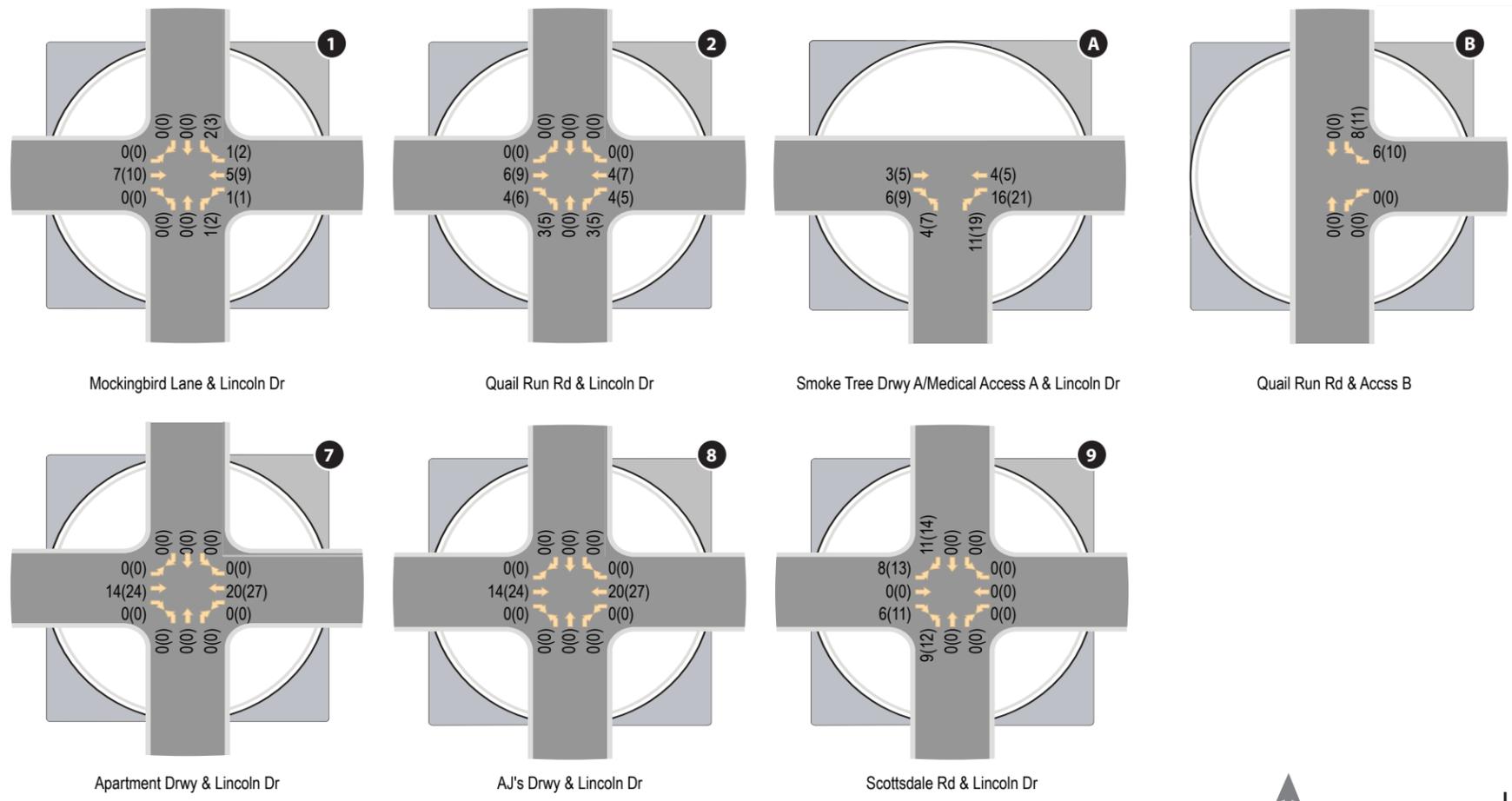
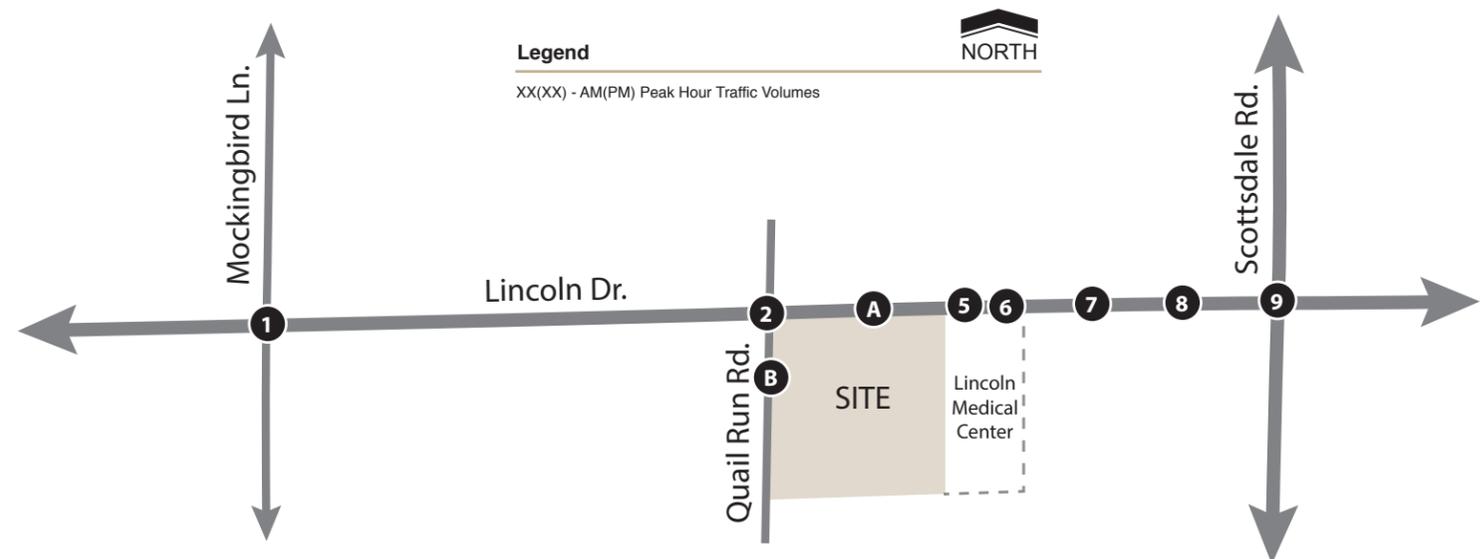
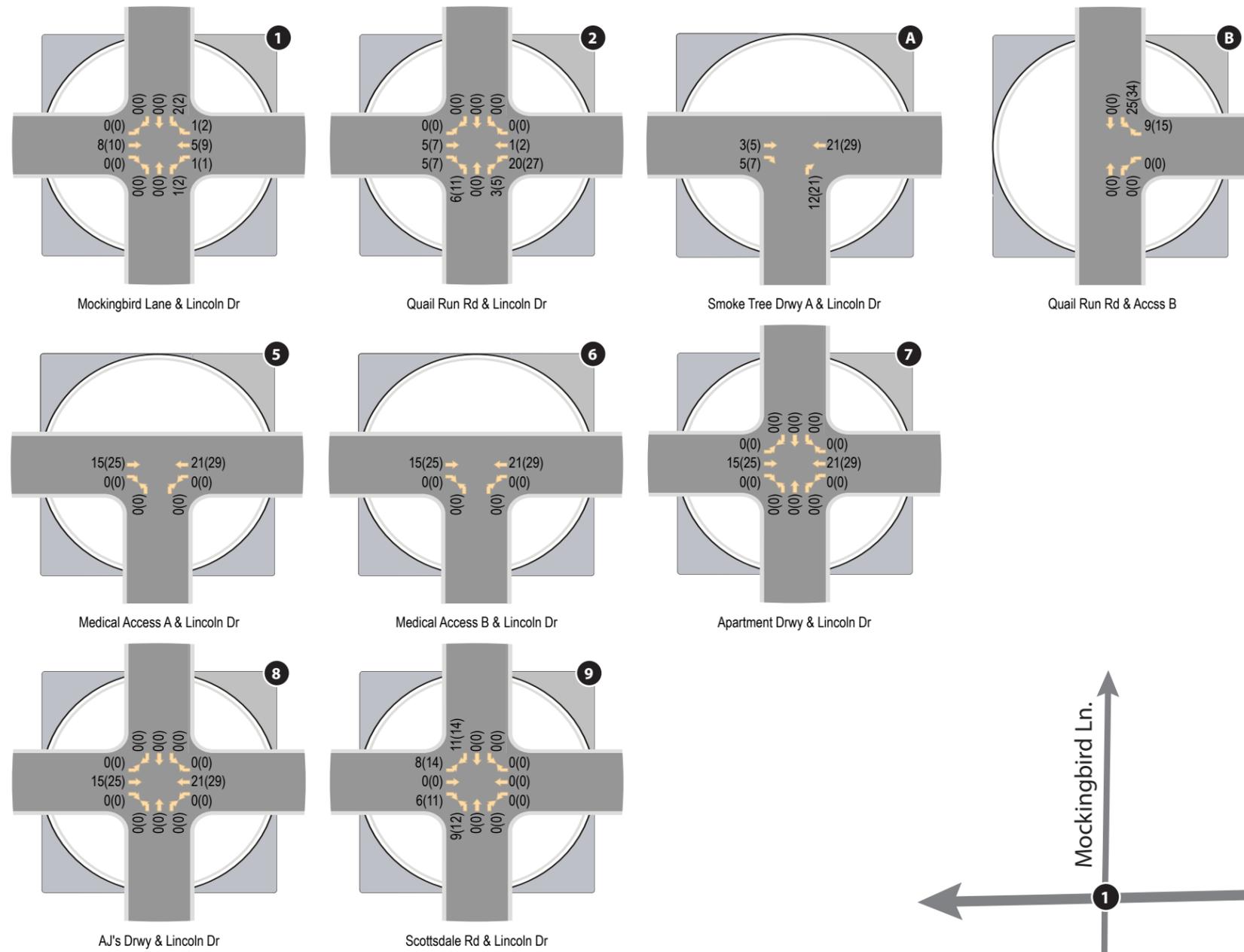


Figure 6: Scenario I - Site Generated Traffic Volumes



**Figure 7:** Scenario 2 - Site Generated Traffic Volumes

## **FUTURE BACKGROUND TRAFFIC**

CivTech applied a growth rate to the seasonally adjusted traffic counts for this study in order to obtain the background traffic volumes along the adjacent roadway network. In reviewing the City of Scottsdale Traffic Counts Map, a 1.7% average growth rate was found within the proposed study area. **Table 5** shows the expansion factors used for the proposed opening year 2021 and horizon year 2026.

**Table 5 – Growth Rate Expansion Factors**

Horizon Year	Expansion Factor
2021	1.052
2026	1.144

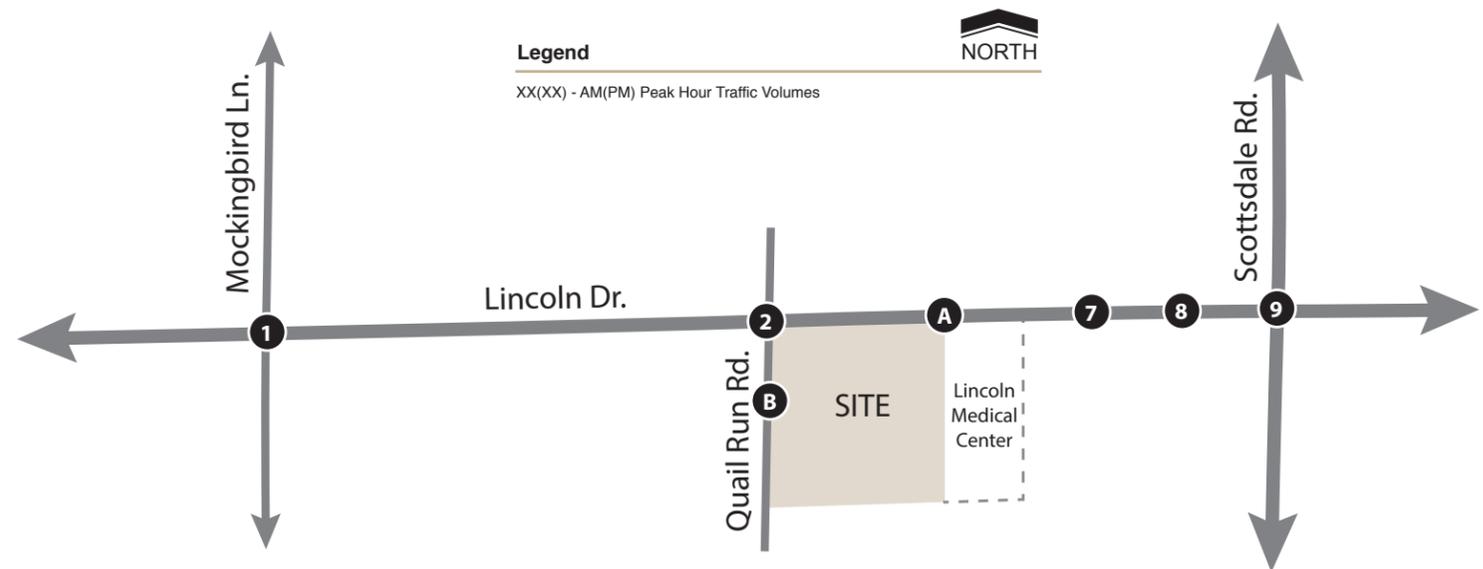
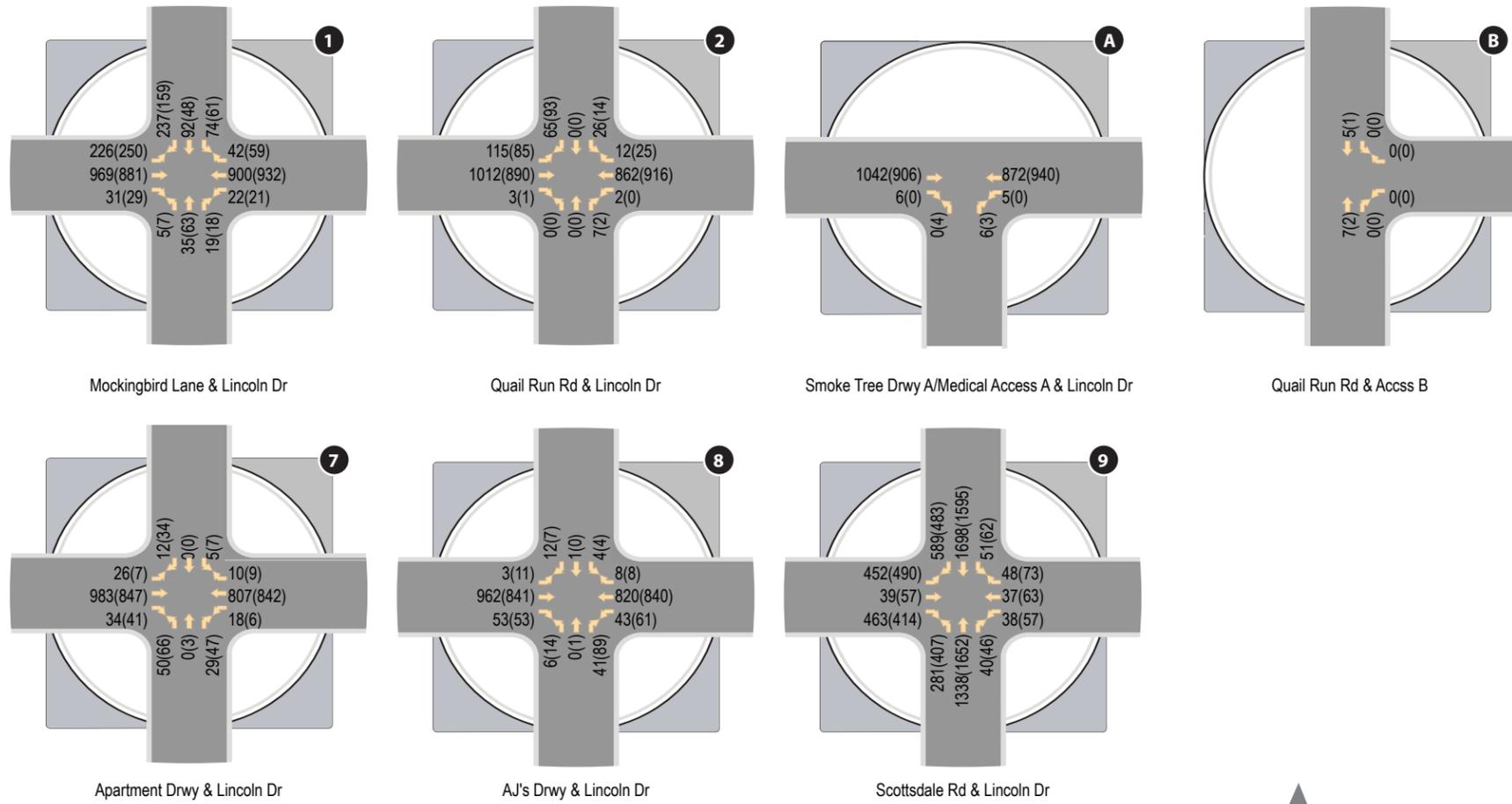
Applying the growth rate expansion factors to the seasonally adjusted existing traffic volumes predicts the volume of traffic anticipated on the surrounding area roads for opening year 2021 and horizon year 2026. Directly north of the proposed Smoke Tree Resort is the new Ritz Carlton Resort. Phase 1 of that development is expected to be open by 2021, meaning that it will be adding some site generated trips to the surrounding roadway network. Since CivTech was the company that performed the analysis for the Ritz Carlton in 2015, the site generated volumes expected for 2021 and 2026 were added to the grown existing volumes. Directly east of the proposed site is another proposed development, Lincoln Medical Center. For Scenario 1 in this TIA, all four existing driveways will be removed and replaced with a single shared driveway on the boundary line of Smoke Tree and Lincoln Medical Center. For Scenario 2, the Lincoln Medical Center access points will remain as-is and the two Smoke Tree access points will be removed and replaced with a single access centered on their Lincoln Drive frontage. These two access scenarios are represented in the 2021 and 2026 background volumes.

The future signal at the intersection of Quail Run Road and Lincoln Drive will be constructed by the Ritz Carlton developer. This signal is anticipated to be operational by the buildout year of the Smoke Tree Resort, 2021. By the horizon year 2026, this intersection will provide a dedicated southbound right turn lane striped at 300 feet. These two improvements have been included in the analysis for the opening year 2021 and the horizon year 2026.

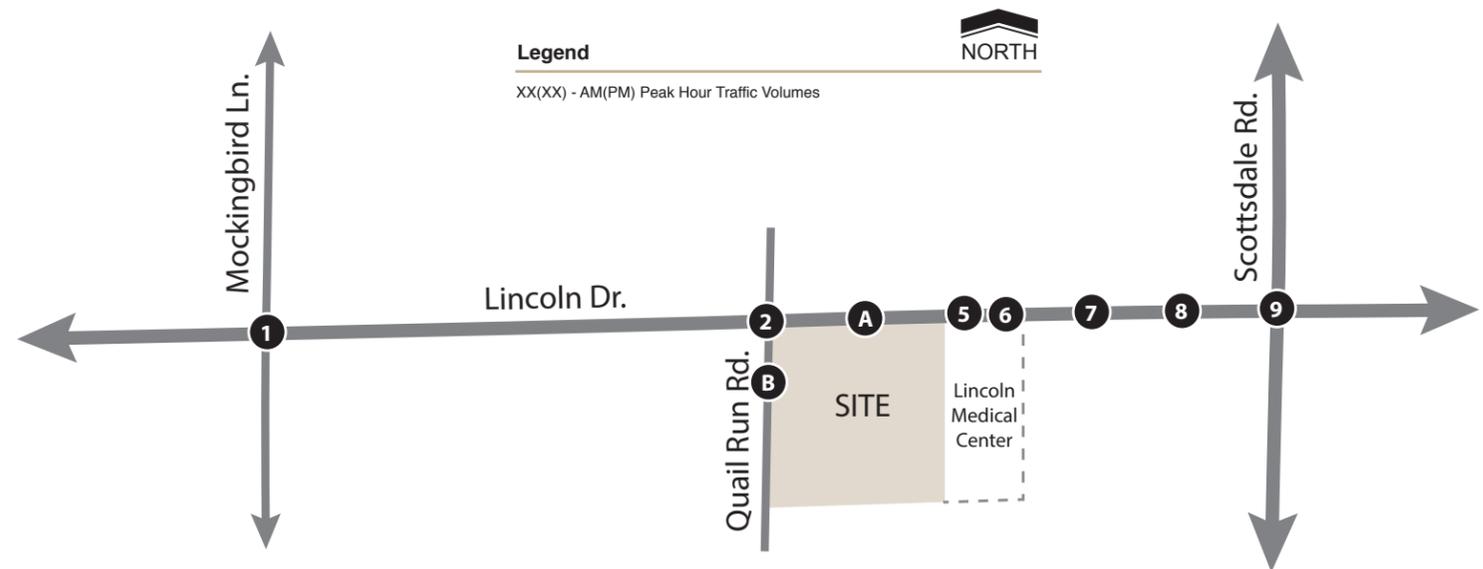
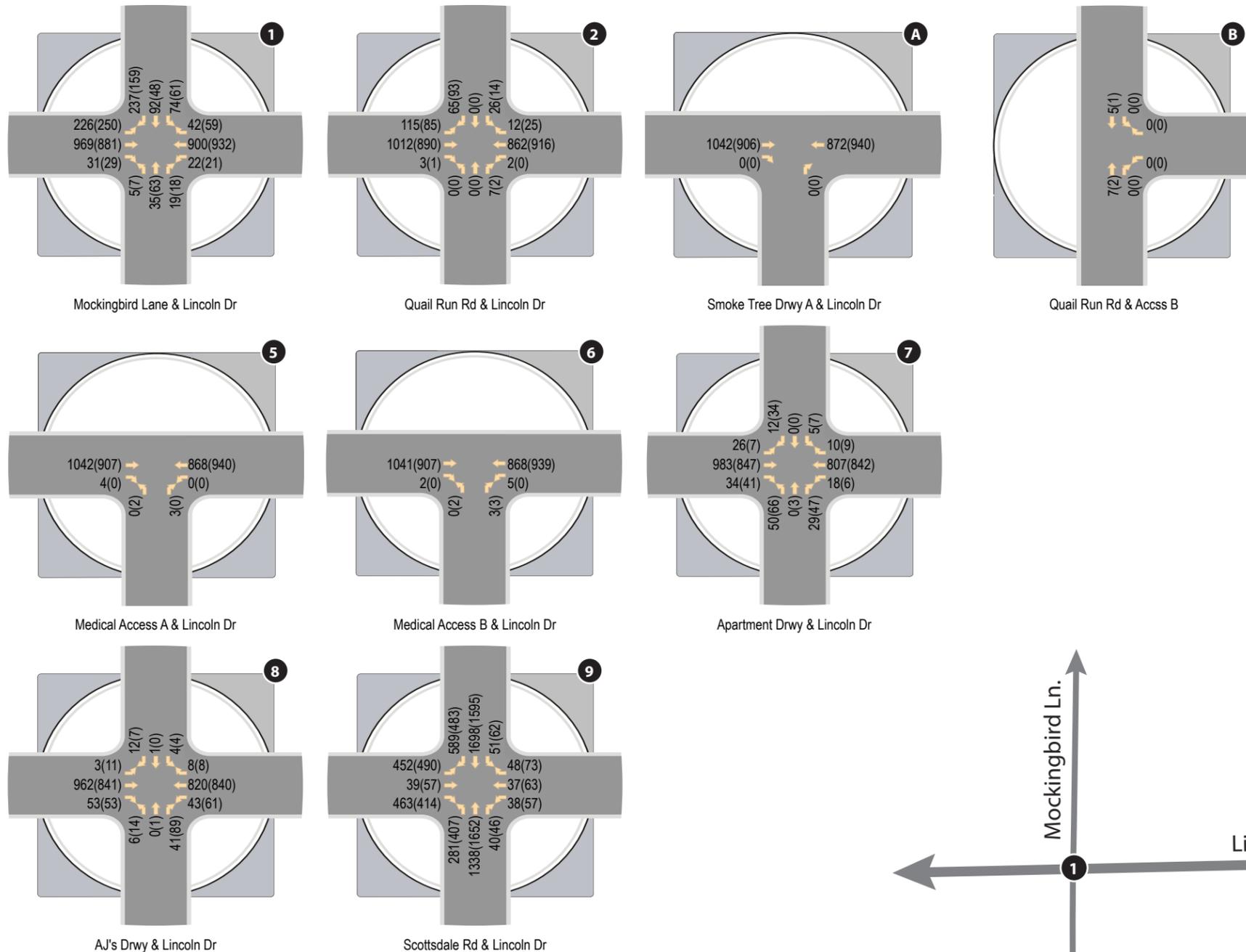
Calculated background traffic for Scenario 1 and Scenario 2 for opening year 2021 are presented in **Figure 8** and **Figure 9**, respectively. Calculated background traffic for Scenario 1 and Scenario 2 for the horizon year 2026 are presented in **Figure 10** and **Figure 11**, respectively. Ritz Carlton site volumes, and more detailed background traffic calculations are included in **Appendix F**.

## **TOTAL TRAFFIC**

Total traffic was determined by adding the site generated traffic to the projected background traffic. Total peak hour traffic volumes for the opening year 2021 are shown in **Figure 12** and **Figure 13** for scenario 1 and scenario 2, respectively. Total Peak hour traffic volumes for the horizon year 2026 are shown in **Figures 14** and **Figure 15** for scenario 1 and scenario 2 respectively.



**Figure 8:** Scenario I- 2021 Background Traffic Volumes



**Figure 9:** Scenario 2 - 2021 Background Traffic Volumes

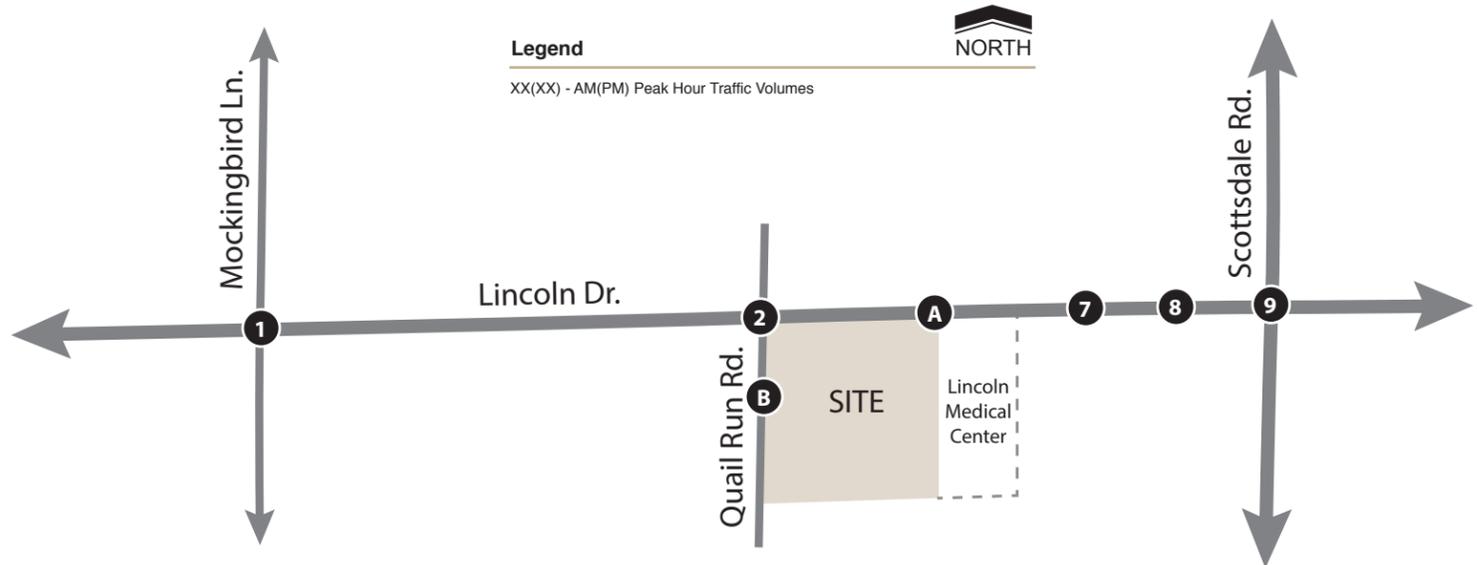
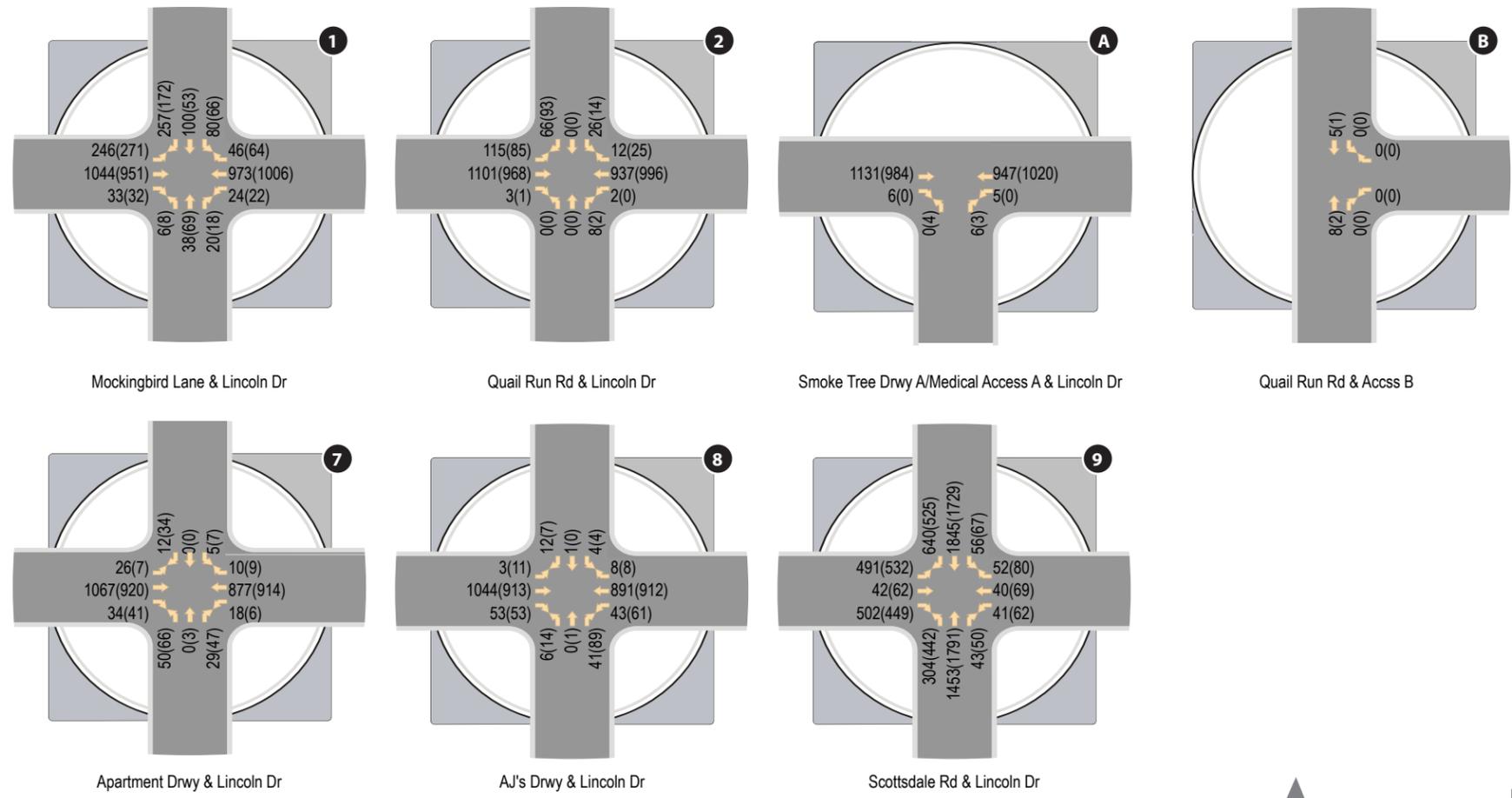


Figure 10: Scenario 1- 2026 Background Traffic Volumes

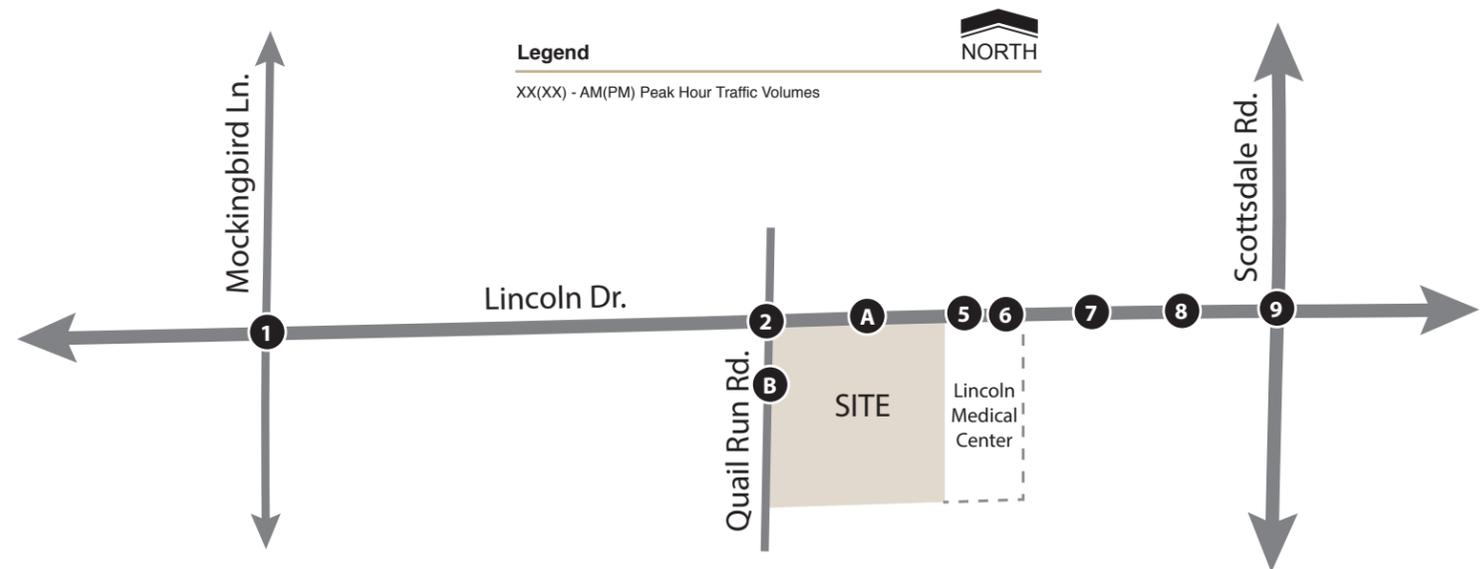
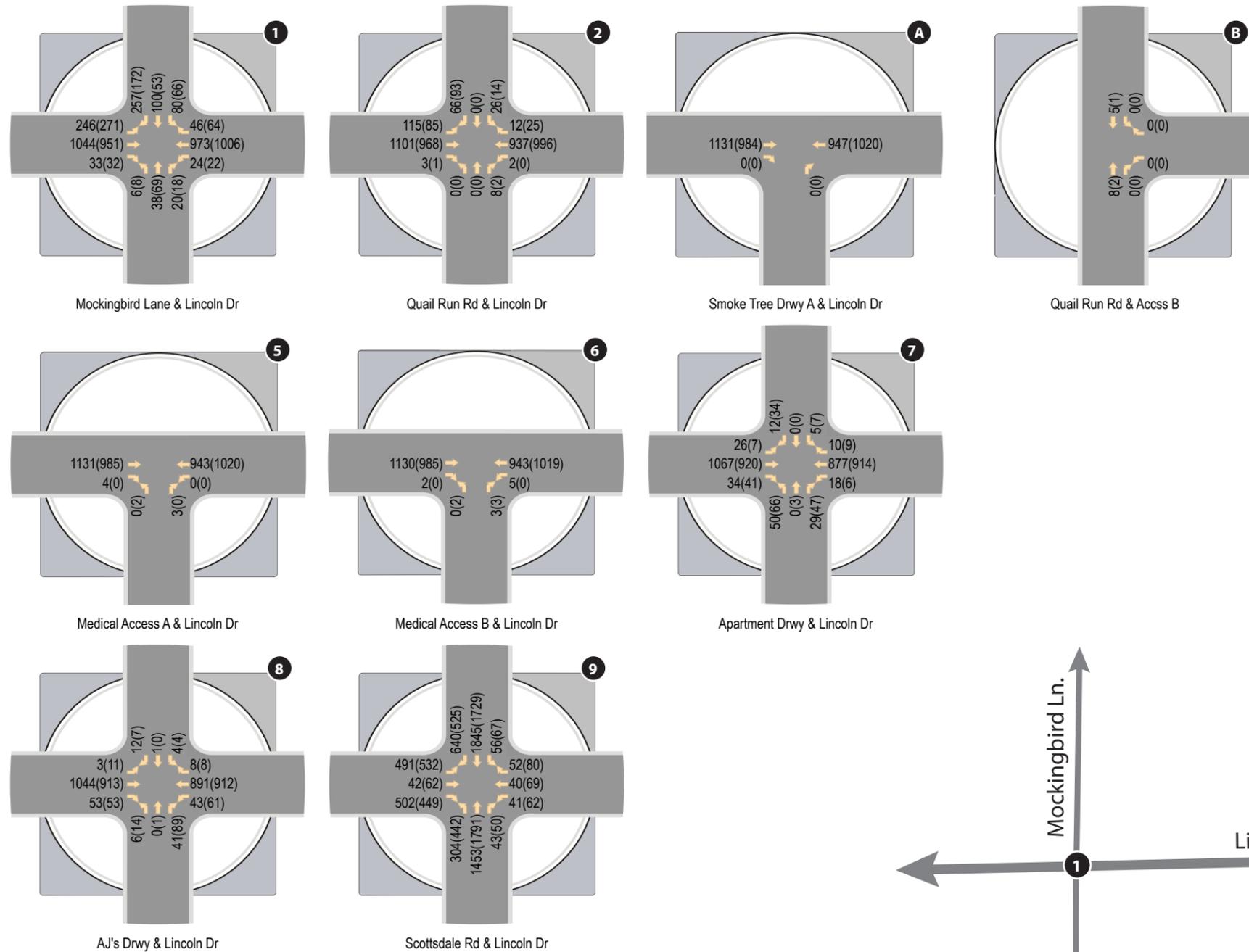
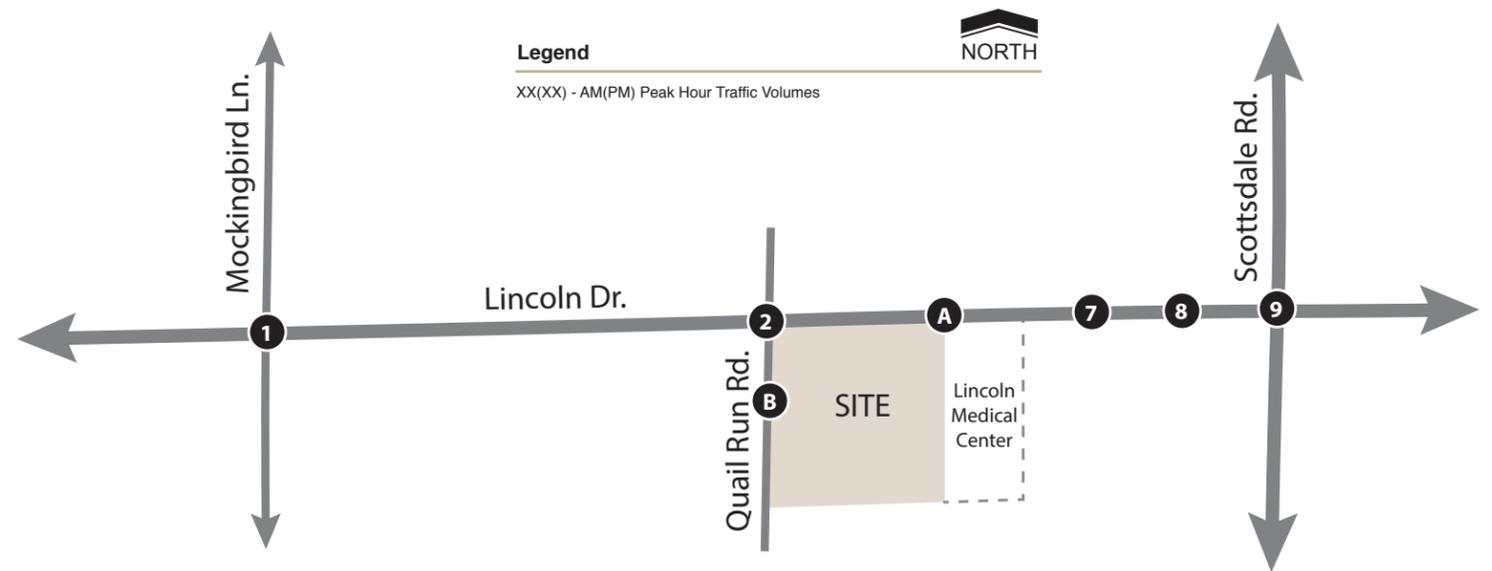
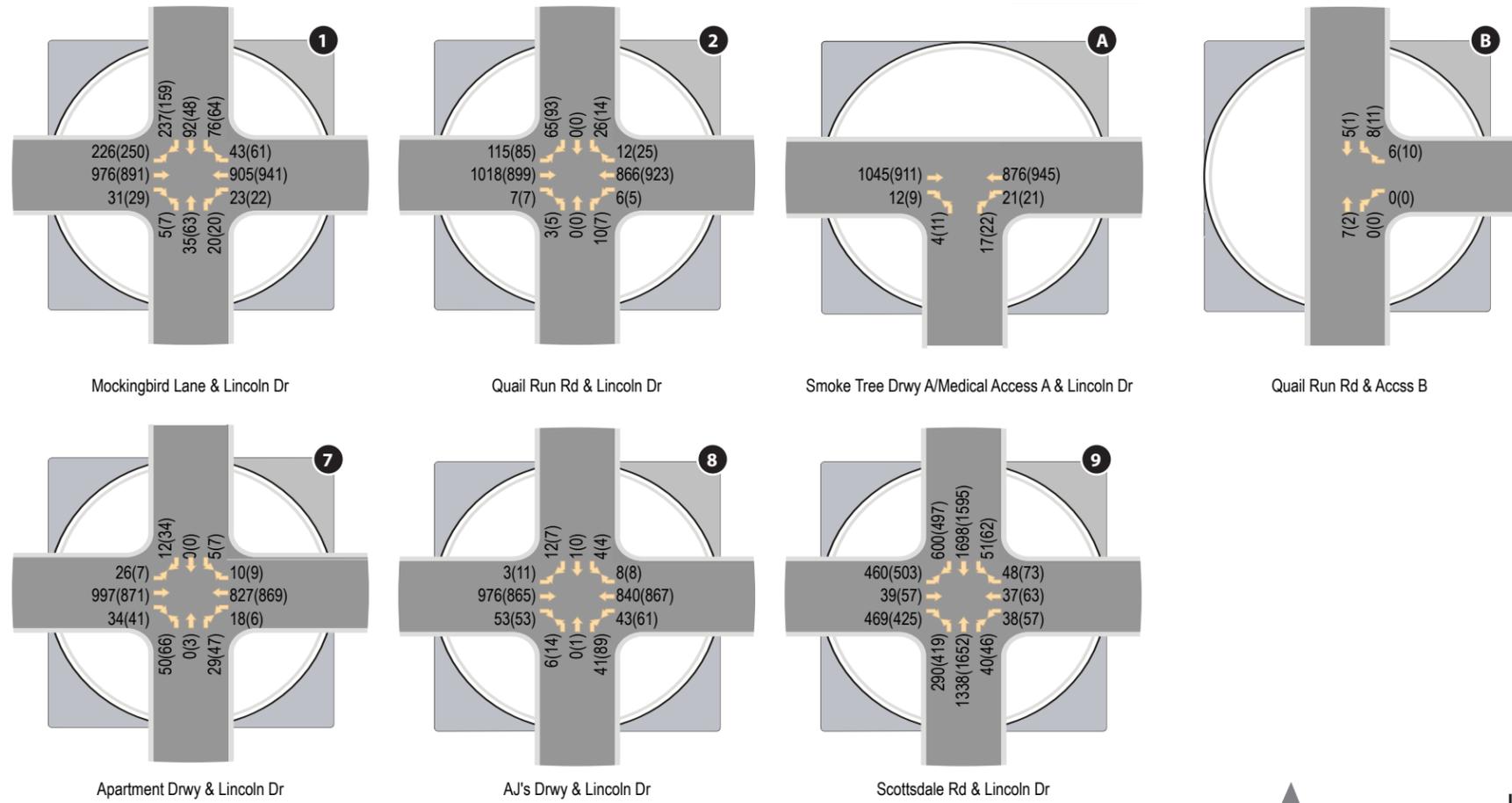


Figure 11: Scenario 2- 2026 Background Traffic Volumes



**Figure 12:** Scenario I- 2021 Total Traffic Volumes

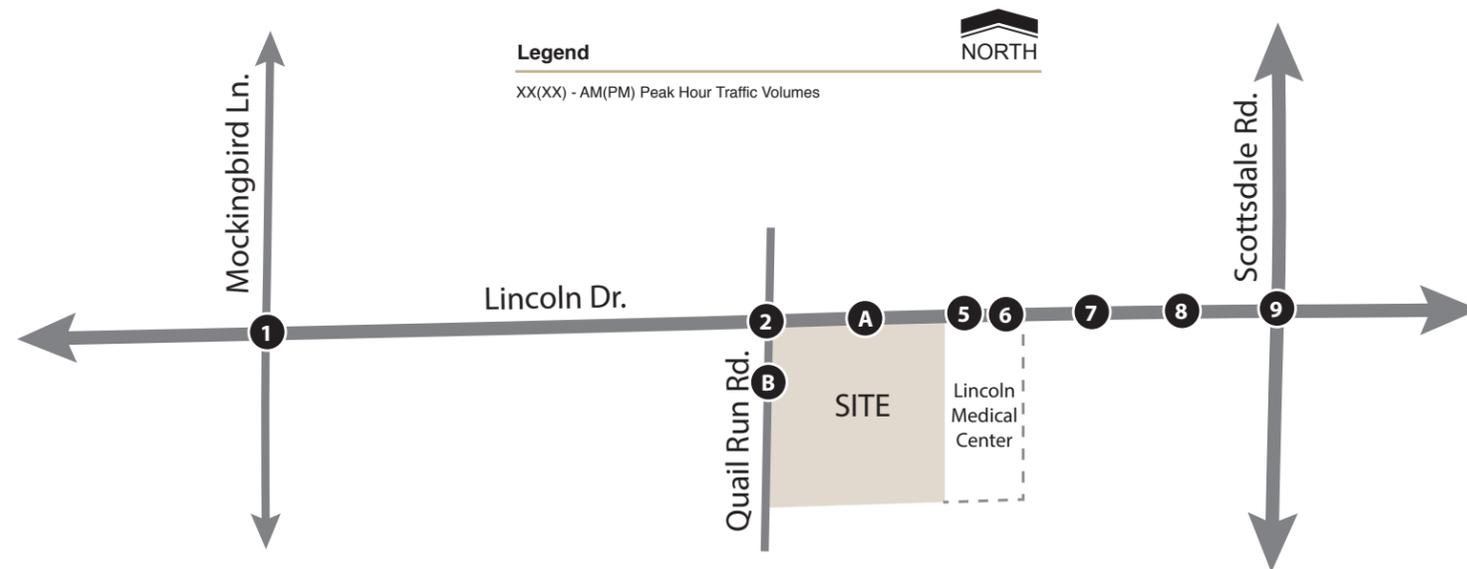
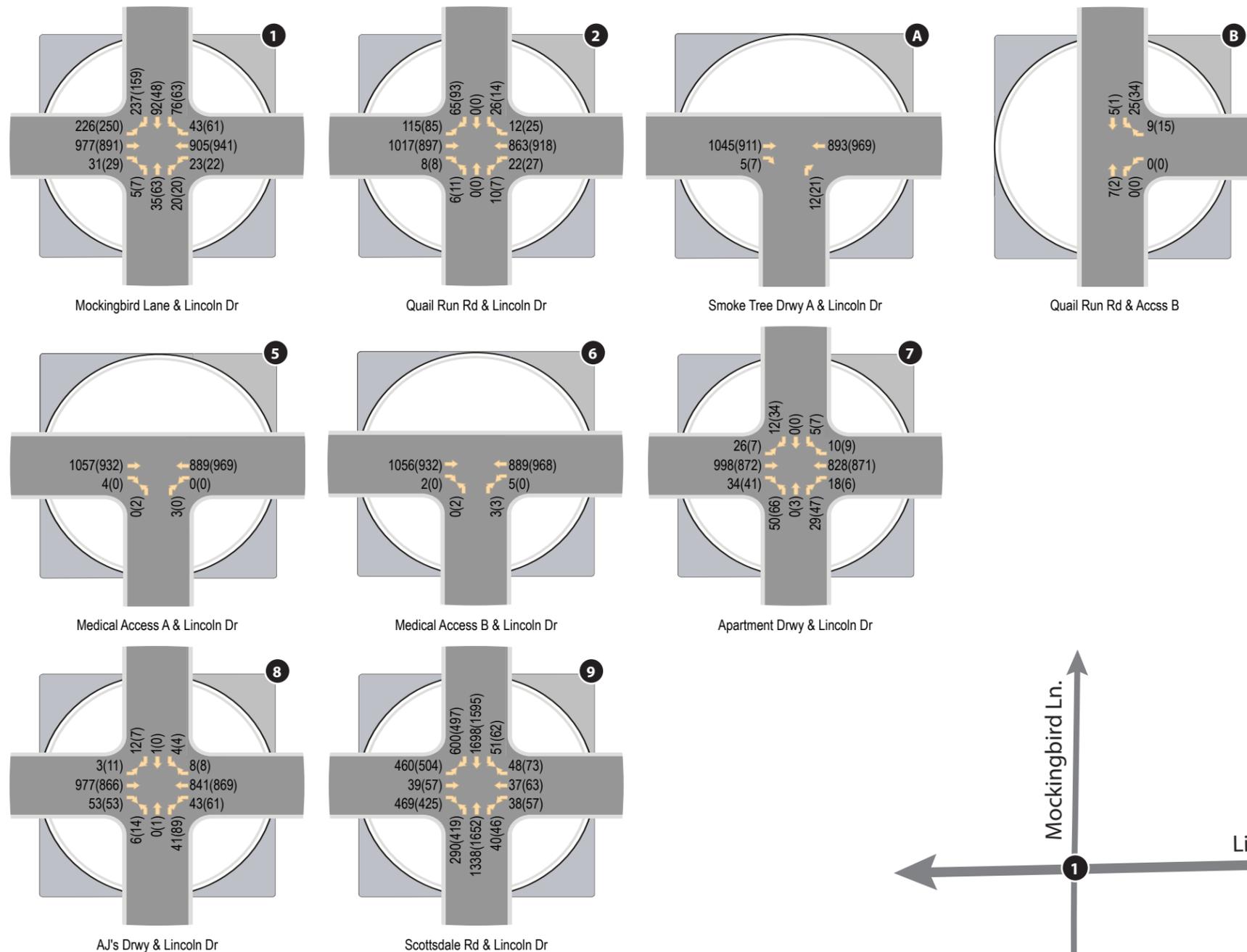
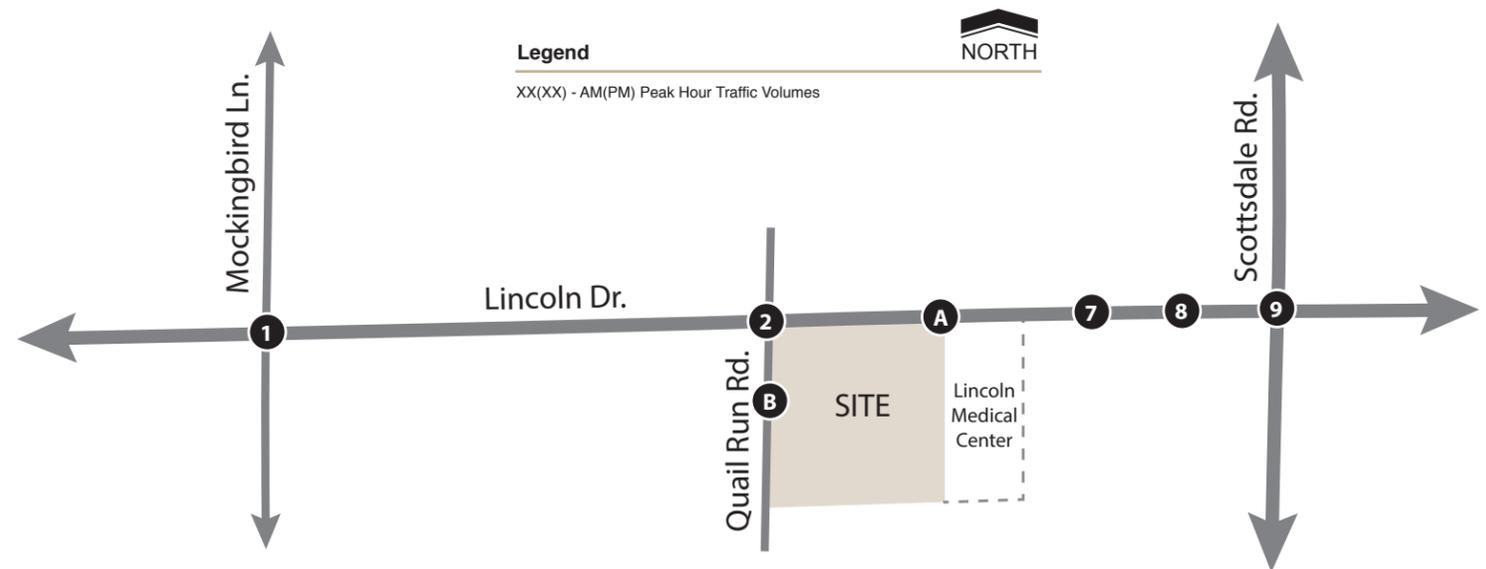
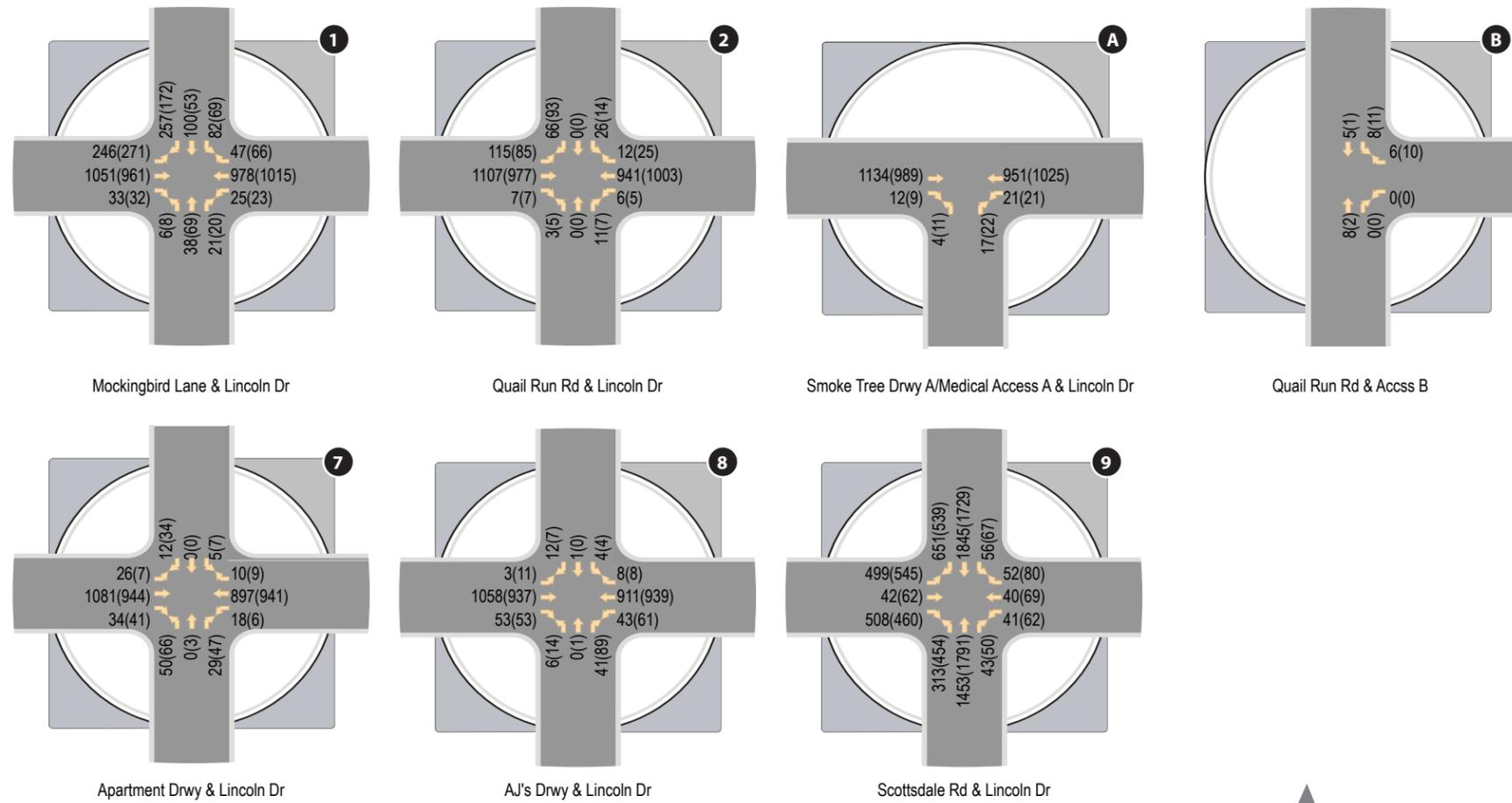


Figure 13: Scenario 2 - 2021 Total Traffic Volumes



**Figure 14:** Scenario I - 2026 Total Traffic Volumes

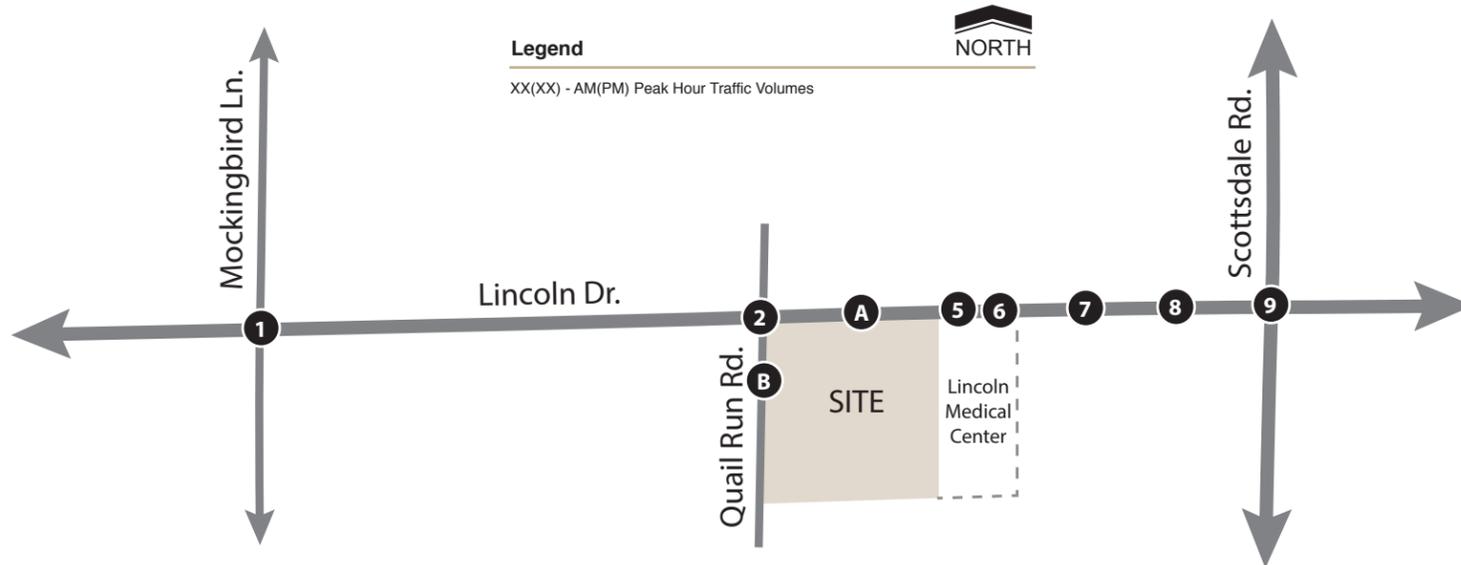
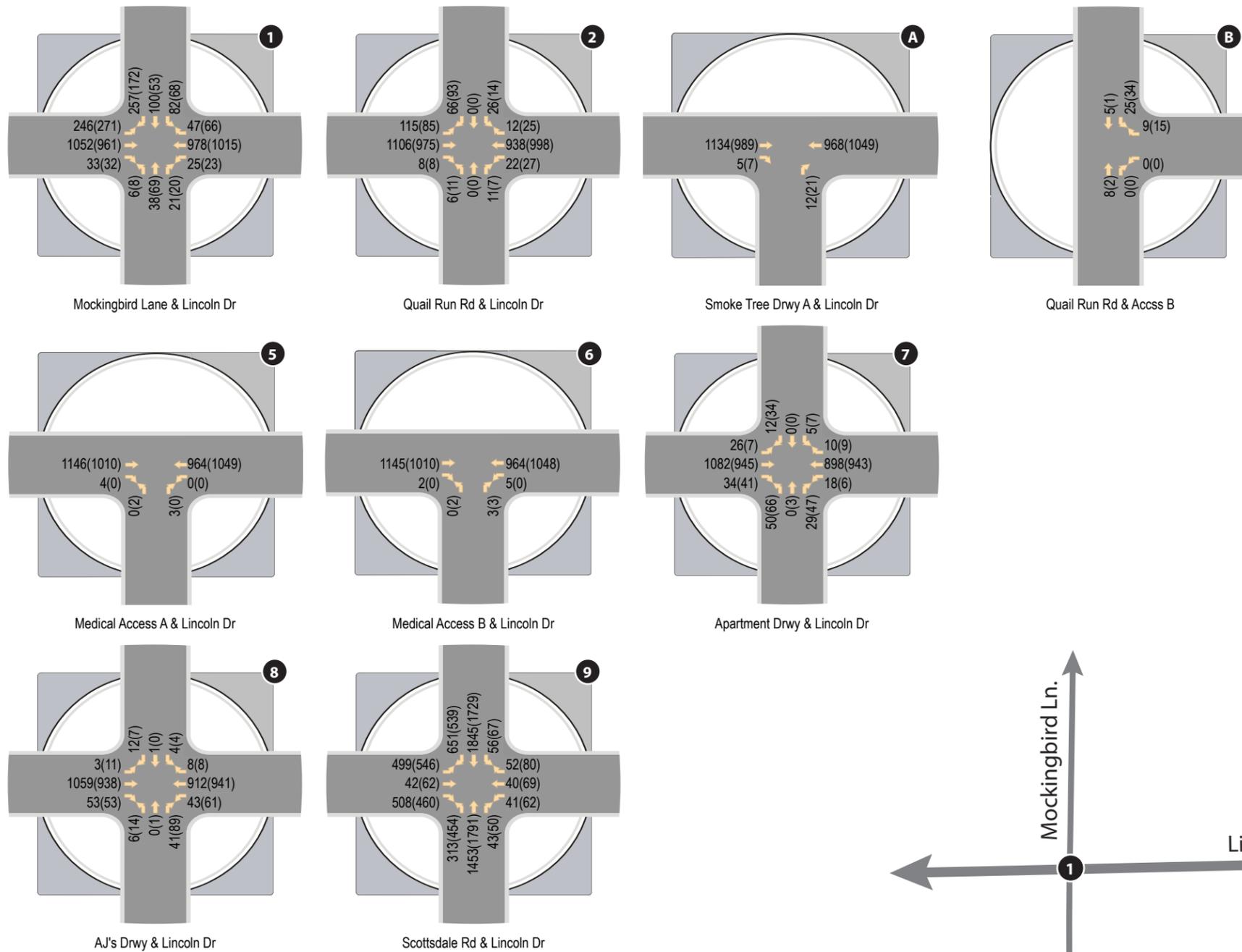


Figure 15: Scenario 2- 2026 Total Traffic Volumes

## TRAFFIC AND IMPROVEMENT ANALYSIS

### INTERSECTION CAPACITY ANALYSIS

Peak hour capacity analyses have been conducted for all of the intersections within the study area. All study area intersections were analyzed using Synchro 10.0 analysis software and the methodologies previously presented. Signalized intersections were analyzed with signal timing presented by the Town of Paradise Valley and the City of Scottsdale. According to the City of Scottsdale, the intersection of Scottsdale Road & Lincoln Drive will be restriped in the future to operate with dual left turn lanes and a shared through/right turn lane. It is unknown by what year these improvements will be made, so all analysis will be conducted using the existing lane configurations. The overall intersection and approach levels of service are summarized in **Table 6** for the 2021 opening year and **Table 7** for the 2026 horizon for both Scenario 1 and 2. Detailed analysis worksheets can be found in **Appendix G** for 2021 Scenario 1, **Appendix H** for 2021 Scenario 2, **Appendix I** for 2026 Scenario 1 and **Appendix J** for 2026 Scenario 2.

**Table 6 – 2021 Peak Hour Analysis**

ID	Intersection	Intersection Control	Approach/ Movement	2021 LOS AM(PM)					
				Scenario 1			Scenario 2		
				No-Build	Build	Mitigated	No-Build	Build	Mitigated
1	Mockingbird Ln & Lincoln Dr	Signal	NB	D(E)	D(E)	[Not Mitigated]	E(E)	E(E)	[Not Mitigated]
			SB	E(E)	E(E)		E(E)	E(E)	
			EB	B(A)	B(A)		A(A)	A(A)	
			WB	A(A)	A(A)		A(A)	A(A)	
			<b>Overall</b>	<b>B(B)</b>	<b>B(B)</b>		<b>B(B)</b>	<b>B(B)</b>	
2	Quail Run Rd & Lincoln Dr	Signal	NB	A(A)	B(A)	[Not Mitigated]	A(A)	B(A)	[Not Mitigated]
			SB	B(B)	B(B)		B(B)	B(B)	
			EB	A(A)	A(A)		A(A)	A(A)	
			WB	A(A)	A(A)		A(A)	A(A)	
			<b>Overall</b>	<b>A(A)</b>	<b>A(A)</b>		<b>A(A)</b>	<b>A(A)</b>	
5	Medical Drwy West & Lincoln Dr	1-way stop (NB)	NB Shared WB Left	N/A	N/A	N/A	B(C) A(A)	B(C) A(A)	[Not Mitigated]
6	Medical Drwy East & Lincoln Dr	1-way stop (NB)	NB Shared WB Left	N/A	N/A	N/A	B(B) A(A)	B(B) A(A)	[Not Mitigated]
7	Apartment Drwy & Lincoln Dr	2-way Stop (NB/SB)	NB Shared	C(C)	C(C)	[Not Mitigated]	C(C)	C(C)	[Not Mitigated]
			SB Left	C(C)	C(C)		C(C)	C(C)	
			SB Right	A(B)	B(B)		A(B)	B(B)	
			EB Left	A(A)	A(A)		A(A)	A(A)	
			WB Left	A(A)	A(A)		A(A)	A(A)	
8	AJ's Drwy & Lincoln Dr	2-way Stop (NB/SB)	NB Shared	B(B)	B(B)	[Not Mitigated]	B(B)	B(B)	[Not Mitigated]
			SB Left	C(C)	C(C)		C(C)	C(C)	
			SB Right	B(A)	B(B)		B(A)	B(B)	
			EB Left	A(A)	A(A)		A(A)	A(A)	
			WB Left	A(A)	A(A)		A(A)	A(A)	
9	Scottsdale Rd & Lincoln Dr	Signal	NB	C(C)	C(C)	C(D) D(D) D(D) E(E) E(E)	C(C)	C(C)	C(D) D(D) D(D) E(E) E(E)
			SB	D(D)	D(D)		D(D)	D(D)	
			EB	E(E)	E(E)		E(E)	E(E)	
			WB	E(E)	E(E)		E(E)	E(E)	
			<b>Overall</b>	<b>D(D)</b>	<b>D(D)</b>		<b>D(D)</b>	<b>D(D)</b>	
A	Access A & Lincoln Dr	1-way stop (WB)	NB Shared WB Left	B(B) A(A)	B(B) A(A)	[Not Mitigated]	A(A) (-)	B(B) (-)	[Not Mitigated]

**Table 6 – 2021 Peak Hour Analysis**

ID	Intersection	Intersection Control	Approach/Movement	2021 LOS AM(PM)					
				Scenario 1			Scenario 2		
				No-Build	Build	Mitigated	No-Build	Build	Mitigated
B	Quail Run Rd & Access B	1-way stop (NB)	SB Left WB Shared	A(A) A(A)	A(A) A(A)	[Not Mitigated]	A(A) A(A)	A(A) A(A)	[Not Mitigated]

Note: Scenario 1 Access A is shared access between Lincoln Medical Office and Smoke Tree Resort. Scenario 2 Access A is a right in/right out driveway exclusively for Smoke Tree Resort.

The results of the Scenario 1 and 2 2021 peak hour analysis summarized in **Table 6** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better) with the exception of Mockingbird Lane/Lincoln Drive and Scottsdale Road/Lincoln Drive.

The intersection of **Mockingbird Lane and Lincoln Drive** is expected to operate with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours for opening year 2021. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 11.0 seconds per vehicle and 1.3 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.

The intersection of **Scottsdale Road and Lincoln Drive** is expected to experience delay on the eastbound and westbound approaches during both the AM and PM peak hours of the opening year 2021. During the AM peak hour, it is recommended that the eastbound green time be extended from 30 seconds to 33 seconds and the westbound green time be extended from 13 seconds to 16 seconds. With these mitigation measures applied, it is expected that the eastbound delay would decrease from 56.8 seconds per vehicle to 53.9 seconds per vehicle and the westbound delay would decrease from 60.2 seconds per vehicle to 57.2 seconds per vehicle.

During the PM peak hour, it is recommended that the eastbound phase be increased from 30 seconds to 34 seconds and the westbound phase be increased from 13 seconds to 17 seconds. With these mitigation measures applied, it is anticipated that the eastbound delay will decrease from 59.4 seconds per vehicle to 54.2 seconds per vehicle and the westbound delay will decrease from 72.6 seconds per vehicle to 58.6 seconds per vehicle, which is almost an acceptable level of service.

The signal timing proposed for the 2021 mitigated scenario was applied to the 2026 horizon year.

**Table 7 – 2026 Peak Hour Analysis**

ID	Intersection	Intersection Control	Approach/Movement	2026 LOS AM(PM)					
				Scenario 1			Scenario 2		
				No-Build	Build	Mitigated	No-Build	Build	Mitigated
1	Mockingbird Ln & Lincoln Dr	Signal	NB	D(E)	D(E)	[Not Mitigated]	D(E)	D(E)	[Not Mitigated]
			SB	E(E)	E(E)		E(E)		
			EB	B(A)	B(A)		A(A)	A(A)	
			WB	A(A)	A(A)		A(A)	A(A)	
			<b>Overall</b>	<b>B(B)</b>	<b>B(B)</b>		<b>B(B)</b>	<b>B(B)</b>	
2	Quail Run Rd & Lincoln Dr	Signal	NB	B(A)	B(B)	[Not Mitigated]	B(B)	B(B)	[Not Mitigated]
			SB	B(B)	B(B)		B(B)	B(B)	
			EB	A(A)	A(A)		A(A)	A(A)	
			WB	A(A)	A(A)		A(A)	A(A)	
			<b>Overall</b>	<b>A(A)</b>	<b>A(A)</b>		<b>A(A)</b>	<b>A(A)</b>	
5	Medical Drwy West & Lincoln Dr	1-way stop (NB)	NB Shared WB Left	N/A	N/A	N/A	B(C) A(A)	B(C) A(A)	[Not Mitigated]
6	Medical Drwy East & Lincoln Dr	1-way stop (NB)	NB Shared/Right WB Left	N/A	N/A	N/A	B(B) A(A)	B(B) A(A)	[Not Mitigated]
7	Apartment Drwy & Lincoln Dr	2-way Stop (NB/SB)	NB Shared	C(C)	C(C)	[Not Mitigated]	C(C)	C(C)	[Not Mitigated]
			SB Left	C(C)	C(C)		C(C)	C(C)	
			SB Right	B(B)	B(B)		B(B)	B(B)	
			EB Left	A(A)	A(A)		A(A)	A(A)	
			WB Left	A(A)	A(A)		A(A)	A(A)	
8	AJ's Drwy & Lincoln Dr	2-way Stop (NB/SB)	NB Shared	B(B)	B(B)	[Not Mitigated]	B(B)	B(B)	[Not Mitigated]
			SB Left	C(C)	C(C)		C(C)	C(C)	
			SB Right	B(B)	B(B)		B(B)	B(B)	
			EB Left	A(A)	A(A)		A(A)	A(A)	
			WB Left	A(A)	A(A)		A(A)	A(A)	
9	Scottsdale Rd & Lincoln Dr	Signal	NB	C(D)	C(D)	[Not Mitigated]	C(D)	D(E)	[Not Mitigated]
			SB	E(D)	D(E)		D(D)	E(E)	
			EB	E(E)	E(D)		D(D)	E(E)	
			WB	E(F)	E(E)		D(E)	E(F)	
			<b>Overall</b>	<b>D(D)</b>	<b>D(E)</b>		<b>D(D)</b>	<b>D(E)</b>	
A	Access A & Lincoln Dr	1-way stop (WB)	NB Shared WB Left	B(B) A(A)	B(B) A(A)	[Not Mitigated]	A(A) -(-)	B(B) -(-)	[Not Mitigated]
B	Quail Run Rd & Access B	1-way stop (NB)	SB Left WB Shared	A(A) A(A)	A(A) A(A)	[Not Mitigated]	A(A) A(A)	A(A) A(A)	[Not Mitigated]

Note: Scenario 1 Access A is shared access between Lincoln Medical Office and Smoke Tree Resort.  
Scenario 2 Access A is a right in/right out driveway exclusively for Smoke Tree Resort.

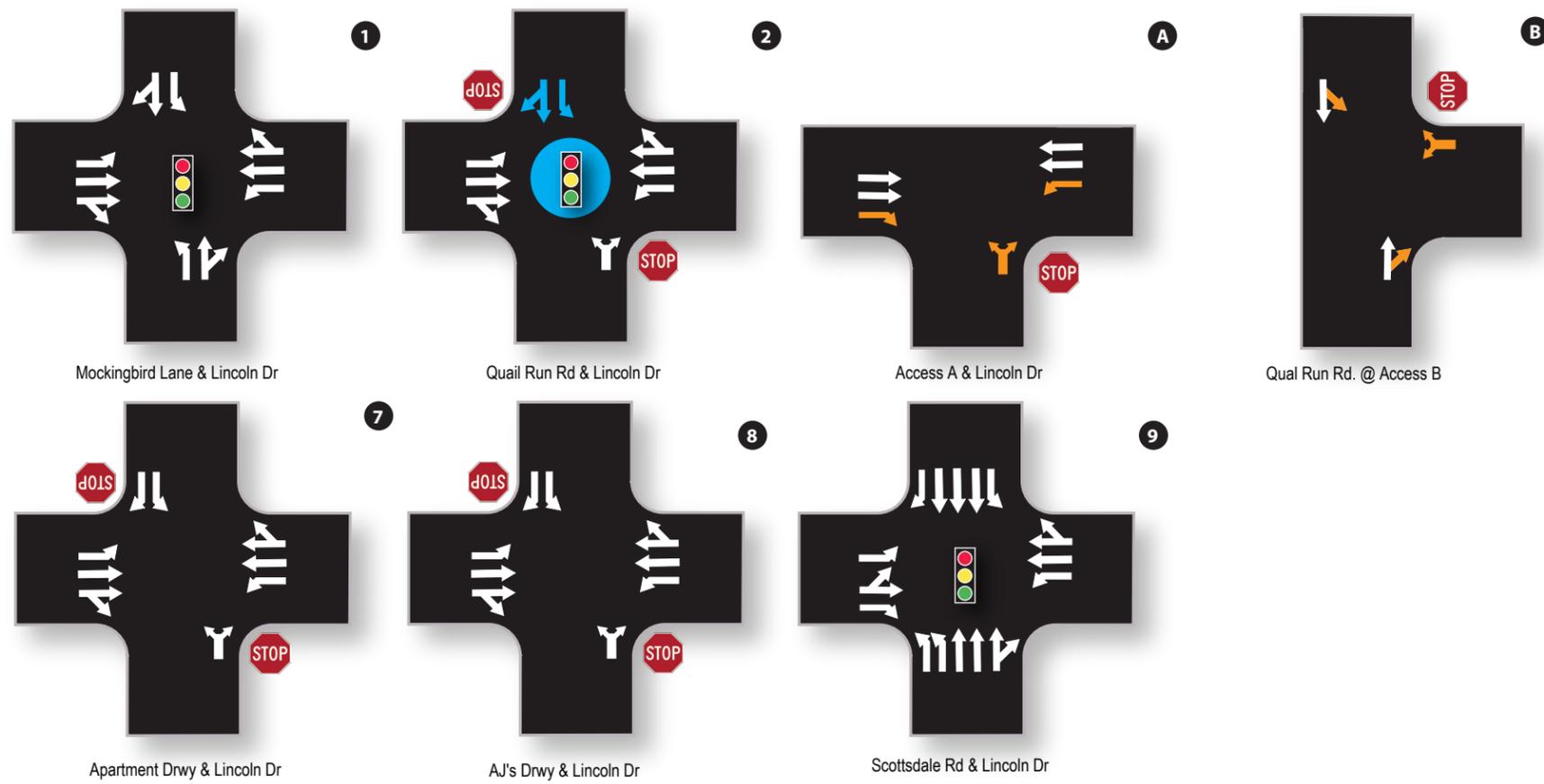
The results of the Scenario 1 and 2 2026 peak hour analysis summarized in **Table 7** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better) with the exception of Mockingbird Lane/Lincoln Drive and Scottsdale Road/Lincoln Drive.

The intersection of **Mockingbird Lane and Lincoln Drive** is expected to operate with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours for horizon year 2026. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the

cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 12.7 seconds per vehicle and 1.8 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.

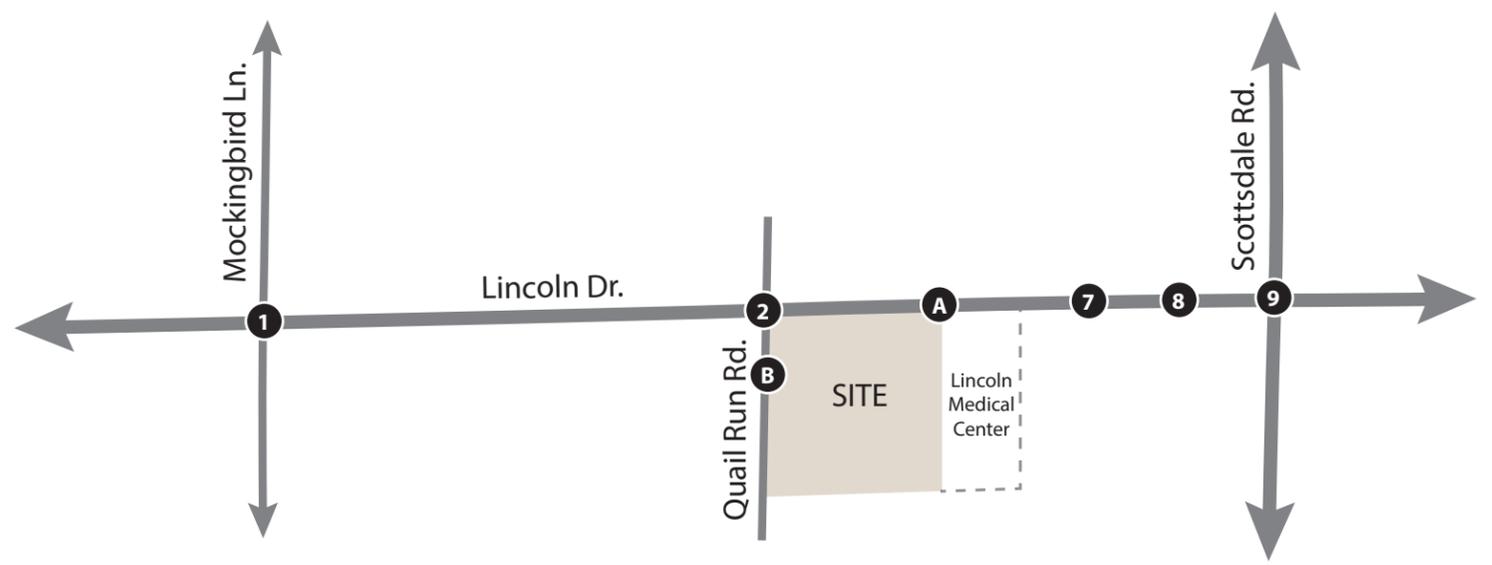
The intersection of **Scottsdale Road and Lincoln Drive** is expected to experience delay on the southbound, eastbound and westbound approaches during both the AM and PM peak hours of the horizon year 2026. During both the AM and PM peak hours, it is recommended that the eastbound and westbound phasing change from split to protected phasing. During the AM peak hour, this mitigation measure should reduce the eastbound delay from 55.7 seconds per vehicle to 51.0 seconds per vehicle and reduce the westbound delay from 57.4 seconds per vehicle to 54.7 seconds per vehicle. During the PM peak hour, this mitigation measure should reduce the southbound approach delay from 70.7 seconds per vehicle to 53.3 seconds per vehicle. The westbound approach delay is anticipated to remain the same, however, the delay on the westbound approach is anticipated to be 59.3 seconds per vehicle, which is very close to the threshold for an acceptable level of service, 55 seconds per vehicle.

The proposed lane configurations for Scenario 1 and Scenario 2 are presented in **Figure 16** and **Figure 17**, respectively.

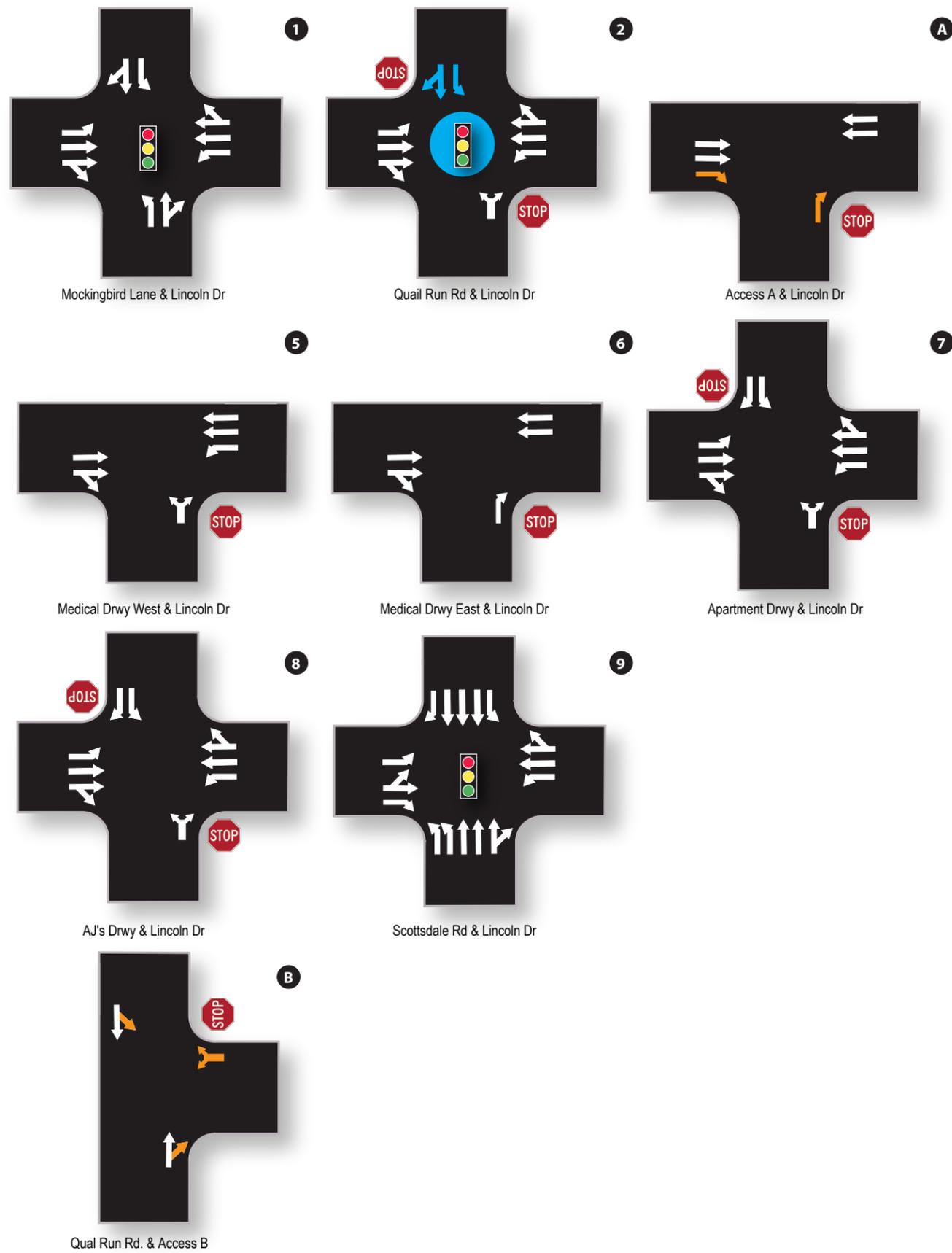


Thru or Turning Movement	NORTH
Traffic Signal	Stop Sign
Improvements by Ritz Carlton	
Improvements by Developer	

Note: See figure 2 for approximate driveway distances discussed within the Site Access Section of the TIA.



**Figure 16:** Scenario I - Proposed Lane Configurations and Traffic Controls

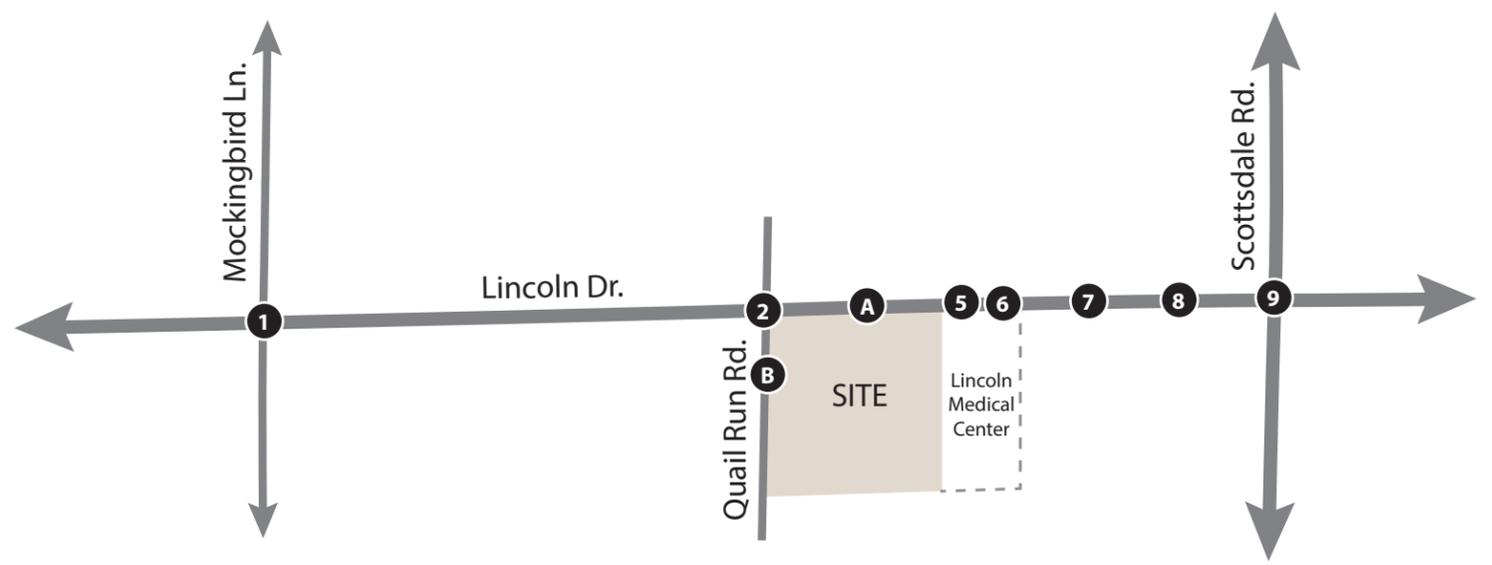


Thru or Turning Movement  
 Traffic Signal Stop Sign

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Improvements by Ritz Carlton  
 Improvements by Developer

Note: See figure 2 for approximate driveway distances discussed within the Site Access Section of the TIA.



**Figure 17:** Scenario 2 - Proposed Lane Configurations and Traffic Controls

## QUEUE LENGTH ANALYSIS

Adequate turn storage should be supplied on any approach where turn lanes are permitted and/or warranted. A queuing analysis was performed for all warranted/recommended and existing intersection turn lanes where site traffic is expected as well as left turn lanes adjacent to the site. According to the methodology documented in *A Policy on Geometric Design of Highways and Streets* (the AASHTO “Green Book”), the storage length for a turn lane is typically estimated as the length required to hold the average number of arriving vehicles per two minutes, where unsignalized, or per one-and-a half signal cycles, where signalized.<sup>1</sup> The formulas used for the calculations are shown below.

For signalized intersections, the storage length is determined by the following formula:

$$\text{Storage Length} = [2 \times (\text{veh/hr}) / (\text{cycles/hr})] \times 25 \text{ feet}$$

For unsignalized intersections, the storage length is determined by the following formula:

$$\text{Storage Length} = [2 \times (\text{veh/hr}) / (30 \text{ periods/hr})] \times 25 \text{ feet}$$

Using the traffic volumes and lane configurations projected for the 2026 horizon year, the resulting turn lane storage for turn movements affiliated with the site using AASHTO guidelines were calculated with a 130-second cycle length and are summarized in **Table 8**. Calculations for the queue storage length recommendations are provided in **Appendix K**.

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<sup>1</sup> The American Association of Highway and Transportation Officials on pages 714-715 of its publication, *Geometric Design of Highways and Streets* (“AASHTO Green Book”), indicates that storage length for a turn lane, exclusive of taper, “should usually be based on one and one-half to two times the average number of vehicles that would store per cycle” at a signalized intersection.

Table 8 – Queue Storage Lengths

ID	Intersection	Scenario	Intersection Control	Movement	Queue Storage			
					Existing <sup>(1)</sup>	AASHTO	95 <sup>th</sup> Percentile	Recommended
1	Mockingbird Lane & Lincoln Dr	<sup>(6)</sup> S1 & S2	Signalized	NB Left	85'	25'	25'	85'
				SB Left	130'	150'	100'	130'
				EB Left	145'	500'	215'	<sup>(4)</sup> 145'
				WB Left	100'	50'	45'	100'
2	Quail Run Rd & Lincoln Dr	S1	Signalized	EB Left	-	225'	170'	<sup>(5)</sup> 150'
				WB Left	-	25'	25'	150'
		S2		EB Left	-	225'	170'	<sup>(5)</sup> 150'
				WB Left	-	50'	25'	150'
9	Scottsdale Rd & Lincoln Dr	<sup>(6)</sup> S1 & S2	Signalized	NB Left	<sup>(2)</sup> 550'	<sup>(2)</sup> 825'	<sup>(2)</sup> 360'	<sup>(2)</sup> 550'
				SB Left	185'	125'	145'	185'
				EB Left	175'	1,000'	450'	<sup>(4)</sup> 175'
				WB Left	90'	100'	110'	110'
				SB Right	315'	1,200'	360'	320'
				EB Right	175'	925'	615'	<sup>(4)</sup> 175'
A	Access A & Lincoln Drive	S1	1-way stop (NB)	WB Left	-	25'	25'	50'
				EB Right	-	25'	25'	100'
		S2		EB Right	-	25'	25'	100'

(1) Measured from stop bar to end of storage length

(2) Dual left turn lanes. Queue storage includes total storage length of both lanes

(3) Max storage length recommended for signalized intersection

(4) Extending this turn will interfere with left turns into AJ's Fine Foods driveway

(5) Not the responsibility of the developer

(6) The volumes are the same in both scenarios at this intersection.

According to the CivTech study done for the Ritz Carlton, the newly signalized intersection of Quail Run Road and Lincoln Drive will have eastbound/westbound left turn lanes and a westbound right turn lane striped with 150 feet of storage each. The recommended storage lengths in **Table 8** are provided for horizon year 2026 using the total traffic projections.

The westbound left turn lane proposed for Scenario 1 at Smoke Tree Access A on Lincoln Drive has previously been discussed the Town of Paradise Valley as well as their reviewing consultant. It was decided that a maximum of 50 feet with a 60 foot taper could be provided without interference with existing turn lanes or surrounding development traffic. Scenario 2 will consist of a single right in/right out driveway and will not require a westbound left turn lane.

For scenario 1, Smoke Tree Resort is requesting full access. Scenario 2 will consist of a single access to Smoke Tree with right in/right out access only. With the exception of the westbound left turn at the Smoke Tree driveway on Lincoln Drive, both scenarios require the same amount of queue storage. The Town of Paradise Valley has stated that an eastbound right turn deceleration lane is required at the Smoke Tree driveway, whether it is shared with the Lincoln Medical Center or not. Using AASHTO methodology only 25 feet of storage is required, however, 50 feet is the minimum that should be recommended per AASHTO standards with a 90 foot taper. After discussions

with the Town staff, it was decided that a storage length of 100 feet will be provided for the right turn deceleration lane, however, if interference with other turn lanes is expected with the 100 foot storage length, 75 feet would be an acceptable storage length.

### **SIGHT DISTANCE ANALYSIS**

Adequate sight distance must be provided at intersections and site access driveways to allow safe turning movements. There must be sufficient unobstructed sight distance along both approaches of a street/driveway intersection and across their included corners to allow operators of vehicles to see each other in time to prevent a collision.

The Town of Paradise Valley maintains sight distance requirements within their Town Code, standard details and development services guidelines. The Town of Paradise Valley measures sight distance using AASHTO methodology except that the sight triangle from the driveway is measured from the center of the egress lane, 14.5 feet back from the curb return line. Sight distance calculations according to AASHTO guidelines are summarized in **Table 9**.

**Table 9 – AASHTO Sight Distance Requirements**

Roadway	Posted Speed Limit (mph)	Design Speed (mph)	Sight Distance Along Roadway		
			Left of Driveway (Case B2/B3)	Right of Driveway (Case B1)	On Major Road (Case F)
<b>Scenario 1</b>					
Access A & Lincoln Dr	40	45	400'	465'	335'
Quail Run Rd & Access B	-	30	265'	310'	225'
<b>Scenario 2</b>					
Access A & Lincoln Dr	40	45	400'	-	-
Quail Run Rd & Access B	-	30	265'	310'	225'

There are no existing obstructions to sight distance within the project intersection or along the included corners of the proposed intersection. Adequate site distance must be provided at the intersections to allow safe left and right turning movements from the development. Recommended distances for these movements can be found in the table above.

The developer should ensure that sight visibility is provided at all proposed intersections according to the distances shown in **Table 9** and that sight triangles at public intersections are maintained according to the Town Code. All vegetation and trees should be maintained according to Town of Paradise Valley regulations. Sight distance worksheets have been included within **Appendix L**.

## CONCLUSIONS

The following conclusions have been documented in this study.

### General

- The proposed development is anticipated to generate approximately 754 external weekday daily trips, with 51 external trips occurring in the AM peak hour and 77 external trips occurring in the PM peak hour.

### Existing Conditions

- The results of the existing conditions analysis indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better). The following intersections include one or more approaches which currently operate with poor levels of service.
  - The intersection of **Mockingbird Lane and Lincoln Drive** currently operates with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 6.1 seconds per vehicle and 10.5 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.
  - The intersection of **Scottsdale Road and Lincoln Drive** currently experiences delay on the eastbound and westbound approaches during both the AM and PM peak hours. During the AM peak hour, it is recommended that the eastbound green time be extended from 30 seconds to 33 seconds and the westbound green time be extended from 13 seconds to 17 seconds. This mitigation measure is anticipated to decrease the eastbound delay from 56.3 seconds per vehicle to 53.9 seconds per vehicle. The westbound approach remains unchanged, in order to mitigate this delay, the initial green time could be changed to allow for more vehicles to pass through the intersection without the light changing from green to yellow.

- During the PM peak hour, it is recommended that the eastbound phase be extended from 30 seconds to 33 seconds and the westbound phase be increased from 13 seconds to 21 seconds. With these mitigation measures applied, it is expected that the eastbound delay will decrease from 57.3 seconds per vehicle to 54.2 seconds per vehicle and the westbound delay will decrease from 70.1 seconds per vehicle to 63.0 seconds per vehicle.

### Opening Year 2021

- The results of the Scenario 1 and 2 2021 peak hour analysis summarized in **Table 6** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better) with the exception of Mockingbird Lane/Lincoln Drive and Scottsdale Road/Lincoln Drive.
  - The intersection of **Mockingbird Lane and Lincoln Drive** is expected to operate with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours for opening year 2021. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 11.0 seconds per vehicle and 1.3 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.
  - The intersection of **Scottsdale Road and Lincoln Drive** is expected to experience delay on the eastbound and westbound approaches during both the AM and PM peak hours of the opening year 2021. During the AM peak hour, it is recommended that the eastbound green time be extended from 30 seconds to 33 seconds and the westbound green time be extended from 13 seconds to 16 seconds. With these mitigation measures applied, it is expected that the eastbound delay would decrease from 56.8 seconds per vehicle to 53.9 seconds per vehicle and the westbound delay would decrease from 60.2 seconds per vehicle to 57.2 seconds per vehicle.
    - During the PM peak hour, it is recommended that the eastbound phase be increased from 30 seconds to 34 seconds and the westbound phase be increased from 13 seconds to 17 seconds.

With these mitigation measures applied, it is anticipated that the eastbound delay will decrease from 59.4 seconds per vehicle to 54.2 seconds per vehicle and the westbound delay will decrease from 72.6 seconds per vehicle to 58.6 seconds per vehicle, which is almost an acceptable level of service.

### Horizon year 2026

- The results of the Scenario 1 and 2 2026 peak hour analysis summarized in **Table 7** indicates that all intersections currently operate at an overall acceptable level of service (LOS D or better) with the exception of Mockingbird Lane/Lincoln Drive and Scottsdale Road/Lincoln Drive.
  - The intersection of **Mockingbird Lane and Lincoln Drive** is expected to operate with poor levels of service on the northbound and southbound approaches during both the AM and PM peak hours for horizon year 2026. Due to the actuated coordinated nature of this signal, if a vehicle does not approach the northbound or southbound approach of the intersection, this phase will be skipped and the green time will be added to the eastbound and westbound green times. The northbound and southbound approaches of this intersection experience minimal traffic volumes during both the AM and PM peak hours, meaning that when they do approach the intersection, they must wait until the cycle starts again in order to pass through the intersection. If more vehicles utilize the intersection, this delay should decrease because the northbound and southbound green times will be utilized during more cycles throughout the peak hours. This will increase the delay on the eastbound and westbound approaches, however, these approaches are currently operating with maximum delays of 12.7 seconds per vehicle and 1.8 seconds per vehicle respectively, so increasing these delays will not adversely impact levels of service.
  - The intersection of **Scottsdale Road and Lincoln Drive** is expected to experience delay on the southbound, eastbound and westbound approaches during both the AM and PM peak hours of the horizon year 2026. During both the AM and PM peak hours, it is recommended that the eastbound and westbound phasing change from split to protected phasing. During the AM peak hour, this mitigation measure should reduce the eastbound delay from 55.7 seconds per vehicle to 51.0 seconds per vehicle and reduce the westbound delay from 57.4 seconds per vehicle to 54.7 seconds per vehicle. During the PM peak hour, this mitigation measure should reduce the southbound approach delay from 70.7 seconds per vehicle to 53.3 seconds per vehicle. The westbound approach delay is anticipated to remain the same, however, the delay on the westbound approach is anticipated to be 59.3 seconds per vehicle, which is very close to the threshold for an acceptable level of service, 55 seconds per vehicle.

### Queue Storage and Sight Distance

- According to the CivTech study done for the Ritz Carlton, the newly signalized intersection of Quail Run Road and Lincoln Drive will have eastbound/westbound left turn lanes and a westbound right turn lane striped with 150 feet of storage each. While 150 feet is being proposed due to the current development agreement with Five Star Development for the Ritz Carlton, less is required to meet the recommended AASHTO length. The recommended storage lengths are provided for horizon year 2026 using the total traffic projections.
  - The westbound left turn lane proposed for Scenario 1 at Smoke Tree Access A on Lincoln Drive has previously been discussed the Town of Paradise Valley as well as their reviewing consultant. It was decided that a maximum of 50 feet with a 60 foot taper could be provided without interference with existing turn lanes or surrounding development traffic. Scenario 2 will consist of a single right in/right out driveway and will not require a westbound left turn lane.
  - For scenario 1, Smoke Tree Resort is requesting full access. Scenario 2 will consist of a single access to Smoke Tree with right in/right out access only. With the exception of the westbound left turn at the Smoke Tree driveway on Lincoln Drive, both scenarios require the same amount of queue storage. The Town of Paradise Valley has stated that an eastbound right turn deceleration lane is required at the Smoke Tree driveway, whether it is shared with the Lincoln Medical Center or not. Using AASHTO methodology only 25 feet of storage is required, however, 50 feet is the minimum that should be recommended per AASHTO standards with a 90 foot taper. After discussions with the Town staff, it was decided that a storage length of 100 feet will be provided for the right turn deceleration lane, however, if interference with other turn lanes is expected with the 100 foot storage length, 75 feet would be an acceptable storage length.
- There are no existing obstructions to sight distance within the project intersections or along the included corners of the proposed intersection. Adequate site distance must be provided at the intersections to allow safe left and right turning movements from the development
  - The developer should ensure that sight visibility is provided at all proposed intersections according to the distances and that sight triangles at public intersections are maintained according to the Town Code. All vegetation and trees should be maintained according to Town of Paradise Valley regulations.

## LIST OF REFERENCES

*Highway Capacity Manual*. Transportation Research Board, Washington, D.C., 2000.

*Manual on Uniform Traffic Control Devices*. U.S. Department of Transportation, Federal Highways Administration, Washington, D.C., 2009.

*Roadway Design Manual*, Maricopa County Department of Transportation, Phoenix, Arizona, Revised April 2004.

*Trip Generation Manual, 10<sup>th</sup> Edition*, Institute of Transportation Engineers, Washington, D.C., 2016.

*Trip Generation Handbook, 3<sup>rd</sup> Edition*, Institute of Transportation Engineers, Washington, D.C., 2016.

Ritz Carlton Master Plan, Paradise Valley Traffic Impact Analysis (TIA), CivTech, Scottsdale, AZ, March 2016.

Lincoln Medical Center, Paradise Valley Traffic Impact Analysis (TIA), CivTech, Scottsdale, AZ, November 2018.

## **TECHNICAL APPENDIX**

<b>APPENDIX A:</b>	<b>REVIEW COMMENTS AND RESPONSES</b>
<b>APPENDIX B:</b>	<b>EXISTING TRAFFIC COUNTS</b>
<b>APPENDIX C:</b>	<b>EXISTING PEAK HOUR ANALYSIS</b>
<b>APPENDIX D:</b>	<b>TRIP GENERATION</b>
<b>APPENDIX E:</b>	<b>TRIP DISTRIBUTION</b>
<b>APPENDIX F:</b>	<b>BACKGROUND TRAFFIC</b>
<b>APPENDIX G:</b>	<b>2021 PEAK HOUR ANALYSIS SCENARIO 1</b>
<b>APPENDIX H:</b>	<b>2021 PEAK HOUR ANALYSIS SCENARIO 2</b>
<b>APPENDIX I:</b>	<b>2026 PEAK HOUR ANALYSIS SCENARIO 1</b>
<b>APPENDIX J:</b>	<b>2026 PEAK HOUR ANALYSIS SCENARIO 2</b>
<b>APPENDIX K:</b>	<b>QUEUE STORAGE ANALYSIS</b>
<b>APPENDIX L:</b>	<b>SIGHT DISTANCE ANALYSIS</b>

## **APPENDIX A**

### **REVIEW COMMENTS AND RESPONSES**

**Smoke Tree Resort  
5th Submittal**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Paul Mood, Town of Paradise Valley**

Item	Review Comment	(Code) & Response
a.	Provide written responses to Kimley Horn comments dated February 7, 2020.	(3) CivTech has resolved all Kimley Horn comments at this time.
b.	Confirm square footage assumptions for resort uses with developer. These square footage quantities should be consistent throughout all SUP documents.	(2) Square footage has been confirmed with the developer
c.	The shared access at the Resort's eastern property line with the Lincoln Medical Center will require an approved shared access agreement by the two property owners prior to SUP approval.	(3) The shared access between Lincoln Medical Center and Smoke Tree Resort has been approved at this time.
d.	Executive Summary: In the first paragraph confirm the restaurant square footage and update as required.	(2) Restaurant square footage has been confirmed with the developer. Text has been added to the report to distinguish between gross and net square footage.
e.	Executive Summary: In the second paragraph scenario two analyzes the Resort with its own exclusive full access entrance (left-in/left-out) along Lincoln Drive. This may not be possible if a full access entrance (left-in/left-out) is approved for the Lincoln Medical Center.	(3) CivTech is aware that if Smoke Tree Resort had its own exclusive access it would not be a full movement access. However, at this time the shared access between Lincoln Medical Center and Smoke Tree Resort has been approved, meaning that this second scenario is no longer applicable.
f.	Page 2, paragraph: The report recommends changes to the signal timing at Scottsdale Road and Lincoln Drive. Since this intersection is controlled by the City of Scottsdale please provide documentation that they are agreeable to the recommended changes.	(1) CivTech will share the recommendations to signal timing changes with the City of Scottsdale upon completion of the TIA with the February 2020 report comments from the Town of Paradise Valley incorporated.
g.	The traffic impact analysis assumes an opening year of 2020. This does not appear to be realistic and should be updated. Any traffic projections should be updated as required also.	(1) Opening year has been updated to 2021 and horizon year has been updated to 2026.
h.	Page 4, Queue storage and Sight distance: The westbound turn lane to Access A on Lincoln Drive has a 60' taper and a 50' storage line per previous discussions with the Town council. Please revise accordingly.	(1) The queue storage length recommendation has been updated to recommend a 50 foot turn lane and a 60 foot taper.



**Smoke Tree Resort  
5th Submittal**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Paul Mood, Town of Paradise Valley**

Item	Review Comment	(Code) & Response
i.	Page 5: Replace the word "contractor" with "developer"	(1) Text has been updated accordingly.
j.	Page 6, Horizon Years: It is assumed that the developer will open in October of 2020. Please revise accordingly.	(1) Opening year has been updated to 2021 and horizon year has been updated to 2026.
k.	Vicinity Map: Label Palmeraie Blvd.	(1) Palmeraie Boulevard has been labeled on the vicinity map.
l.	Page 15: The report recommends changes to the signal timing at Scottsdale Road and Lincoln Drive. Since this intersection is controlled by the City of Scottsdale, please provide documentation that they are agreeable to the recommended changes.	(1) CivTech will share the recommendations to signal timing changes with the City of Scottsdale upon completion of the TIA with the February 2020 report comments from the Town of Paradise Valley incorporated.
m.	Page 17, Site Access, Scenario 1, Access A: The shared access at the Resort's eastern property line with Lincoln Medical Center will require and approved shared access agreement by the two property owners prior to SUP approval.	(3) The shared access between Lincoln Medical Center and Smoke Tree Resort has been approved at this time.
n.	Page 17, Site Access, Scenario 2, Access B: this section states that the intersection of Quail Run Road and Lincoln Drive will be signalized by buildout year 2020. The Town's Lincoln Drive improvement project should be completed by the summer of 2021. Update buildout year of 2020 as needed.	(1) Buildout year has been updated to 2021. Reference to the Quail Run Road and Lincoln Drive signal has been updated to indicate the signal will be operation by 2021, the new buildout year of the site.
o.	Page 20, paragraph 3: confirm square foot assumptions for resort use with the developer. These square foot quantities should be consistent throughout all SUP documents.	(2) Square footage has been confirmed with the developer. Text has been added to distinguish between gross and net square footage.
p.	Page 21, Trip Generation summary, Table 3: Event space and meeting areas were omitted. Provide clarification or include as needed.	(2) Event space and meeting areas are included in the land use for a standard hotel, but they are not included in the land use for a resort hotel. The proposed Smoke Tree resort uses a blended rate between the two; the event space and meeting area is not likely to impact the trips generated during the peak hour and since it is included in the rates for a standard hotel, including it again separately would double count the anticipated trips.
q.	Page 25, Table 5, Growth Rate Expansion factor: update horizon year 2020 and 2025 as need to align with realistic construction completion and resort opening.	(1) Opening year has been updated to 2021 and horizon year has been updated to 2026. Growth rates have been updated accordingly.



**Smoke Tree Resort  
5th Submittal**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Paul Mood, Town of Paradise Valley**

Item	Review Comment	(Code) & Response
r.	Page 37, paragraph 1: Is the 300' dedicated right turn lane from southbound Mockingbird Lane to westbound Lincoln drive included in the 2025 intersection level of service analysis?	(1) The southbound right turn lane from Mockingbird Lane to Lincoln Drive has now been included in the 2025 background and total analysis.
s.	Page 42, Sight distance analysis: Change the word "city" to "town".	(1) Text has been updated accordingly.
t.	Page 42, Table 9: changed posted speed limits from 35 mph to 40 mph. Update sight distance data as needed.	(1) The speed limit has been changed from 35 mph to 40 mph for the sight distance calculations. The table has been updated accordingly.
u.	Page 42, Last paragraph: change the word "contractor" to "developer".	(1) Text has been updated accordingly.
v.	Page 46, Bullet #1: Revise left turn lane to 50' storage and 60' taper (see "h" above). In bullet #4 change the word "contractor" to "developer".	(1) The queue storage length recommendation has been updated to recommend a 50 foot turn lane and a 60 foot taper. Also, the text has been changed from "contractor" to "developer".



**Smoke Tree Resort  
4th Submittal**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Kim Carroll, Kimley Horn on behalf of Town of Paradise Valley**

Item	Review Comment	(Code) & Response
2.	<p><b>Page 18, Site Access - provide spacing of access points from the adjacent signalized itnersesections and driveways for each scenario</b></p> <p>Although comment responses in Appendix A indicate that this comment has been addressed, we are of the opinion that it has not been fully addressed. The updated traffic report indicates that the site access locations are unknown. See Scenario 1 and Scenario 2 response on the following page. There are minimum spacing requirements for the driveways, which is 250 feet. The spacing is also subject to the geometry turn lane (queue length storage and taper) requirements.</p>	<p>(2) After discussion with Geneva Holdings, CivTech was informed that they had met with Paul Mood at the Town of Paradise Valley and come to an agreement on the access configuration. A shared access with Lincoln Medical Center, directly to the east, will be constructed along with the redevelopment of the Smoke Tree Resort. CivTech and the Town acknowledge that the shared access do not explicitly meet the guidelines mentioned by Kimley Horn, however it does meet the restricted requirements put forth by Paul Mood.</p> <p>Both Scenario 1 and Scenario 2 are presented in the analysis since the shared access agreement has not been approved at the time of this submittal, however, Scenario 1 (shared access scenario) is likely the scenario that will be decided upon.</p>
5.	<p><b>Trip Generation, Page 20 - the proposed development description discusses a market. The layout of the market on the site plan and location should be calculated out separately (like the restaurant) as it will attract non-resort trips.</b></p> <p>Comment responses in Appendix A indicate the market will not generate off-site trips. Kimley Horn does not agree with this response. The overall orientation and location of the market (detached from hotel/registration area, access location and faces Lincoln Drive) indicates this specialty market will generate its own trips and expect this should be treated separately from the hotel.</p>	<p>(1) Information provided by the client indicates that the main purpose of the market is to provide services to the guests of the resort. The market will be more of a small shop to purchase items the patron may have forgotten, or quick packaged snacks. It will not be restricted to guest use only, however, and it is anticipated that very few external vehicles will be utilizing this market. A line in the trip generation was added showing the market and coffee shop as a retail land use with a 65% internal capture rate to account for the majority of visitors to the market being hotel guests. Scenario 1 and Scenario 2 site volumes have been updated accordingly.</p>
7.	<p><b>Review of the Synchro HCS output shows a multi-stage maneuver for the northbound traffic exiting the Smoke Tree Access points in either scenario. The median is not wide enough to allow for a two-stage maneuver. We recommend the Synchro HCS output to be revised for a single maneuver.</b></p> <p>Comment responses in Appendix A indicates that two stage maneuvers were only modeled for AJ Driveway. See clip below from the Synchro output for Scenario 1 Driveway from SmokeTree onto Lincoln. This comment has not been addressed.</p>	<p>(2) Extensive research was done to verify the one-stage left turn analysis for the Smoke Tree access point on Lincoln Drive. Per the Synchro user guide page 15-30 (included in Appendix A) if the "Vehicles in median storage" line in Synchro is set to "0" then the left turn will not be modeled as a two-stage left. The values highlighted by Kimley Horn regarding the two-stage left turn factors are what the factors would be if a two-stage left was used for analysis. Hand calculations were completed in order to verify that the 1-stage left turn factors, shown just above each of the highlighted lines, were used to determine the level of service for the northbound left turning movements at the driveway.</p>



**Smoke Tree Resort  
March 1, 2019 Review**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Kim Carroll, Kimley Horn/Town of Paradise Valley**

Item	Review Comment	(Code) & Response
1.	<b>As a general note, the Town should be aware that the TIA does not account for shared access between Smoke Tree Resort and Lincoln Medical</b>	(3) In the latest version of the TIA, two scenarios are considered. One with shared access with Lincoln Medical and the other with exclusive Smoke Tree access
2.	<b>As an observation, the land use data has reduced from 150 rooms, 30 units and 3500 square foot restaurante to 135 rooms, 30 units and 3500 square foot restaurant</b>	(3) The unit count has changed since the last submittal, this comment should be disregarded
3.	<b>Page 14, full access (B) and Figure 4 is being referenced as 80 feet from property line. The location is being reviewed with final resolution pending.</b>	(3) The reference to the location of the full access has been removed. If shared access is granted, the access will be very close to the property line, if not, then exclusive access will be somewehre along the Smoke Tree frontage.
4.	<b>Figure 6 (Site Generated Traffic) shows 1 vehicle entering/exiting via Quail Run Road. Two access points are proposed (A and C). Wondering why there is so little to no volume using Quail Run Road considering Quail Run Road is signalized and ther are two points of Access with parking fronting Qauil Run</b>	(3) More traffic has been added to Quail Run, as it will now be the main access to Smoke Tree Resort. Additionally, only one access will be provided on Quail Run Road.
5.	<b>General comment no action required. Volumes for full access Smoke Tree resort entrance has slightly increased from the original volumes received. See clip for comparison and results in little difference</b>	



**Smoke Tree Resort  
2ns Submittal**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Paul Mood, Town of Paradise Valley**

Item	Review Comment	(Code) & Response
1.	Applicant shall assume staff's recommendation for access onto Lincoln Drive which includes 65 feet of right-of-way, eliminated both existing driveways and adds a right turn deceleration lane and shared use driveway with the Lincoln Medical Plaza approximately 80 feet west of the eastern property line. The TIA should be updated accordingly	(1) The analysis and report text have been updated to reflect the change in access from the two existing driveways on Lincoln Drive to a single, full movement, shared driveway with Lincoln Medical Center. However, Lincoln Medical site traffic was not added to this shared driveway, but instead kept at their two existing driveways, per the instruction of the Town of Paradise Valley.
2.	A cross access easement with the Lincoln Medical Plaza shall be required	(2) Cross access may be included in the site design, but for the purpose of this study, Lincoln Medical site generated traffic was not assumed to be using the shared access, but instead kept their two original driveways.
3.	Update existing speed limit on Lincoln Drive from 35 mph to 40 mph in existing conditions and sight distance analysis sections	(1) Speed limit for Lincoln Drive has been updated from 35 mph to 40 mph



**Smoke Tree Access Exhibits  
November 1, 2018 Review**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Kim Carroll, Kimley Horn/Town of Paradise Valley**

Item	Review Comment	(Code) & Response
1.	<b>While the day collected falls on a typical weekday, the data was collected at a time of the year when volumes drop around the Maricopa Region because school is no longer in session and winter residents have left the region. For this reason, we recommend that existing traffic volumes be seasonally adjusted and traffic analysis be revised based on these adjustments and comments that follow.</b>	(1) A seasonal adjustment factor was utilized in order to provide a more typical pattern of traffic. The City of Scottsdale recommends a seasonal adjustment factor of 1.03 for traffic counts that have been collected during the month of May. This adjustment factor was utilized for all existing traffic counts
2.	<b>Through coordination with TOPV staff we understand the Smoke Tree Resort is proposed to develop 150 rooms and 30 apartments. The trip generation analysis conducted was based on 130 rooms and 20 apartments. We recommend the trip generation be updated to match the proposed development improvements.</b>	(3) The number of units provided by the Smoke Tree Resort has changed to 121 rental units with a 3,500 SF restaurant. This is reflected in the updated TIA.
3.	<b>Smoke Tree Resort analysis was based on ITE Land Use Code (LUC) 330. The number of rooms proposed for development seem low and inconsistent for a resort hotel. The number of data points and size of the independent variable more closely align with the Hotel LUC 310, which has higher trip generation rate than resort hotel. Please provide additional support that would classify Smoke Tree as a resort (LUC 330) as opposed to a hotel (LUC 310).</b>	(1) A blended rate was utilized to better represent Smoke Tree Resort. The weighted averages from LUC 330 and the Fitted Curves from LUC 310 were averaged and then used to estimate trips generated by Smoke Tree Resort.
4.	<b>Smoke Tree Resort utilized equations as opposed to average rates. KHA went through the ITE Trip Generation Handbook process presented in Figure 4.2 assuming proposed number of units for resort hotel (LUC 330).</b>	(1) The weighted averaged from LUC 330 were utilized when finding the blended rates for the new Smoke Tree trip generation.
5.	<b>A proposed growth of 1.125 was utilized through year 2025. Please provide background support on for the growth rate being utilized.</b>	(1) Background support justifying the growth rates utilized has been provided in Appendix F of the TIA.
6.	<b>The storage lengths will need to be updated based on the previous comments.</b>	(1) Storage lengths will be updated per previous comments



**Smoke Tree Access Exhibits  
November 1, 2018 Review**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Kim Carroll, Kimley Horn/Town of Paradise Valley**

Item	Review Comment	(Code) & Response
7.	<p><b>AASHTO A Policy on Geometric Design for Highways and Streets was utilized to calculate the storage length requirements. Per AASHTO “At unsignalized intersection, the storage lengths should be determined by an intersection traffic analysis based on the number of turning vehicles likely to arrive in an average two-minute period within the peak hour. Space for at least two passenger vehicles should be provided.” AASHTO further recommends using the Transportation Research Board (TRB) Access Control Manual. Based on this review, the storage length calculation[1] is summarized as:</b></p> <p><b>CivTech used an N value of 60 minutes per hour rather than 30 cycles per hour. One could argue the two-minute period. The two-minute period is a function of opposing volumes and the time necessary to make the left turn maneuver. Considering the opposing volumes on Lincoln Drive, we recommend that no less than two-minute period be utilized. For this reason, the storage lengths for each left turn lane should be updated. Furthermore, based on AASHTO, the minimum storage length shall be 50 feet (not 25 foot) to accommodate at least two passenger vehicles.</b></p>	
8.	<p><b>Posted speed limit of Lincoln Drive within the project limits is 40 MPH. Based on the City of Scottsdale’s, Design Standards &amp; Policies Manual, 2018 and Standard Detail 2225 (provided below) an opening taper of 90 feet minimum should be provided at median break locations.</b></p>	<p>(1) Design recommendations for the westbound left turn lane at the Smoke Tree access on Lincoln Drive have been provided in the TIA</p>



**Smoke Tree Access Exhibits  
November 1, 2018 Review**

**CivTech, Inc.**

**Review Comments & Responses**

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Kim Carroll, Kimley Horn/Town of Paradise Valley**

Item	Review Comment	(Code) & Response
9.	<b>Based on the comments presented above, the access points to Lincoln Medical under all options should be restricted to right in/right out only movements. The spacing between the driveways coupled with the eastbound stacking do not provide a feasible option for maintaining left turn maneuvers.</b>	(3) Lincoln Medical driveways are no longer being evaluated in this study.
10.	<b>Option 3 presents right in/right out only with U-turns being made at the proposed median break locations at Quail Run and the Lincoln Apartments access on the east end. The width of Lincoln Drive will not provide the width necessary to safely make a U-turn maneuvers. Ideally spacing the access points to accommodate the volumes and lane geometry will provide a safer option. Sharing of access between parcels would also provide access opportunities for the adjacent parcels. In this case, Lincoln Medical could benefit from a shared access with Smoke Tree Resort. Currently today, there is an opening on-site that could be utilized as cross access between the parcels.</b>	(3) Full access on Lincoln Drive and Quail Run Road will be provided as this was agreed upon by CivTech, Kimley Horn and the Town of Paradise Valley.
11.	<b>Spacing between Quail Run and Lincoln Apartments access on the east end is approximately 725 feet. Ideally, per TRB Access Control Manual, 660 feet spacing is preferred for full access (left in/left out/right in/right out) median breaks. In this case, the spacing is not available. As shown in Option 2, consider moving the Smoke Tree full access, a minimum of 365 feet west of the Lincoln Apartment access. This spacing will maximize the spacing between Quail Run and Lincoln Apartments access and will accommodate the minimum geometry necessary to accommodate the estimated left turn volumes. Placement will also fall west of the observed eastbound queues at Scottsdale Road.</b>	(3) The final location of the Smoke Tree access on Lincoln Drive has not been decided upon.

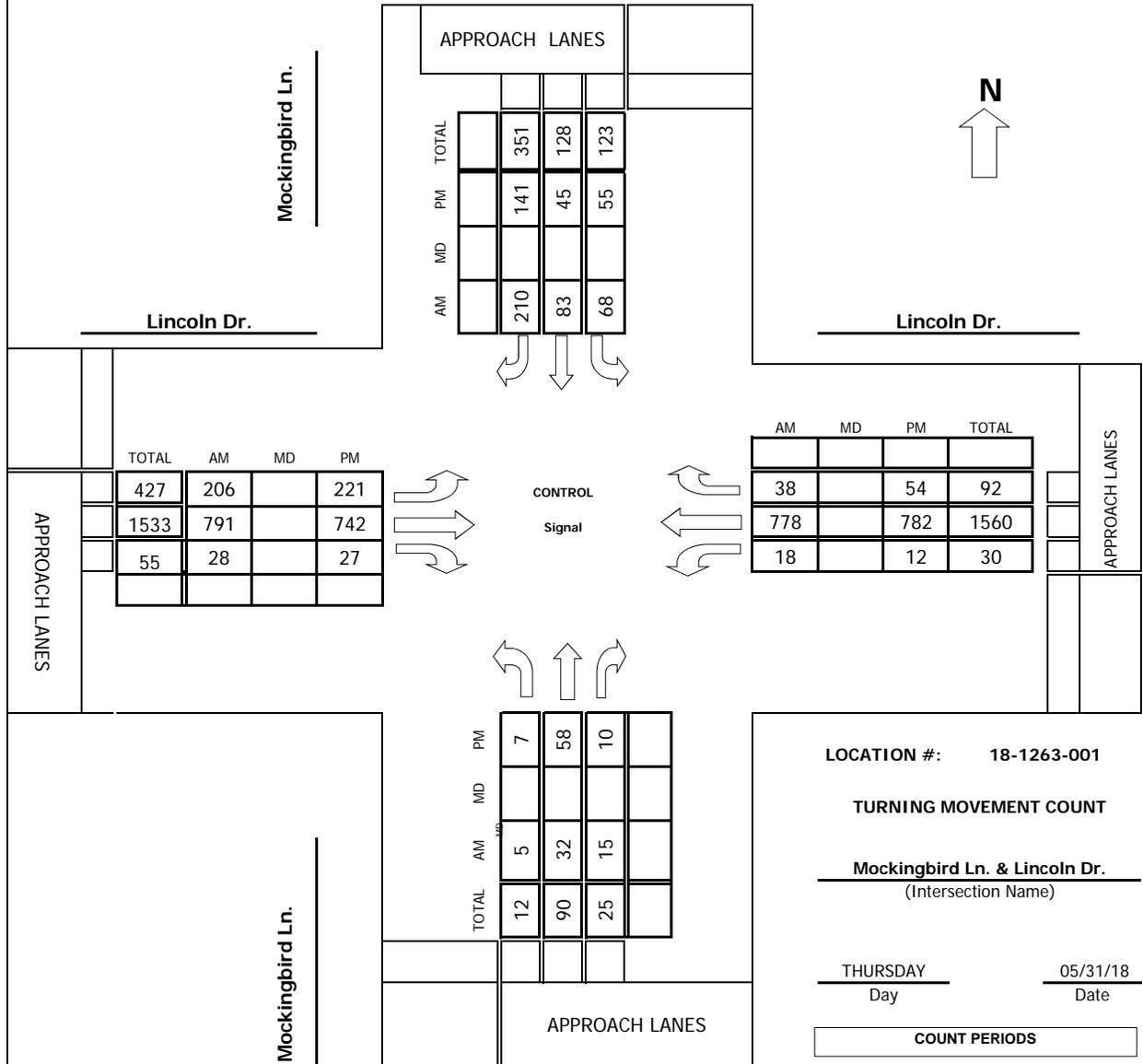


## **APPENDIX B**

### **EXISTING TRAFFIC COUNTS**

**Project #:** 18-1263-001

***TMC SUMMARY OF Mockingbird Ln. & Lincoln Dr.***



TOTAL	AM	MD	PM
427	206		221
1533	791		742
55	28		27

AM	MD	PM	TOTAL
38		54	92
778		782	1560
18		12	30

TOTAL	AM	MD	PM
12	5		7
90	32		58
25	15		10

**LOCATION #:** 18-1263-001

**TURNING MOVEMENT COUNT**

**Mockingbird Ln. & Lincoln Dr.**  
 (Intersection Name)

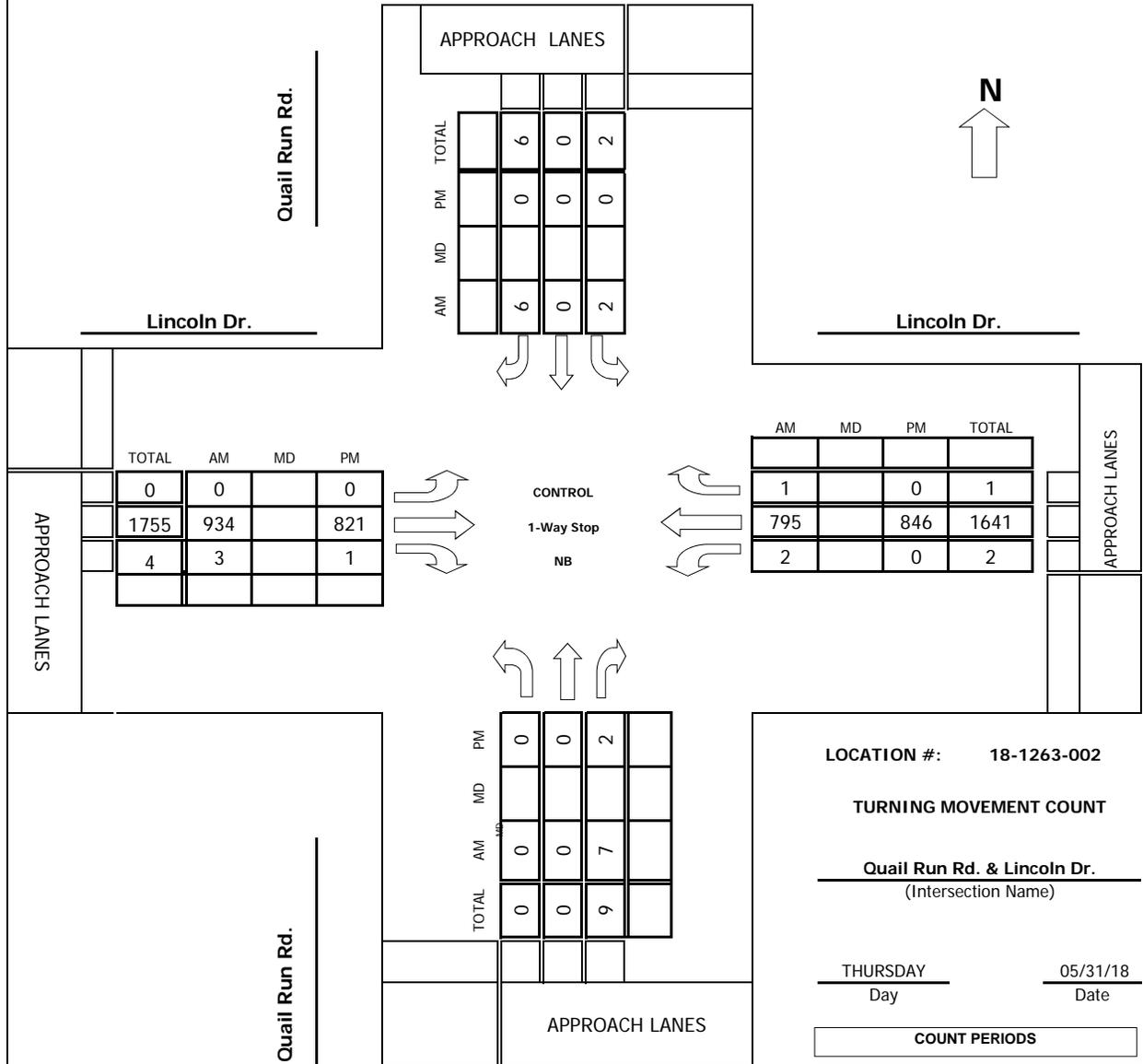
THURSDAY                      05/31/18  
 Day                                      Date

COUNT PERIODS		
<b>AM</b>	700AM	- 900AM
<b>NOON</b>	-	-
<b>PM</b>	400PM	- 600PM

AM PEAK HOUR                      745 AM  
 NOON PEAK HOUR                      \_\_\_\_\_  
 PM PEAK HOUR                      430 PM

**Project #:** 18-1263-002

**TMC SUMMARY OF Quail Run Rd. & Lincoln Dr.**



TOTAL	AM	MD	PM
0	0		0
1755	934		821
4	3		1

AM	MD	PM	TOTAL
1		0	1
795		846	1641
2		0	2

TOTAL	AM	MD	PM
0	0		0
0	0		0
9	7		2

**LOCATION #:** 18-1263-002

**TURNING MOVEMENT COUNT**

**Quail Run Rd. & Lincoln Dr.**  
 (Intersection Name)

**THURSDAY**                      **05/31/18**  
 Day                                      Date

COUNT PERIODS		
<b>AM</b>	700AM	- 900AM
<b>NOON</b>	-	-
<b>PM</b>	400PM	- 600PM

AM PEAK HOUR                      800 AM  
 NOON PEAK HOUR                      \_\_\_\_\_  
 PM PEAK HOUR                      445 PM

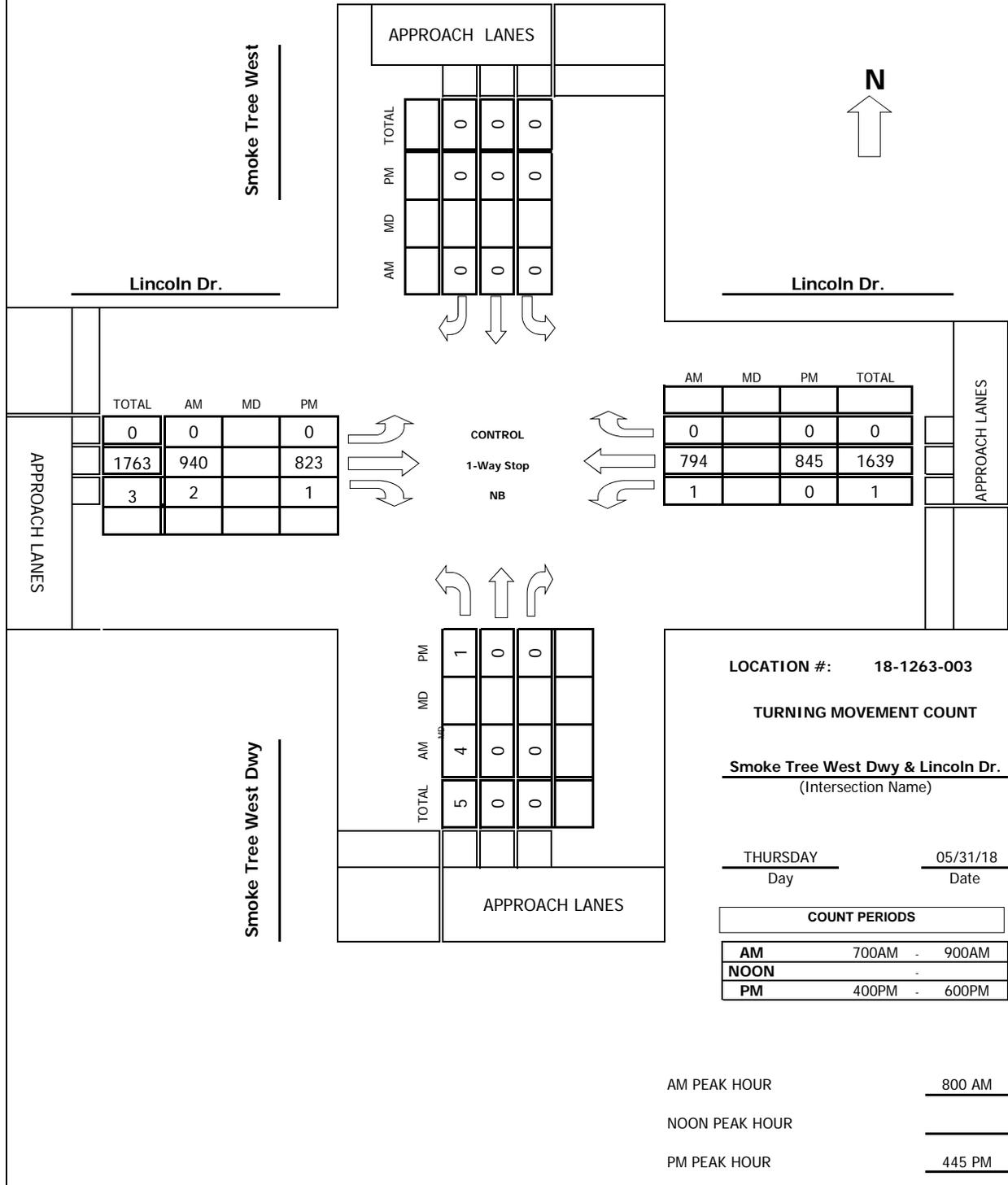
# Intersection Turning Movement

Prepared by:



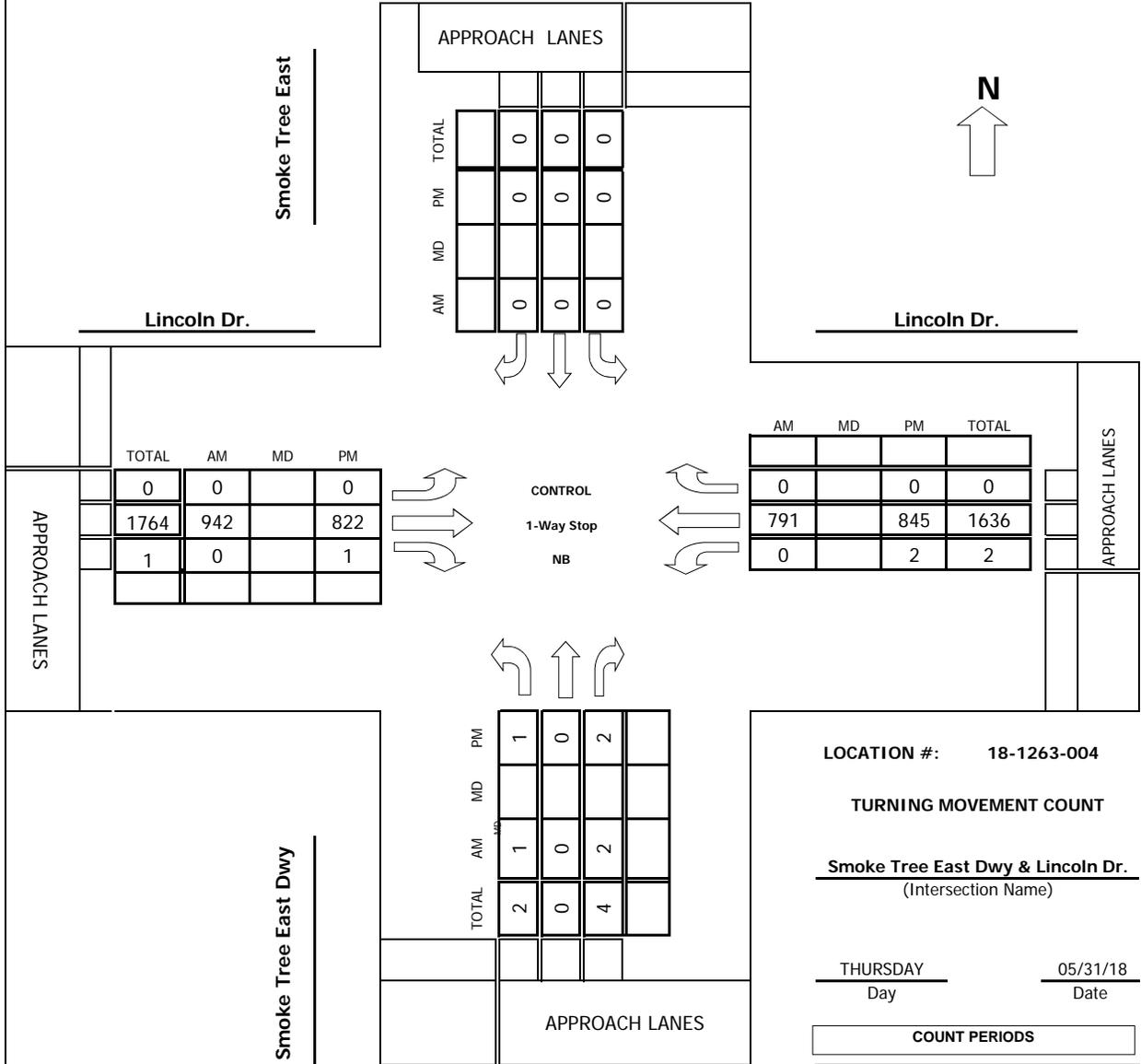
Project #: 18-1263-003

## TMC SUMMARY OF Smoke Tree West Dwy & Lincoln Dr.



**Project #:** 18-1263-004

**TMC SUMMARY OF Smoke Tree East Dwy & Lincoln Dr.**



	TOTAL	AM	MD	PM
APPROACH LANES	0	0		0
	1764	942		822
	1	0		1

	AM	MD	PM	TOTAL
APPROACH LANES	0		0	0
	791		845	1636
	0		2	2

	TOTAL	AM	MD	PM
APPROACH LANES	1			
	1	0		2
	2	0		4

**LOCATION #:** 18-1263-004

**TURNING MOVEMENT COUNT**

**Smoke Tree East Dwy & Lincoln Dr.**  
(Intersection Name)

THURSDAY                      05/31/18  
Day                                      Date

COUNT PERIODS		
AM	700AM	- 900AM
NOON	-	-
PM	400PM	- 600PM

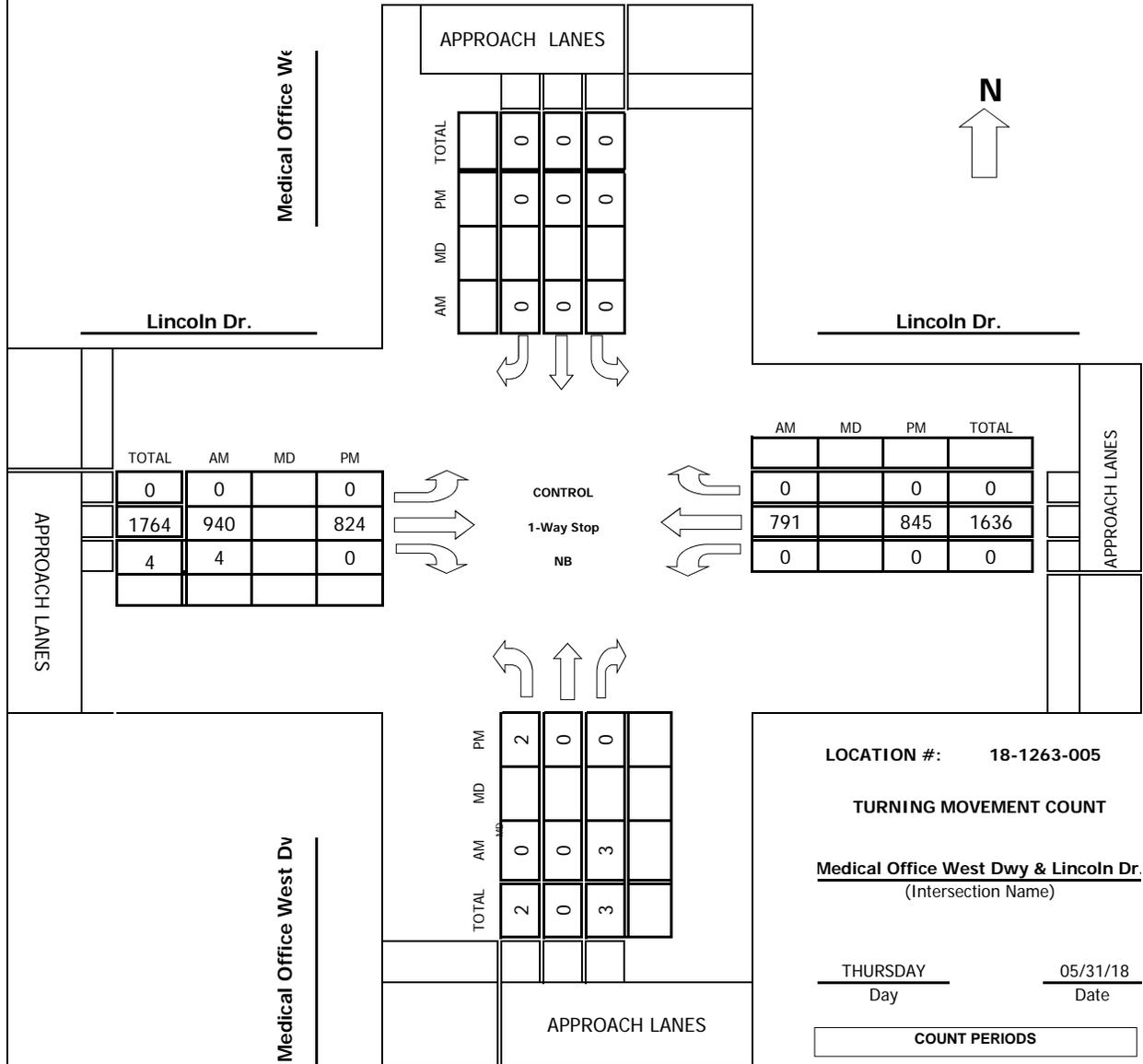
AM PEAK HOUR                      800 AM

NOON PEAK HOUR                      \_\_\_\_\_

PM PEAK HOUR                      445 PM

Project #: 18-1263-005

***TMC SUMMARY OF Medical Office West Dwy & Lincoln Dr.***



TOTAL	AM	MD	PM
0	0		0
1764	940		824
4	4		0

AM	MD	PM	TOTAL
0		0	0
791		845	1636
0		0	0

TOTAL	AM	MD	PM
2	0		2
0	0		0
3	3		0

LOCATION #: 18-1263-005

**TURNING MOVEMENT COUNT**

**Medical Office West Dwy & Lincoln Dr.**  
 (Intersection Name)

THURSDAY                      05/31/18  
 Day                                      Date

COUNT PERIODS	
AM	700AM - 900AM
NOON	-
PM	400PM - 600PM

AM PEAK HOUR                      800 AM  
 NOON PEAK HOUR                      \_\_\_\_\_  
 PM PEAK HOUR                      445 PM



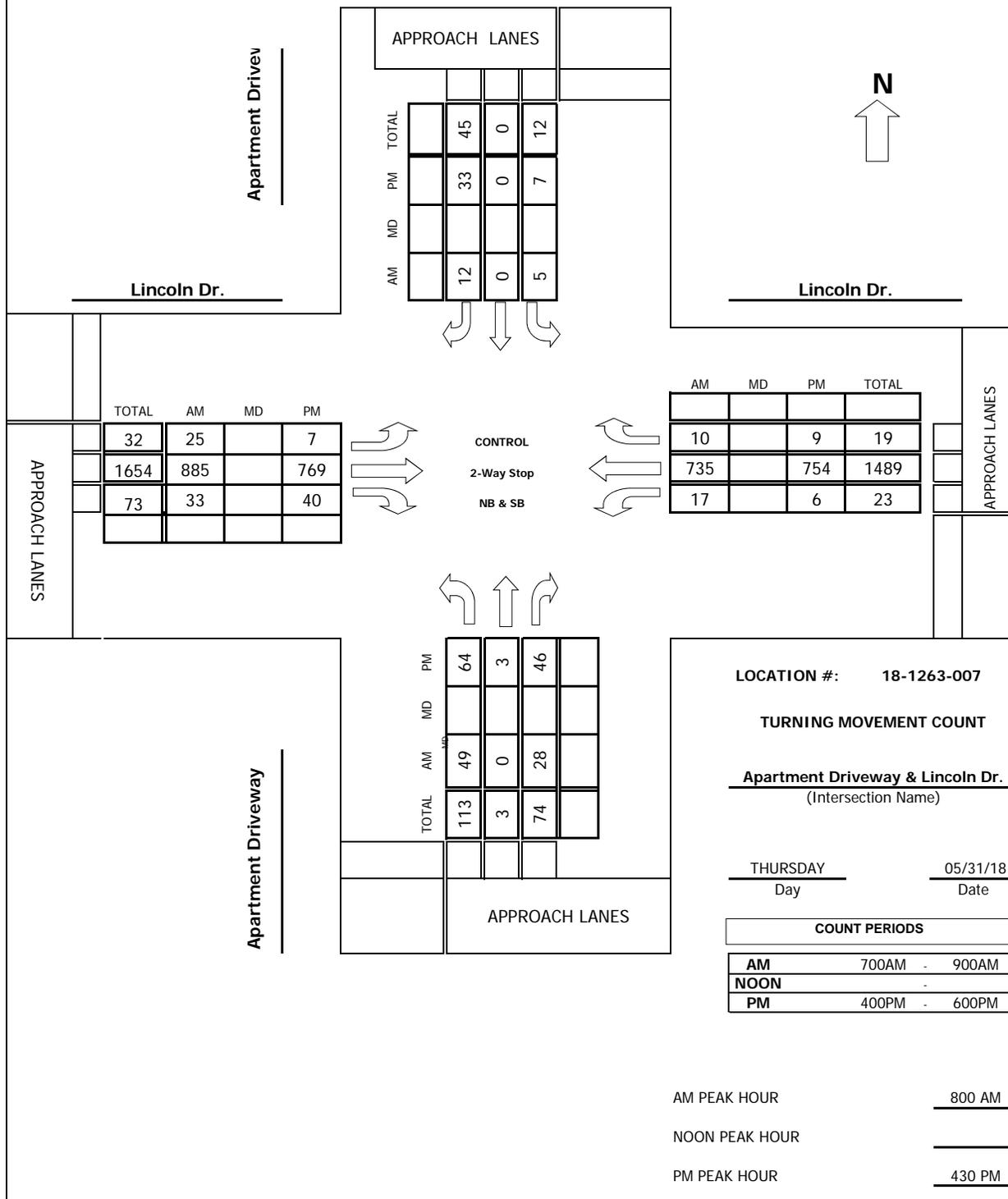
# Intersection Turning Movement

Prepared by:



Project #: 18-1263-007

## TMC SUMMARY OF Apartment Driveway & Lincoln Dr.



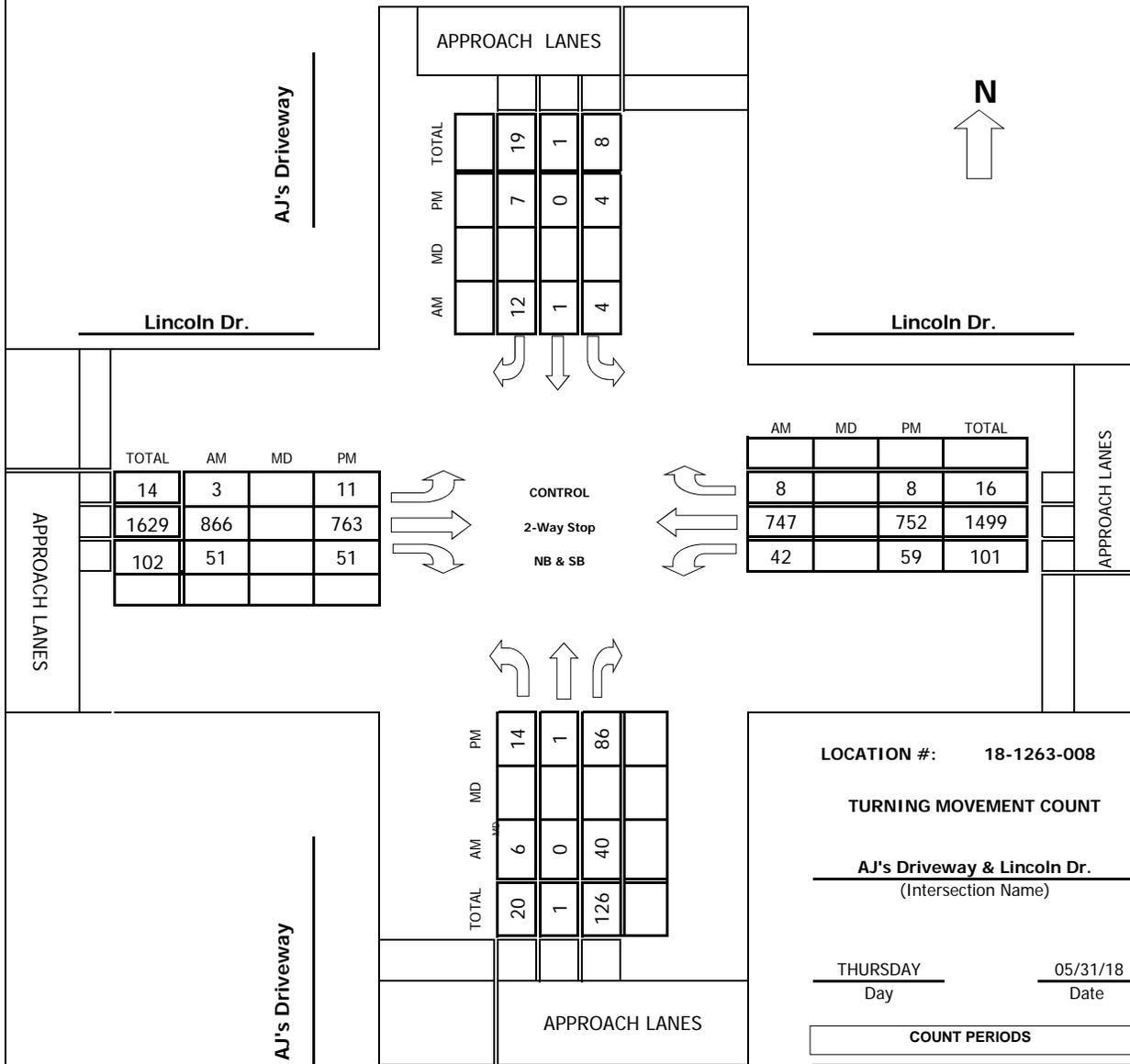
# Intersection Turning Movement

Prepared by:



Project #: 18-1263-008

## TMC SUMMARY OF AJ's Driveway & Lincoln Dr.



TOTAL	AM	MD	PM
14	3		11
1629	866		763
102	51		51

AM	MD	PM	TOTAL
8		8	16
747		752	1499
42		59	101

TOTAL	AM	MD	PM
20	6		14
1	0		1
126	40		86

LOCATION #: 18-1263-008

**TURNING MOVEMENT COUNT**

AJ's Driveway & Lincoln Dr.  
(Intersection Name)

THURSDAY                      05/31/18  
Day                                      Date

COUNT PERIODS		
AM	700AM	- 900AM
NOON	-	-
PM	400PM	- 600PM

AM PEAK HOUR                      800 AM  
NOON PEAK HOUR                      \_\_\_\_\_  
PM PEAK HOUR                        430 PM

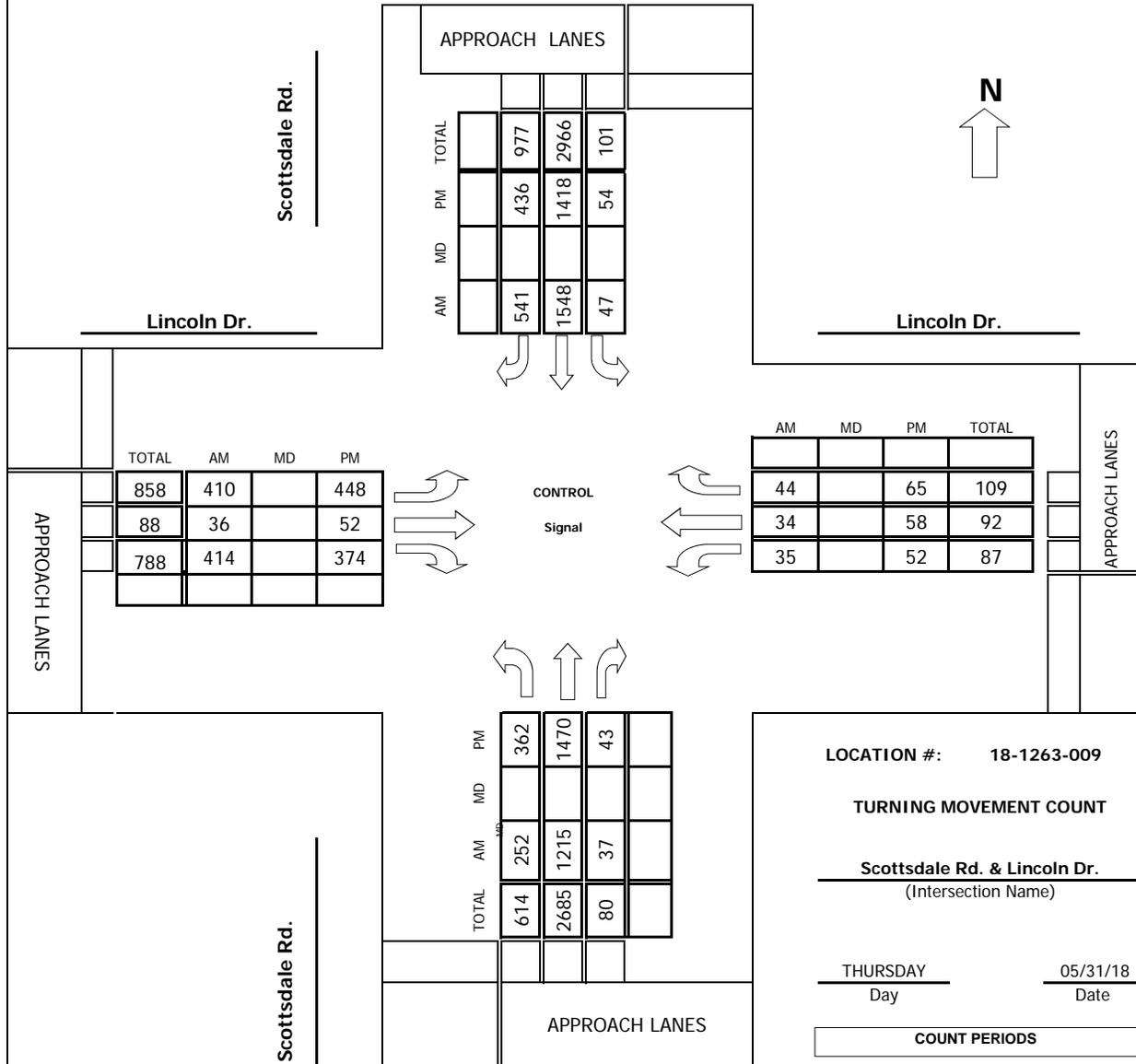
# Intersection Turning Movement

Prepared by:



Project #: 18-1263-009

## TMC SUMMARY OF Scottsdale Rd. & Lincoln Dr.



AM PEAK HOUR 745 AM

NOON PEAK HOUR                     

PM PEAK HOUR 430 PM

## **APPENDIX C**

### **EXISTING PEAK HOUR ANALYSIS**

Existing AM  
1: Mockingbird Ln & Lincoln Drive

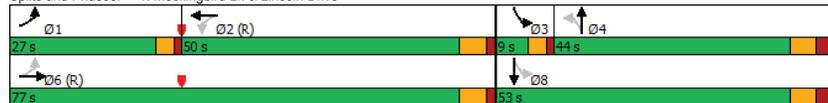
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	212	815	19	801	5	33	70	85
Future Volume (vph)	212	815	19	801	5	33	70	85
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	96.1	94.1	74.9	74.9	16.2	16.2	25.9	23.4
Actuated g/C Ratio	0.74	0.72	0.58	0.58	0.12	0.12	0.20	0.18
v/c Ratio	0.53	0.35	0.07	0.44	0.11	0.22	0.34	0.82
Control Delay	10.5	7.8	18.3	18.5	51.6	37.6	45.5	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	7.8	18.3	18.5	51.6	37.6	45.5	50.3
LOS	B	A	B	B	D	D	D	D
Approach Delay		8.3		18.5		39.0		49.4
Approach LOS		A		B		D		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 19.3	Intersection LOS: B
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Existing AM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	212	815	29	19	801	39	5	33	15	70	85	216
Future Volume (veh/h)	212	815	29	19	801	39	5	33	15	70	85	216
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	236	906	21	21	890	26	6	37	10	78	94	129
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	482	2824	65	434	2460	72	84	118	32	192	111	153
Arrive On Green	0.06	0.76	0.76	0.66	0.66	0.66	0.08	0.08	0.08	0.04	0.15	0.15
Sat Flow, veh/h	1688	3737	87	572	3711	108	1097	1493	403	1688	752	1031
Grp Volume(v), veh/h	236	453	474	21	449	467	6	0	47	78	0	223
Grp Sat Flow(s),veh/h/ln	1688	1870	1953	572	1870	1949	1097	0	1896	1688	0	1783
Q Serve(g_s), s	5.5	10.2	10.2	1.7	13.8	13.8	0.7	0.0	3.0	5.0	0.0	15.8
Cycle Q Clear(g_c), s	5.5	10.2	10.2	1.7	13.8	13.8	7.5	0.0	3.0	5.0	0.0	15.8
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.21	1.00		0.58
Lane Grp Cap(c), veh/h	482	1414	1476	434	1240	1292	84	0	149	192	0	264
V/C Ratio(X)	0.49	0.32	0.32	0.05	0.36	0.36	0.07	0.00	0.31	0.41	0.00	0.84
Avail Cap(c_a), veh/h	675	1414	1476	434	1240	1292	314	0	547	192	0	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.7	5.1	5.1	7.7	9.7	9.7	62.0	0.0	56.6	51.8	0.0	53.9
Incr Delay (d2), s/veh	0.8	0.6	0.6	0.2	0.8	0.8	0.4	0.0	1.2	1.4	0.0	7.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.8	3.9	0.2	5.8	6.0	0.2	0.0	1.5	2.4	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.5	5.7	5.7	7.9	10.5	10.5	62.3	0.0	57.7	53.2	0.0	61.2
LnGrp LOS	A	A	A	A	B	B	E	A	E	D	A	E
Approach Vol, veh/h		1163			937			53				301
Approach Delay, s/veh		6.1			10.5			58.3				59.1
Approach LOS		A			B			E				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	12.1	92.2	9.0	16.7		104.3		25.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+1), s	7.5	15.8	7.0	9.5		12.2		17.8				
Green Ext Time (p_c), s	0.6	6.9	0.0	0.2		7.4		1.4				

Intersection Summary

HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Existing AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	0	962	3	2	819	1	0	0	7	2	0	6
Future Vol, veh/h	0	962	3	2	819	1	0	0	7	2	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1069	3	2	910	1	0	0	8	2	0	7

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	911	0	0	1072
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	*1034
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	*1034
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10.3	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	691	*1106	-	-	*1034	-	-	610
HCM Lane V/C Ratio	0.011	-	-	-	0.002	-	-	0.015
HCM Control Delay (s)	10.3	0	-	-	8.5	-	-	11
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

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

Existing AM  
3: Smoke Tree West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		
Traffic Vol, veh/h	968	2	1	818	4	0	
Future Vol, veh/h	968	2	1	818	4	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	25	-	0	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	90	90	90	90	90	90	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	1076	2	1	909	4	0	

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1078
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	*1034
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*1034
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	407	-	-	*1034	-
HCM Lane V/C Ratio	0.011	-	-	0.001	-
HCM Control Delay (s)	13.9	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Existing AM  
4: Smoke Tree East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	970	0	0	815	1	2
Future Vol, veh/h	970	0	0	815	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1078	0	0	906	1	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1078	0	1531
Stage 1	-	-	-	-	1078
Stage 2	-	-	-	-	453
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*1034	-	*469
Stage 1	-	-	-	-	*652
Stage 2	-	-	-	-	*698
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*1034	-	*469
Mov Cap-2 Maneuver	-	-	-	-	*521
Stage 1	-	-	-	-	*652
Stage 2	-	-	-	-	*698

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	623	-	-	* 1034	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Existing AM  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	968	4	0	815	0	3
Future Vol, veh/h	968	4	0	815	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1076	4	0	906	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1080	0	1531
Stage 1	-	-	-	-	1078
Stage 2	-	-	-	-	453
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*1034	-	*389
Stage 1	-	-	-	-	*652
Stage 2	-	-	-	-	*698
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*1034	-	*389
Mov Cap-2 Maneuver	-	-	-	-	*485
Stage 1	-	-	-	-	*652
Stage 2	-	-	-	-	*698

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	691	-	-	* 1034	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Existing AM  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑↑	↑↑	↑↑	
Traffic Vol, veh/h	967	2	5	815	0	3
Future Vol, veh/h	967	2	5	815	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1074	2	6	906	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1076	0
Stage 1	-	-	-	1075
Stage 2	-	-	-	465
Critical Hdwy	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-
Pot Cap-1 Maneuver	-	-	*1034	-
Stage 1	-	-	-	*652
Stage 2	-	-	-	*698
Platoon blocked, %	-	-	1	-
Mov Cap-1 Maneuver	-	-	*1034	-
Mov Cap-2 Maneuver	-	-	-	*454
Stage 1	-	-	-	*648
Stage 2	-	-	-	*698

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	691	-	-	*1034	-
HCM Lane V/C Ratio	0.005	-	-	0.005	-
HCM Control Delay (s)	10.2	-	-	8.5	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Existing AM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑		↑↑	↑↑				↑↑	↑↑		↑↑
Traffic Vol, veh/h	26	912	34	18	757	10	50	0	29	5	0	12
Future Vol, veh/h	26	912	34	18	757	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1013	38	20	841	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	852	0	0	1051
Stage 1	-	-	-	1090
Stage 2	-	-	-	461
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	6.54
Critical Hdwy Stg 2	-	-	-	6.54
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1142	-	-	1028
Stage 1	-	-	-	*585
Stage 2	-	-	-	*720
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1142	-	-	1028
Mov Cap-2 Maneuver	-	-	-	*439
Stage 1	-	-	-	*570
Stage 2	-	-	-	*693

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	13.5	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	511	*1142	-	-	1028	-	-	452	763
HCM Lane V/C Ratio	0.172	0.025	-	-	0.019	-	-	0.012	0.017
HCM Control Delay (s)	13.5	8.2	-	-	8.6	-	-	13.1	9.8
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	0	0.1

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

Existing AM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th WSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	3	892	53	43	769	8	6	0	41	4	1	12
Future Vol, veh/h	3	892	53	43	769	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	991	59	48	854	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	863	0	1050	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	2.22	-
Pot Cap-1 Maneuver	*1142	-	1029	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	1	-
Mov Cap-1 Maneuver	*1142	-	1029	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	10.8	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	669	*1142	-	-	1029	-	-	429	763
HCM Lane V/C Ratio	0.078	0.003	-	-	0.046	-	-	0.01	0.017
HCM Control Delay (s)	10.8	8.2	-	-	8.7	-	-	13.5	9.8
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0	0.1

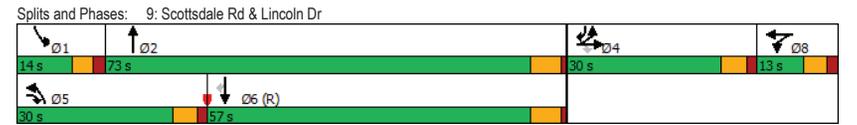
Notes  
 ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Existing AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔	
Traffic Volume (vph)	422	37	426	36	35	260	1251	48	1594	557
Future Volume (vph)	422	37	426	36	35	260	1251	48	1594	557
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases	4									
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	10.0	5.0	10.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	13.0	16.7	11.0	16.0	13.0
Total Split (%)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag	Lead		Lead		Lead		Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	23.0	23.0	39.9	7.2	7.2	16.9	72.2	7.5	60.6	89.3
Actuated g/C Ratio	0.18	0.18	0.31	0.06	0.06	0.13	0.56	0.06	0.47	0.69
v/c Ratio	0.85	0.86	0.89	0.41	0.39	0.65	0.51	0.52	0.75	0.53
Control Delay	77.2	77.4	44.6	72.1	34.3	60.0	19.6	77.2	32.1	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	77.4	44.6	72.1	34.3	60.0	19.6	77.2	32.1	8.4
LOS	E	E	D	E	C	E	B	E	C	A
Approach Delay	61.6		46.0		26.4		27.1			
Approach LOS	E		D		C		C			

Intersection Summary  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 33.8      Intersection LOS: C  
 Intersection Capacity Utilization 77.0%      ICU Level of Service D  
 Analysis Period (min) 15



Existing AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	422	37	426	36	35	45	260	1251	38	48	1594	557
Future Volume (veh/h)	422	37	426	36	35	45	260	1251	38	48	1594	557
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	498	0	251	40	39	33	289	1390	31	53	1771	375
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	572	0	414	94	102	77	348	2357	53	68	2015	880
Arrive On Green	0.16	0.00	0.16	0.05	0.05	0.05	0.10	0.46	0.46	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1931	1454	3456	5139	115	1781	5106	1585
Grp Volume(v), veh/h	498	0	251	40	35	37	289	921	500	53	1771	375
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1609	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	17.7	0.0	18.1	2.8	2.5	2.9	10.7	26.1	26.1	3.8	41.8	17.9
Cycle Q Clear(g_c), s	17.7	0.0	18.1	2.8	2.5	2.9	10.7	26.1	26.1	3.8	41.8	17.9
Prop In Lane	1.00		1.00	1.00		0.90	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	572	0	414	94	94	85	348	1561	848	68	2015	880
V/C Ratio(X)	0.87	0.00	0.61	0.42	0.38	0.43	0.83	0.59	0.59	0.78	0.88	0.43
Avail Cap(c_a), veh/h	671	0	458	101	101	92	651	1762	958	119	2015	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	0.0	42.1	59.6	59.5	59.7	57.4	26.1	26.1	62.0	36.5	16.9
Incr Delay (d2), s/veh	9.6	0.0	1.1	1.1	0.9	1.3	2.0	0.2	0.4	6.9	5.9	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	0.0	7.2	1.3	1.2	1.2	4.8	10.6	11.5	1.9	18.2	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.8	0.0	43.3	60.8	60.4	60.9	59.3	26.3	26.5	68.8	42.3	18.4
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		749			112			1710			2199	
Approach Delay, s/veh		56.3			60.7			31.9			38.9	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	65.3		26.4	18.6	57.0		12.5				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I1), s	5.8	28.1		20.1	12.7	43.8		4.9				
Green Ext Time (p_c), s	0.0	2.0		0.8	0.4	2.5		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing AM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	422	37	426	36	35	260	1251	48	1594	557
Future Volume (vph)	422	37	426	36	35	260	1251	48	1594	557
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4						6	
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	5.0	10.0	7.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	16.7	11.0	16.0	13.0	13.0
Total Split (s)	33.0	33.0	28.0	17.0	17.0	28.0	66.0	14.0	52.0	33.0
Total Split (%)	25.4%	25.4%	21.5%	13.1%	13.1%	21.5%	50.8%	10.8%	40.0%	25.4%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None						
Act Effct Green (s)	24.5	24.5	40.2	8.1	8.1	15.7	69.5	7.9	59.5	89.6
Actuated g/C Ratio	0.19	0.19	0.31	0.06	0.06	0.12	0.53	0.06	0.46	0.69
v/c Ratio	0.80	0.81	0.83	0.36	0.36	0.70	0.53	0.50	0.76	0.52
Control Delay	69.0	69.3	32.8	67.5	32.4	63.8	22.0	74.2	33.5	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	69.3	32.8	67.5	32.4	63.8	22.0	74.2	33.5	6.4
LOS	E	E	C	E	C	E	C	E	C	A
Approach Delay		51.6			43.3		29.0		27.5	
Approach LOS		D			D		C		C	

Intersection Summary  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 32.9  
 Intersection Capacity Utilization 77.0%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service D



Existing AM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	422	37	426	36	35	45	260	1251	38	48	1594	557
Future Volume (veh/h)	422	37	426	36	35	45	260	1251	38	48	1594	557
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	498	0	251	40	39	33	289	1390	31	53	1771	341
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	578	0	417	94	102	77	347	2158	48	68	1819	822
Arrive On Green	0.16	0.00	0.16	0.05	0.05	0.05	0.10	0.42	0.42	0.04	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1931	1454	3456	5139	115	1781	5106	1585
Grp Volume(v), veh/h	498	0	251	40	35	37	289	921	500	53	1771	341
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1609	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	17.7	0.0	18.0	2.8	2.5	2.9	10.7	28.0	28.0	3.8	44.4	17.2
Cycle Q Clear(g_c), s	17.7	0.0	18.0	2.8	2.5	2.9	10.7	28.0	28.0	3.8	44.4	17.2
Prop In Lane	1.00		1.00	1.00		0.90	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	578	0	417	94	94	85	347	1429	777	68	1819	822
V/C Ratio(X)	0.86	0.00	0.60	0.42	0.38	0.43	0.83	0.64	0.64	0.78	0.97	0.41
Avail Cap(c_a), veh/h	754	0	495	156	156	141	598	1579	858	119	1819	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	0.0	42.0	59.6	59.5	59.7	57.4	30.0	30.0	62.0	41.3	19.2
Incr Delay (d2), s/veh	6.6	0.0	0.6	1.1	0.9	1.3	2.0	0.5	1.0	6.9	15.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	0.0	7.1	1.3	1.2	1.2	4.8	11.5	12.6	1.9	21.1	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	0.0	42.6	60.8	60.4	60.9	59.4	30.5	31.0	68.8	57.0	20.7
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	E	C
Approach Vol, veh/h		749			112			1710			2165	
Approach Delay, s/veh		53.9			60.7			35.5			51.6	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.3	60.3		26.6	18.6	52.0		12.5				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	60.3		27.5	22.5	46.3		11.4				
Max Q Clear Time (g_c+I1), s	5.8	30.0		20.0	12.7	46.4		4.9				
Green Ext Time (p_c), s	0.0	2.0		1.1	0.4	0.0		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

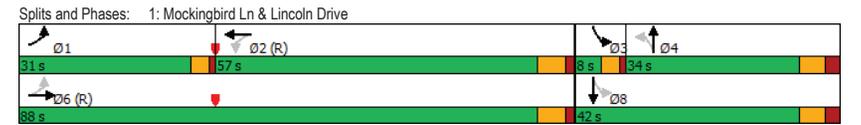
Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing PM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	228	764	12	805	7	60	57	46
Future Volume (vph)	228	764	12	805	7	60	57	46
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	7.0	7.0	4.0	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	102.4	100.4	84.3	84.3	10.7	10.7	19.6	17.1
Actuated g/C Ratio	0.79	0.77	0.65	0.65	0.08	0.08	0.15	0.13
v/c Ratio	0.53	0.32	0.03	0.42	0.10	0.51	0.37	0.66
Control Delay	8.1	5.3	11.8	13.0	55.7	63.3	53.2	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	5.3	11.8	13.0	55.7	63.3	53.2	32.6
LOS	A	A	B	B	E	E	D	C
Approach Delay		5.9		13.0		62.6		37.3
Approach LOS		A		B		E		D

Intersection Summary  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 14.2  
 Intersection Capacity Utilization 61.8%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B



Existing PM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	228	764	28	12	805	56	7	60	10	57	46	145
Future Volume (veh/h)	228	764	28	12	805	56	7	60	10	57	46	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	253	849	20	13	894	45	8	67	5	63	51	105
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	512	2790	66	499	2399	121	88	96	7	134	64	132
Arrive On Green	0.06	0.79	0.79	0.70	0.70	0.70	0.06	0.06	0.06	0.03	0.12	0.12
Sat Flow, veh/h	1781	3549	84	637	3443	173	1231	1719	128	1781	545	1123
Grp Volume(v), veh/h	253	425	444	13	461	478	8	0	72	63	0	156
Grp Sat Flow(s), veh/h/ln	1781	1777	1855	637	1777	1839	1231	0	1847	1781	0	1668
Q Serve(g_s), s	4.9	8.7	8.7	0.8	13.8	13.8	0.8	0.0	5.0	4.0	0.0	11.8
Cycle Q Clear(g_c), s	4.9	8.7	8.7	0.8	13.8	13.8	4.7	0.0	5.0	4.0	0.0	11.8
Prop In Lane	1.00		0.05	1.00		0.09	1.00		0.07	1.00		0.67
Lane Grp Cap(c), veh/h	512	1397	1459	499	1238	1282	88	0	103	134	0	196
V/C Ratio(X)	0.49	0.30	0.30	0.03	0.37	0.37	0.09	0.00	0.70	0.47	0.00	0.80
Avail Cap(c_a), veh/h	778	1397	1459	499	1238	1282	279	0	391	134	0	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.6	3.9	3.9	6.1	8.1	8.1	62.0	0.0	60.3	54.9	0.0	55.8
Incr Delay (d2), s/veh	0.7	0.6	0.5	0.1	0.9	0.8	0.4	0.0	8.1	2.6	0.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.9	3.0	0.1	5.3	5.5	0.3	0.0	2.6	2.0	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	4.5	4.4	6.2	8.9	8.9	62.4	0.0	68.4	57.5	0.0	63.0
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1122			952			80				219
Approach Delay, s/veh		4.9			8.9			67.8				61.4
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2	3	4	6	8						
Phs Duration (G+Y+Rc), s	11.6	96.6	8.0	13.8	108.2	21.8						
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	6.0	6.5						
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5	82.0	35.5						
Max Q Clear Time (g_c+I1), s	6.9	15.8	6.0	7.0	10.7	13.8						
Green Ext Time (p_c), s	0.7	7.4	0.0	0.3	6.8	0.8						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				13.8								
HCM 6th LOS				B								

Existing PM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Vol, veh/h	0	846	1	0	871	0	0	0	2	0	0	0
Future Vol, veh/h	0	846	1	0	871	0	0	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	0
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	940	1	0	968	0	0	0	2	0	0	0
Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	968	0	0	941	0	0	1425	1909	471	1438	1909	484
Stage 1	-	-	-	-	-	-	941	941	-	968	968	-
Stage 2	-	-	-	-	-	-	-	-	-	484	968	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1070	-	-	*1106	-	-	*508	*137	*739	*487	*137	*715
Stage 1	-	-	-	-	-	-	*697	*611	-	*674	*591	-
Stage 2	-	-	-	-	-	-	*674	*591	-	*697	*611	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*1070	-	-	*1106	-	-	*508	*137	*739	*487	*137	*715
Mov Cap-2 Maneuver	-	-	-	-	-	-	*508	*137	-	*487	*137	-
Stage 1	-	-	-	-	-	-	*697	*611	-	*674	*591	-
Stage 2	-	-	-	-	-	-	*674	*591	-	*695	*611	-
Approach	EB	WB	NB	SB								
HCM Control Delay, s	0	0	9.9	0								
HCM LOS			A	A								
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	739	*1070	-	-	*1106	-	-	-				
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	-				
HCM Control Delay (s)	9.9	0	-	-	0	-	-	0				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-				
<b>Notes</b>												
-: Volume exceeds capacity	\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon							

Existing PM  
3: Smoke Tree West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	848	1	0	870	1	0
Future Vol, veh/h	848	1	0	870	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	942	1	0	967	1	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	943
Stage 1	-	-	943
Stage 2	-	-	484
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	*1106
Stage 1	-	-	*698
Stage 2	-	-	*675
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*1106
Mov Cap-2 Maneuver	-	-	*451
Stage 1	-	-	*698
Stage 2	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	451	-	-	*1106	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	13	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Existing PM  
4: Smoke Tree East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	847	1	2	870	1	2
Future Vol, veh/h	847	1	2	870	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	941	1	2	967	1	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	942
Stage 1	-	-	942
Stage 2	-	-	488
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	*1106
Stage 1	-	-	*698
Stage 2	-	-	*675
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*1106
Mov Cap-2 Maneuver	-	-	*513
Stage 1	-	-	*696
Stage 2	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	661	-	-	*1106	-
HCM Lane V/C Ratio	0.005	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Existing PM  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	849	0	0	870	2	0
Future Vol, veh/h	849	0	0	870	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	943	0	0	967	2	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	943
Stage 1	-	-	943
Stage 2	-	-	484
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	*1106	*434
Stage 1	-	-	*698
Stage 2	-	-	*675
Platoon blocked, %	-	1	1
Mov Cap-1 Maneuver	-	*1106	*434
Mov Cap-2 Maneuver	-	-	*511
Stage 1	-	-	*698
Stage 2	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	511	-	*1106	-	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	12.1	-	0	-	-
HCM Lane LOS	B	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

Existing PM  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	849	0	0	869	2	3
Future Vol, veh/h	849	0	0	869	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	943	0	0	966	2	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	943
Stage 1	-	-	943
Stage 2	-	-	483
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	*1106	*350
Stage 1	-	-	*698
Stage 2	-	-	*675
Platoon blocked, %	-	1	1
Mov Cap-1 Maneuver	-	*1106	*350
Mov Cap-2 Maneuver	-	-	*473
Stage 1	-	-	*698
Stage 2	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	603	-	*1106	-	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	11	-	0	-	-
HCM Lane LOS	B	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

Existing PM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗			↖ ↗		↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	7	792	41	6	777	9	66	3	47	7	0	34
Future Vol, veh/h	7	792	41	6	777	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	880	46	7	863	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	873	0	0	926
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1142	-	-	1088
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1142	-	-	1088
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	13.2	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	568	*1142	-	-	1088	-	-	487	763
HCM Lane V/C Ratio	0.227	0.007	-	-	0.006	-	-	0.016	0.05
HCM Control Delay (s)	13.2	8.2	-	-	8.3	-	-	12.5	10
HCM Lane LOS	B	A	-	-	A	-	-	B	B
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0	0.2

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

Existing PM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗			↖ ↗		↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	11	786	53	61	775	8	14	1	89	4	0	7
Future Vol, veh/h	11	786	53	61	775	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	873	59	68	861	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	870	0	0	932
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1142	-	-	1081
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1142	-	-	1081
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	11.2	11.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	699	*1142	-	-	1081	-	-	413	763
HCM Lane V/C Ratio	0.165	0.011	-	-	0.063	-	-	0.011	0.01
HCM Control Delay (s)	11.2	8.2	-	-	8.6	-	-	13.8	9.8
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0.2	-	-	0	0

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

Existing PM  
9: Scottsdale Rd & Lincoln Dr

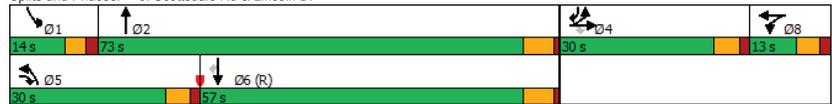
Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	461	54	385	54	60	373	1514	56	1461	449
Future Volume (vph)	461	54	385	54	60	373	1514	56	1461	449
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	5.0	10.0	7.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	16.7	11.0	16.0	13.0	
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	23.9	23.9	43.7	7.3	7.3	19.9	71.1	7.7	56.6	86.2
Actuated g/C Ratio	0.18	0.18	0.34	0.06	0.06	0.15	0.55	0.06	0.44	0.66
v/c Ratio	0.93	0.91	0.74	0.61	0.56	0.79	0.62	0.60	0.73	0.46
Control Delay	88.8	85.1	29.5	84.9	38.1	64.2	22.3	82.1	33.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.8	85.1	29.5	84.9	38.1	64.2	22.3	82.1	33.6	9.9
LOS	F	F	C	F	D	E	C	F	C	A
Approach Delay		62.4			52.1		30.4		29.5	
Approach LOS		E			D		C		C	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.6	Intersection LOS: D
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Existing PM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	461	54	385	54	60	67	373	1514	44	56	1461	449
Future Volume (veh/h)	461	54	385	54	60	67	373	1514	44	56	1461	449
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	555	0	261	60	67	52	414	1682	38	62	1623	332
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	615	0	491	96	107	75	473	2510	57	79	2015	899
Arrive On Green	0.17	0.00	0.17	0.05	0.05	0.05	0.14	0.49	0.49	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1992	1403	3456	5137	116	1781	5106	1585
Grp Volume(v), veh/h	555	0	261	60	59	60	414	1114	606	62	1623	332
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1618	1728	1702	1849	1781	1702	1585
Q Serve(g_s), s	19.8	0.0	17.7	4.3	4.2	4.7	15.3	32.4	32.4	4.5	36.7	14.9
Cycle Q Clear(g_c), s	19.8	0.0	17.7	4.3	4.2	4.7	15.3	32.4	32.4	4.5	36.7	14.9
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	615	0	491	96	96	87	473	1663	904	79	2015	899
V/C Ratio(X)	0.90	0.00	0.53	0.63	0.62	0.69	0.87	0.67	0.67	0.78	0.81	0.37
Avail Cap(c_a), veh/h	671	0	516	101	101	92	651	1762	957	119	2015	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	0.0	37.1	60.2	60.2	60.4	55.0	25.3	25.3	61.5	34.9	15.4
Incr Delay (d2), s/veh	13.9	0.0	0.4	7.5	6.9	14.9	7.7	0.7	1.3	8.7	3.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	6.9	2.1	2.1	2.3	7.2	13.1	14.4	2.2	15.7	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.6	0.0	37.5	67.7	67.1	75.3	62.7	26.0	26.6	70.2	38.5	16.6
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		816			179		2134			2017		
Approach Delay, s/veh		57.3			70.1		33.3			35.8		
Approach LOS		E			E		C			D		

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	11.1	69.2	28.0	23.3	57.0	12.6
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	67.3	24.5	24.5	51.3	7.4
Max Q Clear Time (g_c+1), s	6.5	34.4	21.8	17.3	38.7	6.7
Green Ext Time (p_c), s	0.0	2.6	0.6	0.5	2.7	0.0

Intersection Summary

HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Existing PM Mitigated  
9: Scottsdale Rd & Lincoln Dr

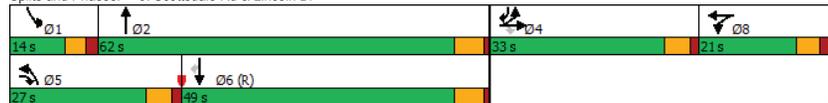
Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	461	54	385	54	60	373	1514	56	1461	449
Future Volume (vph)	461	54	385	54	60	373	1514	56	1461	449
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	10.0	5.0	10.0	7.0	7.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0	16.7	11.0	16.0	13.0	13.0
Total Split (s)	33.0	33.0	27.0	21.0	21.0	27.0	62.0	14.0	49.0	33.0
Total Split (%)	25.4%	25.4%	20.8%	16.2%	16.2%	20.8%	47.7%	10.8%	37.7%	25.4%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None						
Act Effct Green (s)	25.5	25.5	45.3	9.2	9.2	19.8	66.6	8.7	53.2	84.4
Actuated g/C Ratio	0.20	0.20	0.35	0.07	0.07	0.15	0.51	0.07	0.41	0.65
v/c Ratio	0.87	0.86	0.66	0.48	0.47	0.79	0.67	0.53	0.78	0.44
Control Delay	76.4	73.8	18.8	70.3	33.2	64.6	26.8	74.1	37.8	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	73.8	18.8	70.3	33.2	64.6	26.8	74.1	37.8	6.4
LOS	E	E	B	E	C	E	C	E	D	A
Approach Delay		51.0			44.3		34.1		31.7	
Approach LOS		D			D		C		C	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 36.6
Intersection Capacity Utilization 77.5%
ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Existing PM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	461	54	385	54	60	67	373	1514	44	56	1461	449
Future Volume (veh/h)	461	54	385	54	60	67	373	1514	44	56	1461	449
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	555	0	261	60	67	52	414	1682	38	62	1623	332
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	0	494	96	108	76	470	2188	49	79	1701	806
Arrive On Green	0.18	0.00	0.18	0.05	0.05	0.05	0.14	0.43	0.43	0.04	0.33	0.33
Sat Flow, veh/h	3563	0	1585	1781	1992	1403	3456	5137	116	1781	5106	1585
Grp Volume(v), veh/h	555	0	261	60	59	60	414	1114	606	62	1623	332
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1618	1728	1702	1849	1781	1702	1585
Q Serve(g_s), s	19.8	0.0	17.6	4.3	4.2	4.7	15.3	36.3	36.3	4.5	40.4	16.9
Cycle Q Clear(g_c), s	19.8	0.0	17.6	4.3	4.2	4.7	15.3	36.3	36.3	4.5	40.4	16.9
Prop In Lane	1.00		1.00	1.00		0.87	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	625	0	494	96	96	87	470	1450	788	79	1701	806
V/C Ratio(X)	0.89	0.00	0.53	0.62	0.61	0.69	0.88	0.77	0.77	0.78	0.95	0.41
Avail Cap(c_a), veh/h	754	0	551	211	210	192	572	1474	801	119	1701	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	36.9	60.2	60.2	60.4	55.1	31.8	31.8	61.5	42.4	19.9
Incr Delay (d2), s/veh	9.8	0.0	0.3	2.4	2.4	3.5	11.5	2.2	4.0	8.7	13.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.0	6.9	2.0	2.0	2.0	7.4	15.2	17.0	2.2	18.9	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	0.0	37.2	62.6	62.5	63.9	66.7	34.1	35.9	70.2	55.8	21.4
LnGrp LOS	E	A	D	E	E	E	E	C	D	E	E	C
Approach Vol, veh/h		816			179		2134			2017		
Approach Delay, s/veh		54.2			63.0		40.9			50.6		
Approach LOS		D			E		D			D		

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	11.1	61.1	28.3	23.2	49.0	12.6
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	56.3	27.5	21.5	43.3	15.4
Max Q Clear Time (g_c+1), s	6.5	38.3	21.8	17.3	42.4	6.7
Green Ext Time (p_c), s	0.0	2.6	1.0	0.4	0.5	0.3

Intersection Summary

HCM 6th Ctrl Delay	47.6
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX D**

### **TRIP GENERATION**

# Smoke Tree Resort

Proposed

CivTech Inc.

January 2020

## Methodology Overview

This form facilitates trip generation estimation using data within the Institute of Transportation Engineer's (ITE) *Trip Generation Manual*, 10th Edition and methodology described within ITE's *Trip Generation Handbook*, 3rd Edition. These references will be referred to as *Manual and Handbook*, respectively. The *Manual* contains data collected by various transportation professionals for a wide range of different land uses, with each land use category represented by a land use code (LUC). Average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized LUC in various settings and time periods. The *Handbook* indicates an established methodology for how to use data contained within the *Manual* when to use the fitted curve instead of the average rate and when to adjustments to the volume of trips are appropriate and how to do so. The methodology steps are represented visually in boxes in Figure 3.1. This worksheet applies calculations for each box if applicable.

## Box 1 - Define Study Site Land Use Type & Site Characteristics

The analyst is to pick an appropriate LUC(s) based on the subject's zoning/land use(s)/future land use(s). The size of the land use(s) is described in reference to an independent variable(s) specific to (each) the land use (example: 1,000 square feet of building area is relatively common).

### Land Use Types and Size

Proposed Use	Amount Units	ITE LUC	ITE Land Use Name
Main Hotel/Resort Villas	122 Rooms	310/330	Hotel/Resort Hotel
Stand Alone Restaurant	3,200 1,000 square feet	931	Quality Restaurant
Market/Coffee Shop	5,800 1,000 square feet	820	Shopping Center

## Box 4 - Is Study Site Multimodal?

Per the Handbook, "if the objective is to establish a local trip generation rate for a particular land use or study site, the simplified approach (Box 9) may be acceptable but the Box 5 through 8 approach is required if the study site is located in an infill setting, contains a mix of uses on-site, or is near significant transit service."

## Box 5/Box 9 - Estimate Baseline Trips/Estimate Vehicular Trips (Determine Equation)

Vehicle trips are estimated using rates/equations applicable to each LUC. When the appropriate graph has a fitted curve, the *Handbook* has a process (Figure 4.2) to determine when to use it versus using the weighted average rate or collecting local data. The methodology requires for engineering judgement in some circumstances and permits engineering judgement to override or make adjustments when appropriate to best project (example 1: study site is expected to operate differently than data in the applicable land use code - such as restaurant that is closed in the morning or in the evening; example 2: LUC data in a localized area fails to be represented by the typically selected fitted curve/weighted average rate - a small shop/LUC 820, AM peak hour is skewed by the high y-intercept).

### Equation Type: Equation Used [Equated Rate] (Type Abbreviations: Weighted Average Rate ("WA"), Fitted Curve ("FC"), or Custom ("C"))

Proposed Use	ADT	AM Peak Hour	PM Peak Hour	(not used)
Main Hotel/Resort Villas	C: $T=X*4.46$ [4.46]	C: $T=X*0.39$ [0.39]	C: $T=X*0.47$ [0.47]	
Stand Alone Restaurant	WA: $T=X*83.84$ [83.84]	WA: $T=X*0.73$ [0.73]	WA: $T=X*7.8$ [7.80]	
Market/Coffee Shop	WA: $T=X*37.75$ [37.75]	WA: $T=X*0.94$ [0.94]	WA: $T=X*3.81$ [3.81]	

## Box 5/Box 9 - Estimate Baseline Trips/Estimate Vehicular Trips (Apply Equations and in/out Distributions)

### Baseline Vehicular Trips

Proposed Use	ADT				AM Peak Hour				PM Peak Hour				(not used)
	% In	In	Out	Total	% In	In	Out	Total	% In	In	Out	Total	
Main Hotel/Resort Villas	50%	272	272	544	59%	28	20	48	51%	29	28	57	
Stand Alone Restaurant	50%	134	134	268	80%	2	0	2	67%	17	8	25	
Market/Coffee Shop	50%	109	109	218	62%	3	2	5	48%	11	11	22	
<b>Totals</b>		<b>515</b>	<b>515</b>	<b>1,030</b>		<b>33</b>	<b>22</b>	<b>55</b>		<b>57</b>	<b>47</b>	<b>104</b>	

### Adjustments for Internal Trips

Proposed Use	ADT				AM Peak Hour				PM Peak Hour				(not used)
	Percent	In	Out	Total	Percent	In	Out	Total	Percent	In	Out	Total	
Main Hotel/Resort Villas	0%	0	0	0	0%	0	0	0	0%	0	0	0	
Stand Alone Restaurant	50%	67	67	134	50%	1	0	1	50%	9	4	13	
Market/Coffee Shop	65%	71	71	142	65%	2	1	3	65%	7	7	14	
<b>Totals</b>		<b>138</b>	<b>138</b>	<b>276</b>		<b>3</b>	<b>1</b>	<b>4</b>		<b>16</b>	<b>11</b>	<b>27</b>	

### External Vehicular Trips

Proposed Use	ADT			AM Peak Hour			PM Peak Hour			(not used)
	In	Out	Total	In	Out	Total	In	Out	Total	
Main Hotel/Resort Villas	272	272	544	28	20	48	29	28	57	
Stand Alone Restaurant	67	67	134	1	0	1	8	4	12	
Market/Coffee Shop	38	38	76	1	1	2	4	4	8	
<b>Totals</b>	<b>377</b>	<b>377</b>	<b>754</b>	<b>30</b>	<b>21</b>	<b>51</b>	<b>41</b>	<b>36</b>	<b>77</b>	

## **APPENDIX E**

### **TRIP DISTRIBUTION**

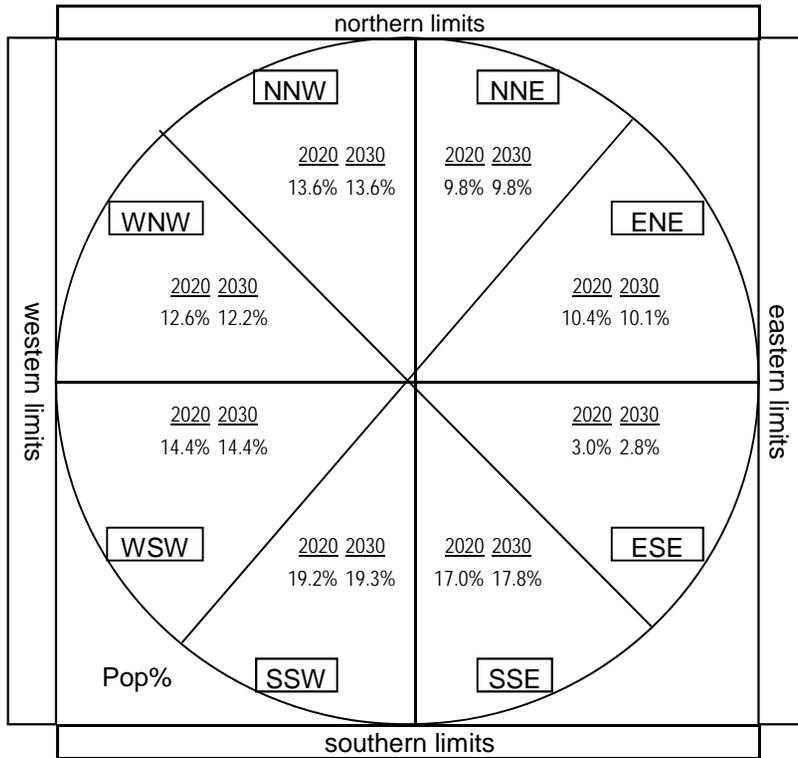
Quadrant	2020		2030	
	Population	Percent	Population	Percent
North Northwest	65,355	13.6%	70,346	13.6%
North Northeast	46,994	9.8%	50,587	9.8%
North	112,348	23.4%	120,934	<b>23.4%</b>
East Northeast	49,891	10.4%	52,124	10.1%
East Southeast	14,233	3.0%	14,712	2.8%
East	64,123	13.4%	66,836	<b>12.9%</b>
South Southeast	81,730	17.0%	92,480	17.8%
South Southwest	92,361	19.2%	99,928	19.3%
South	174,091	36.2%	192,407	<b>37.1%</b>
West Southwest	69,372	14.4%	74,834	14.4%
West Northwest	60,317	12.6%	63,387	12.2%
West	129,689	27.0%	138,221	<b>26.6%</b>
Totals	480,252	100.0%	518,398	100.0%

**Radius**

Population radius: 10 miles

**Select Analysis Year (2020, 2030, 2040,2050)**

2020











## **APPENDIX F**

### **BACKGROUND TRAFFIC**

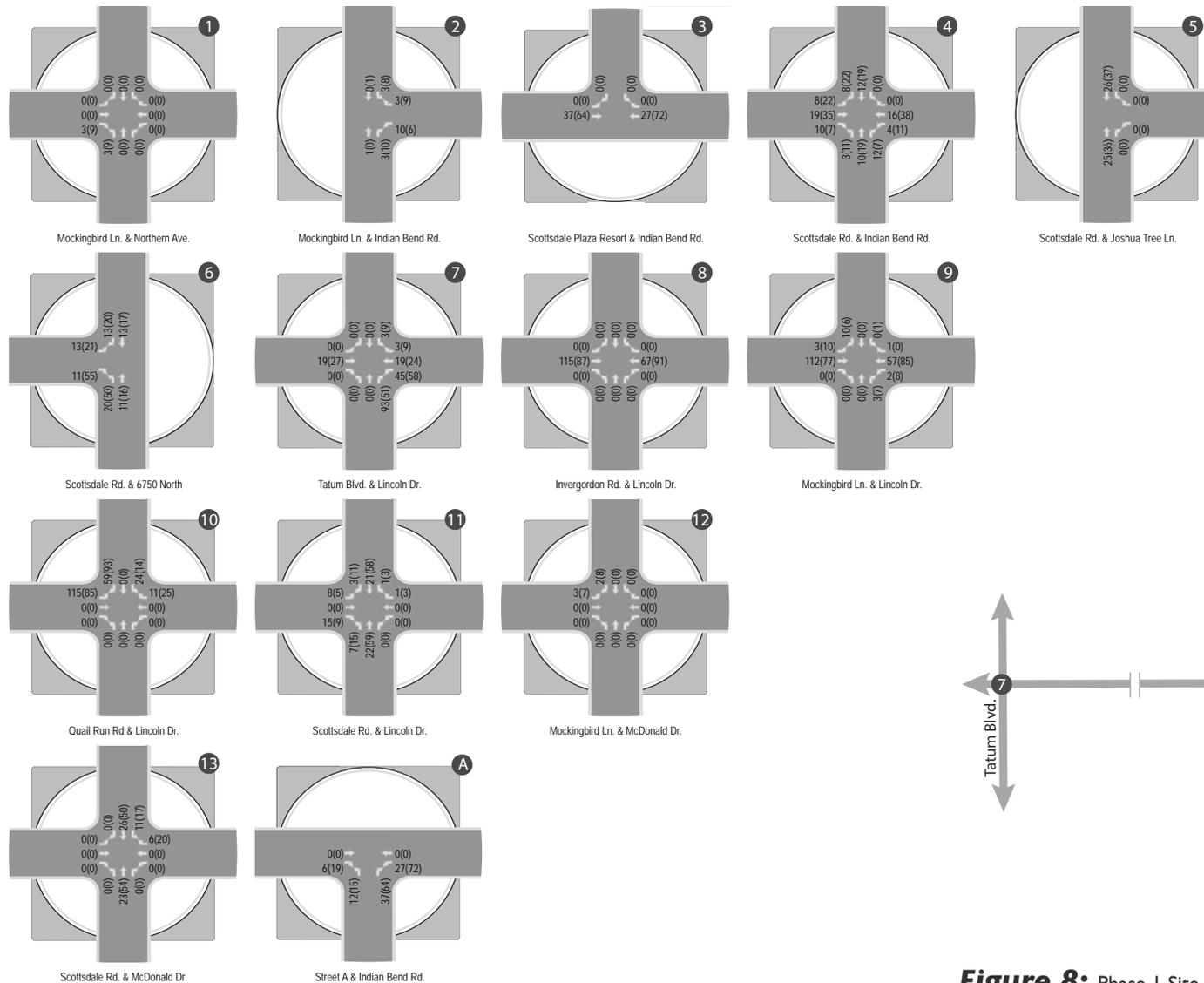
**Location of counts:** Scottsdale Road between Indian Bend and Lincoln

Source(s): <https://www.scottsdaleaz.gov/transportation/studies-reports/traffic-volume>

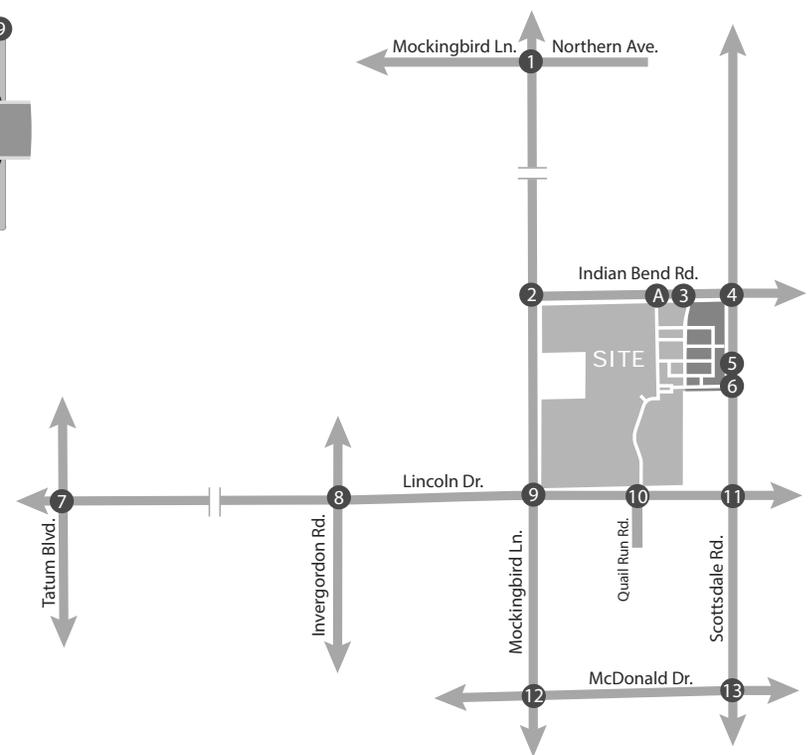
	Year	Volume	Avg Growth Rate to 2012	Expansion Factor to 2012
Beginning	2012	43,500		
End	2014	45,000	1.7%	0.967

Growth Rate Used            1.7%  
 Per-Year Multiplier        1.017

Year	Expansion Factor(s)	
2018	1.000	
2019	1.017	
2020	1.034	
<b>2021</b>	<b>1.052</b>	<- Expansion factor to opening
2022	1.070	
2023	1.088	
2024	1.106	
2025	1.125	
<b>2026</b>	<b>1.144</b>	<- Expansion factor to 5 years after opening
2027	1.164	
2028	1.184	
2029	1.204	
2030	1.224	
2031	1.245	
2032	1.266	
2033	1.288	
2034	1.310	
2035	1.332	
2036	1.354	
2037	1.378	
2038	1.401	



**LEGEND**  
 XX(XX) - AM(PM) Peak Hour Traffic Volumes



**Figure 8:** Phase I Site Generated Traffic Volumes without Palmeraie Access A

## **APPENDIX G**

### **2021 PEAK HOUR ANALYSIS SCENARIO 1**

Background 2021 AM  
1: Mockingbird Ln & Lincoln Drive

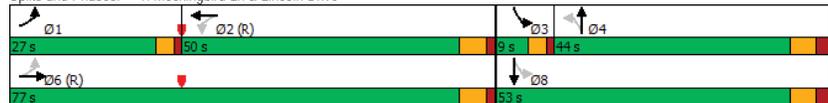
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖↗	↖	↖
Traffic Volume (vph)	226	969	22	900	5	35	74	92
Future Volume (vph)	226	969	22	900	5	35	74	92
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	93.5	91.5	68.9	68.9	18.8	18.8	28.5	26.0
Actuated g/C Ratio	0.72	0.70	0.53	0.53	0.14	0.14	0.22	0.20
v/c Ratio	0.60	0.43	0.10	0.53	0.11	0.21	0.32	0.83
Control Delay	14.8	9.6	34.0	37.4	49.2	33.6	42.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	9.6	34.0	37.4	49.2	33.6	42.8	50.2
LOS	B	A	C	D	D	C	D	D
Approach Delay		10.6		37.3		35.0		48.8
Approach LOS		B		D		D		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Background 2021 AM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖↗		↖	↖	↖
Traffic Volume (veh/h)	226	969	31	22	900	42	5	35	19	74	92	237
Future Volume (veh/h)	226	969	31	22	900	42	5	35	19	74	92	237
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	251	1077	34	24	1000	47	6	39	21	82	102	263
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	476	2474	78	311	2027	95	87	200	108	296	115	296
Arrive On Green	0.08	0.67	0.67	1.00	1.00	1.00	0.17	0.17	0.17	0.04	0.24	0.24
Sat Flow, veh/h	1688	3701	117	481	3637	171	963	1204	648	1688	487	1256
Grp Volume(v), veh/h	251	544	567	24	514	533	6	60	82	0	365	
Grp Sat Flow(s),veh/h/ln	1688	1870	1948	481	1870	1938	963	0	1852	1688	0	1743
Q Serve(g_s), s	7.9	17.7	17.7	0.3	0.0	0.0	0.8	0.0	3.6	5.0	0.0	26.3
Cycle Q Clear(g_c), s	7.9	17.7	17.7	3.5	0.0	0.0	18.1	0.0	3.6	5.0	0.0	26.3
Prop In Lane	1.00		0.06	1.00		0.09	1.00		0.35	1.00		0.72
Lane Grp Cap(c), veh/h	476	1250	1302	311	1042	1080	87	0	308	296	0	410
V/C Ratio(X)	0.53	0.44	0.44	0.08	0.49	0.49	0.07	0.00	0.20	0.28	0.00	0.89
Avail Cap(c_a), veh/h	638	1250	1302	311	1042	1080	205	0	534	296	0	623
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	10.1	10.1	0.1	0.0	0.0	61.2	0.0	46.7	41.9	0.0	48.1
Incr Delay (d2), s/veh	0.9	1.1	1.1	0.4	1.3	1.3	0.3	0.0	0.3	0.5	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.4	7.6	0.0	0.4	0.4	0.2	0.0	1.7	2.2	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	11.2	11.1	0.5	1.3	1.3	61.5	0.0	47.0	42.4	0.0	58.4
LnGrp LOS	B	B	B	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1362			1071			66				447
Approach Delay, s/veh		11.0			1.3			48.3				55.4
Approach LOS		B			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	14.5	78.4	9.0	28.1		92.9		37.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	9.9	5.5	7.0	20.1		19.7		28.3				
Green Ext Time (p_c), s	0.6	9.1	0.0	0.2		9.8		2.3				

Intersection Summary

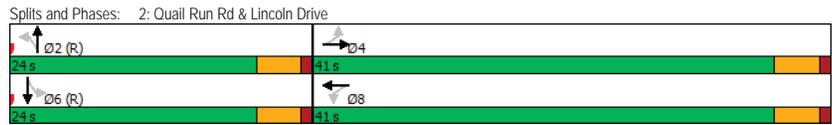
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Background 2021 AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↙	←	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations	↖	↕	↙	↕	↕	↘	↘
Traffic Volume (vph)	115	1012	2	862	0	26	0
Future Volume (vph)	115	1012	2	862	0	26	0
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	31.2	31.2	31.2	31.2	24.8	24.8	24.8
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38
v/c Ratio	0.68	0.66	0.01	0.57	0.01	0.16	0.16
Control Delay	39.4	18.8	9.0	15.5	0.0	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	18.8	9.0	15.5	0.0	7.8	7.8
LOS	D	B	A	B	A	A	A
Approach Delay		20.9		15.5		7.8	
Approach LOS		C		B		A	

Intersection Summary		
Cycle Length:	65	
Actuated Cycle Length:	65	
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBL, Start of Green	
Natural Cycle:	60	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.68	
Intersection Signal Delay:	18.0	Intersection LOS: B
Intersection Capacity Utilization	55.6%	ICU Level of Service B
Analysis Period (min)	15	



Background 2021 AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↙	↘	←	↖	↙	↑	↘	↙	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↙	↕			↕		↘	↘	
Traffic Volume (veh/h)	115	1012	3	2	862	12	0	0	7	26	0	65
Future Volume (veh/h)	115	1012	3	2	862	12	0	0	7	26	0	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1124	3	2	958	13	0	0	8	29	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1505	4	247	1486	20	0	0	709	235	36	495
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.00	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	579	3636	10	500	3590	49	0	0	1585	365	81	1106
Grp Volume(v), veh/h	128	549	578	2	474	497	0	0	8	101	0	0
Grp Sat Flow(s),veh/h/ln	579	1777	1869	500	1777	1862	0	0	1585	1551	0	0
Q Serve(g_s), s	9.6	9.1	9.1	0.1	6.4	6.4	0.0	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	9.1	9.1	9.3	6.4	6.4	0.0	0.0	0.2	2.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.03	0.00		1.00	0.29		0.71
Lane Grp Cap(c), veh/h	293	736	774	247	736	771	0	0	709	766	0	0
V/C Ratio(X)	0.44	0.75	0.75	0.01	0.64	0.64	0.00	0.00	0.01	0.13	0.00	0.00
Avail Cap(c_a), veh/h	378	998	1049	321	998	1045	0	0	709	766	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	4.1	4.1	6.2	3.8	3.8	0.0	0.0	10.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	1.9	1.8	0.0	1.0	0.9	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.8	1.8	0.0	1.4	1.4	0.0	0.0	0.1	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	6.0	5.9	6.2	4.8	4.7	0.0	0.0	10.0	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1255			973			8				101
Approach Delay, s/veh		6.1			4.8			10.0				10.9
Approach LOS		A			A			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.7		31.3		33.7		31.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.2		18.0		4.3		11.3				
Green Ext Time (p_c), s		0.0		8.7		0.4		7.0				

Intersection Summary		
HCM 6th Ctrl Delay	5.8	
HCM 6th LOS	A	

Background 2021 AM  
3: Shared Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1042	6	5	872	0	6
Future Vol, veh/h	1042	6	5	872	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1158	7	6	969	0	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1165	0	1659
Stage 1	-	-	-	-	1162
Stage 2	-	-	-	-	497
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	945	-	*88
Stage 1	-	-	-	-	*583
Stage 2	-	-	-	-	*675
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	945	-	*87
Mov Cap-2 Maneuver	-	-	-	-	*323
Stage 1	-	-	-	-	*579
Stage 2	-	-	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	945	-
HCM Lane V/C Ratio	0.01	-	-	0.006	-
HCM Control Delay (s)	10.3	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2021 AM  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	0	7	0	0	5
Future Vol, veh/h	0	0	7	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	8	0	0	6

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	14	8	0	0	8
Stage 1	8	-	-	-	-
Stage 2	6	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	1005	1074	-	-	1612
Stage 1	1015	-	-	-	-
Stage 2	1017	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1005	1074	-	-	1612
Mov Cap-2 Maneuver	1005	-	-	-	-
Stage 1	1015	-	-	-	-
Stage 2	1017	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1612	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-

Background 2021 AM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	26	983	34	18	807	10	50	0	29	5	0	12
Future Vol, veh/h	26	983	34	18	807	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1092	38	20	897	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	908	0	0	1130
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1112	-	-	990
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1112	-	-	990
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	17.3	11.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	380	1112	-	-	990	-	-	308	763
HCM Lane V/C Ratio	0.231	0.026	-	-	0.02	-	-	0.018	0.017
HCM Control Delay (s)	17.3	8.3	-	-	8.7	-	-	16.9	9.8
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Background 2021 AM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	3	962	53	43	820	8	6	0	41	4	1	12
Future Vol, veh/h	3	962	53	43	820	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1069	59	48	911	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	920	0	0	1128
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	993
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	993
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.6	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	598	1106	-	-	993	-	-	298	739
HCM Lane V/C Ratio	0.087	0.003	-	-	0.048	-	-	0.015	0.018
HCM Control Delay (s)	11.6	8.3	-	-	8.8	-	-	17.3	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

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

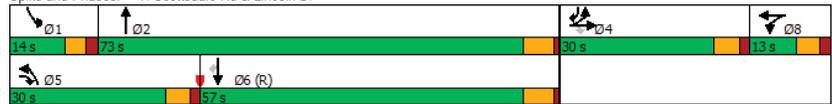
Background 2021 AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	452	39	463	38	37	281	1338	51	1698	589
Future Volume (vph)	452	39	463	38	37	281	1338	51	1698	589
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	C-Max	None	None
Act Effct Green (s)	23.6	23.6	42.3	7.4	7.4	18.7	71.3	7.6	58.0	87.3
Actuated g/C Ratio	0.18	0.18	0.33	0.06	0.06	0.14	0.55	0.06	0.45	0.67
v/c Ratio	0.89	0.89	0.91	0.42	0.40	0.63	0.55	0.55	0.83	0.58
Control Delay	64.4	64.1	51.2	72.4	33.9	57.7	20.7	79.0	36.8	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	64.1	51.2	72.4	33.9	57.7	20.7	79.0	36.8	10.3
LOS	E	E	D	E	C	E	C	E	D	B
Approach Delay		57.9			45.8		26.9		31.0	
Approach LOS		E			D		C		C	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	35.1
Intersection Capacity Utilization:	81.6%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Background 2021 AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	452	39	463	38	37	48	281	1338	40	51	1698	589
Future Volume (veh/h)	452	39	463	38	37	48	281	1338	40	51	1698	589
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	533	0	270	42	41	36	312	1487	33	57	1887	365
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	0	439	101	108	84	372	2377	53	73	2015	894
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.11	0.46	0.46	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1900	1480	3456	5140	114	1781	5106	1585
Grp Volume(v), veh/h	533	0	270	42	38	39	312	985	535	57	1887	365
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1604	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	19.0	0.0	19.3	3.0	2.7	3.1	11.5	28.4	28.4	4.1	46.1	17.0
Cycle Q Clear(g_c), s	19.0	0.0	19.3	3.0	2.7	3.1	11.5	28.4	28.4	4.1	46.1	17.0
Prop In Lane	1.00		1.00	1.00		0.92	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	603	0	439	101	101	91	372	1575	856	73	2015	894
V/C Ratio(X)	0.88	0.00	0.62	0.41	0.38	0.43	0.84	0.63	0.63	0.78	0.94	0.41
Avail Cap(c_a), veh/h	671	0	469	101	101	91	651	1762	958	119	2015	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	41.0	59.2	59.1	59.3	56.9	26.4	26.4	61.7	37.8	16.1
Incr Delay (d2), s/veh	11.6	0.0	1.4	1.0	0.9	1.2	2.0	0.4	0.7	6.5	9.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	7.7	1.4	1.2	1.3	5.1	11.5	12.6	2.0	20.8	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	42.4	60.2	59.9	60.4	58.9	26.8	27.1	68.2	47.6	17.4
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		803			119		1832			2309		
Approach Delay, s/veh		57.0			60.2		32.3			43.3		
Approach LOS		E			E		C			D		

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	10.6 65.8 27.5 19.5 57.0 13.0
Change Period (Y+Rc), s	* 5.3 5.7 5.5 5.5 5.7 5.6
Max Green Setting (Gmax), s	* 8.7 67.3 24.5 24.5 51.3 7.4
Max Q Clear Time (g_c+I), s	6.1 30.4 21.3 13.5 48.1 5.1
Green Ext Time (p_c), s	0.0 2.2 0.7 0.5 1.6 0.1

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Smoke Tree Resort  
Background 2021 PM

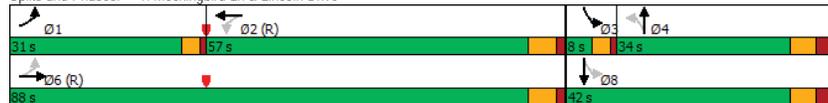
1: Mockingbird Ln & Lincoln Drive  
Timings

	↖	→	↙	←	↘	↑	↗	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↙	↖↗	↘	↘	↖	↖
Traffic Volume (vph)	250	881	21	932	7	63	61	48
Future Volume (vph)	250	881	21	932	7	63	61	48
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	101.1	99.1	77.0	77.0	12.0	12.0	20.9	18.4
Actuated g/C Ratio	0.78	0.76	0.59	0.59	0.09	0.09	0.16	0.14
v/c Ratio	0.60	0.38	0.07	0.53	0.10	0.51	0.38	0.67
Control Delay	11.5	6.0	31.9	39.4	55.1	60.0	52.2	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	6.0	31.9	39.4	55.1	60.0	52.2	32.7
LOS	B	A	C	D	E	E	D	C
Approach Delay		7.2		39.3		59.6		37.1
Approach LOS		A		D		E		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Smoke Tree Resort  
Background 2021 PM

1: Mockingbird Ln & Lincoln Drive  
HCM 6th Signalized Intersection Summary

	↖	→	↙	←	↘	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↙	↖↗		↘	↘		↖	↖	
Traffic Volume (veh/h)	250	881	29	21	932	59	7	63	18	61	48	159
Future Volume (veh/h)	250	881	29	21	932	59	7	63	18	61	48	159
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	979	21	23	1036	38	8	70	11	68	53	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	526	2723	58	431	2332	86	101	121	19	155	70	160
Arrive On Green	0.07	0.77	0.77	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3557	76	563	3496	128	1211	1578	248	1781	506	1156
Grp Volume(v), veh/h	278	489	511	23	527	547	8	0	81	68	0	174
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	563	1777	1847	1211	0	1826	1781	0	1662
Q Serve(g_s), s	6.0	11.6	11.6	0.0	0.0	0.0	0.8	0.0	5.6	4.0	0.0	13.1
Cycle Q Clear(g_c), s	6.0	11.6	11.6	0.0	0.0	0.0	5.9	0.0	5.6	4.0	0.0	13.1
Prop In Lane	1.00		0.04	1.00		0.07	1.00		0.14	1.00		0.70
Lane Grp Cap(c), veh/h	526	1360	1421	431	1185	1232	101	0	140	155	0	230
V/C Ratio(X)	0.53	0.36	0.36	0.05	0.44	0.44	0.08	0.00	0.58	0.44	0.00	0.76
Avail Cap(c_a), veh/h	776	1360	1421	431	1185	1232	264	0	386	155	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.71	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	4.9	4.9	0.0	0.0	0.0	60.6	0.0	58.0	53.0	0.0	53.9
Incr Delay (d2), s/veh	0.8	0.7	0.7	0.2	0.9	0.8	0.3	0.0	3.7	1.9	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.0	4.2	0.0	0.3	0.3	0.3	0.0	2.7	0.3	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	5.7	5.6	0.2	0.9	0.8	60.9	0.0	61.7	55.0	0.0	58.9
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	E
Approach Vol, veh/h		1278			1097			89				242
Approach Delay, s/veh		5.7			0.8			61.6				57.8
Approach LOS		A			A			E				E

Timer - Assigned Phs	1	2	3	4	6	8
Phs Duration (G+Y+Rc), s	12.8	92.7	8.0	16.5	105.5	24.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	6.0	6.5
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5	82.0	35.5
Max Q Clear Time (g_c+I), s	8.0	2.0	6.0	7.9	13.6	15.1
Green Ext Time (p_c), s	0.8	9.6	0.0	0.4	8.4	0.9

Intersection Summary

HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Smoke Tree Resort  
Background 2021 PM

2: Quail Run Rd & Lincoln Drive  
Timings

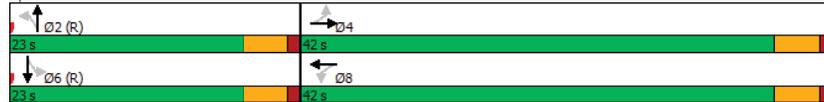


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations	↔	↕↕	↕↕	↕	↔	↕↕
Traffic Volume (vph)	85	890	916	0	14	0
Future Volume (vph)	85	890	916	0	14	0
Turn Type	Perm	NA	NA	NA	Perm	NA
Protected Phases		4	8	2		6
Permitted Phases	4				6	
Detector Phase	4	4	8	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	29.3	29.3	29.3	26.7	26.7	26.7
Actuated g/C Ratio	0.45	0.45	0.45	0.41	0.41	0.41
v/c Ratio	0.66	0.62	0.66	0.00	0.17	0.17
Control Delay	41.3	19.0	17.7	0.0	5.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	19.0	17.7	0.0	5.8	5.8
LOS	D	B	B	A	A	A
Approach Delay		20.9	17.7		5.8	
Approach LOS		C	B		A	

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 18.6	Intersection LOS: B
Intersection Capacity Utilization 55.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Smoke Tree Resort  
Background 2021 PM

2: Quail Run Rd & Lincoln Drive  
HCM 6th Signalized Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕		↔	↕↕			↕↕		↔	↕↕	
Traffic Volume (veh/h)	85	890	1	0	916	25	0	0	2	14	0	93
Future Volume (veh/h)	85	890	1	0	916	25	0	0	2	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	989	1	0	1018	28	0	0	2	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	1488	2	111	1443	40	0	0	718	121	38	620
Arrive On Green	0.82	0.82	0.82	0.00	0.82	0.82	0.00	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	539	3643	4	569	3533	97	0	0	1585	129	84	1370
Grp Volume(v), veh/h	94	482	508	0	512	534	0	0	2	119	0	0
Grp Sat Flow(s),veh/h/ln	539	1777	1870	569	1777	1853	0	0	1585	1582	0	0
Q Serve(g_s), s	7.8	7.1	7.1	0.0	8.1	8.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.4	7.1	7.1	0.0	8.1	8.1	0.0	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.05	0.00		1.00	0.13		0.87
Lane Grp Cap(c), veh/h	260	726	764	111	726	757	0	0	718	780	0	0
V/C Ratio(X)	0.36	0.66	0.66	0.00	0.71	0.71	0.00	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	351	1025	1079	207	1025	1069	0	0	718	780	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	4.2	4.2	0.0	4.3	4.3	0.0	0.0	9.7	10.5	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	0.9	0.0	1.3	1.2	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.5	0.0	1.6	1.7	0.0	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	5.1	5.1	0.0	5.5	5.5	0.0	0.0	9.7	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1084			1046			2			119	
Approach Delay, s/veh		5.4			5.5			9.7			10.9	
Approach LOS		A			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.3		30.7		34.3		30.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		37.5		18.5		37.5				
Max Q Clear Time (g_c+I), s		2.0		18.4		4.8		10.1				
Green Ext Time (p_c), s		0.0		7.5		0.5		7.9				

Intersection Summary

HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A

Smoke Tree Resort  
Background 2021 PM

3: Shared Access A & Lincoln Dr  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	906	0	0	940	4	3
Future Vol, veh/h	906	0	0	940	4	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1007	0	0	1044	4	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1007	0
Stage 1	-	-	-	1007
Stage 2	-	-	-	522
Critical Hdwy	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-
Pot Cap-1 Maneuver	-	-	1049	-
Stage 1	-	-	-	*651
Stage 2	-	-	-	*652
Platoon blocked, %	-	-	1	-
Mov Cap-1 Maneuver	-	-	1049	-
Mov Cap-2 Maneuver	-	-	-	*347
Stage 1	-	-	-	*651
Stage 2	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	-	-	1049	-
HCM Lane V/C Ratio	0.017	-	-	-	-
HCM Control Delay (s)	13.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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

Smoke Tree Resort  
Background 2021 PM

4: Quail Run Rd & Access B  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	0	2	0	0	1
Future Vol, veh/h	0	0	2	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	2	0	0	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	3	2	0
Stage 1	2	-	-
Stage 2	1	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	1019	1082	-
Stage 1	1021	-	-
Stage 2	1022	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1019	1082	-
Mov Cap-2 Maneuver	1019	-	-
Stage 1	1021	-	-
Stage 2	1022	-	-

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

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1620	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Smoke Tree Resort  
Background 2021 PM

7: Apartment Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗			↖ ↗		↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	7	847	41	6	842	9	66	3	47	7	0	34
Future Vol, veh/h	7	847	41	6	842	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	941	46	7	936	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	946	0	0	987
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	1075
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	1075
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	16.8	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	433	*1106	-	-	1075	-	-	338	739
HCM Lane V/C Ratio	0.298	0.007	-	-	0.006	-	-	0.023	0.051
HCM Control Delay (s)	16.8	8.3	-	-	8.4	-	-	15.9	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.1	0.2

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

Smoke Tree Resort  
Background 2021 PM

8: AJ's Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗		↖ ↗	↖ ↗			↖ ↗		↖ ↗	↖ ↗	↖ ↗
Traffic Vol, veh/h	11	841	53	61	840	8	14	1	89	4	0	7
Future Vol, veh/h	11	841	53	61	840	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	934	59	68	933	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	942	0	0	993
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	1067
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	1067
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.2	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	618	*1106	-	-	1067	-	-	271	739
HCM Lane V/C Ratio	0.187	0.011	-	-	0.064	-	-	0.016	0.011
HCM Control Delay (s)	12.2	8.3	-	-	8.6	-	-	18.5	9.9
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Smoke Tree Resort  
Background 2021 PM

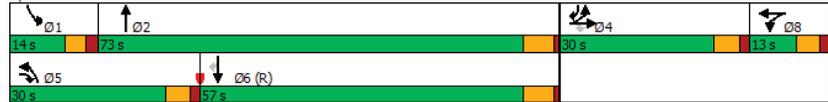
9: Scottsdale Rd & Lincoln Dr  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	490	57	414	57	63	407	1652	62	1595	483
Future Volume (vph)	490	57	414	57	63	407	1652	62	1595	483
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	13.0	13.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None						
Act Effct Green (s)	24.5	24.5	45.6	7.4	7.4	21.1	70.3	7.9	54.7	84.9
Actuated g/C Ratio	0.19	0.19	0.35	0.06	0.06	0.16	0.54	0.06	0.42	0.65
v/c Ratio	0.97	0.94	0.77	0.63	0.58	0.81	0.69	0.64	0.83	0.50
Control Delay	79.3	74.4	34.3	86.9	37.8	64.3	24.1	86.0	38.2	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.3	74.4	34.3	86.9	37.8	64.3	24.1	86.0	38.2	11.2
LOS	E	E	C	F	D	E	C	F	D	B
Approach Delay		58.5			52.3		31.9		33.5	
Approach LOS		E			D		C		C	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Smoke Tree Resort  
Background 2021 PM

9: Scottsdale Rd & Lincoln Dr  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	490	57	414	57	63	73	407	1652	46	62	1595	483
Future Volume (veh/h)	490	57	414	57	63	73	407	1652	46	62	1595	483
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	589	0	238	63	70	59	452	1836	40	69	1772	270
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	643	0	520	101	109	83	511	2543	55	88	2015	912
Arrive On Green	0.18	0.00	0.18	0.06	0.06	0.06	0.15	0.49	0.49	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1922	1462	3456	5142	112	1781	5106	1585
Grp Volume(v), veh/h	589	0	238	63	64	65	452	1215	661	69	1772	270
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1607	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	21.1	0.0	15.4	4.5	4.6	5.2	16.7	36.5	36.5	5.0	41.8	11.3
Cycle Q Clear(g_c), s	21.1	0.0	15.4	4.5	4.6	5.2	16.7	36.5	36.5	5.0	41.8	11.3
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	643	0	520	101	101	91	511	1684	915	88	2015	912
V/C Ratio(X)	0.92	0.00	0.46	0.62	0.63	0.71	0.89	0.72	0.72	0.79	0.88	0.30
Avail Cap(c_a), veh/h	671	0	533	101	101	91	651	1762	958	119	2015	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	34.5	59.9	60.0	60.2	54.3	25.8	25.8	61.1	36.5	14.1
Incr Delay (d2), s/veh	16.4	0.0	0.2	8.4	9.6	19.5	10.0	1.2	2.2	14.7	5.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.0	6.0	2.3	2.3	2.6	8.0	14.8	16.4	2.6	18.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	0.0	34.7	68.4	69.5	79.7	64.3	27.0	28.0	75.8	42.4	15.0
LnGrp LOS	E	A	C	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		827			192		2328			2111		
Approach Delay, s/veh		59.0			72.6		34.5			40.0		
Approach LOS		E			E		C			D		

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	11.7	70.0	29.0	24.7	57.0	13.0
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	67.3	24.5	24.5	51.3	7.4
Max Q Clear Time (g_c+I), s	7.0	38.5	23.1	18.7	43.8	7.2
Green Ext Time (p_c), s	0.0	3.0	0.4	0.5	2.5	0.0

Intersection Summary

HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 AM  
1: Mockingbird Ln & Lincoln Drive

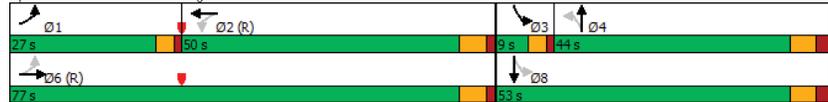
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	226	976	23	905	5	35	76	92
Future Volume (vph)	226	976	23	905	5	35	76	92
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	93.5	91.5	68.9	68.9	17.1	17.1	28.5	26.0
Actuated g/C Ratio	0.72	0.70	0.53	0.53	0.13	0.13	0.22	0.20
v/c Ratio	0.60	0.43	0.11	0.54	0.10	0.23	0.32	0.83
Control Delay	15.1	9.6	33.8	37.3	47.8	33.6	42.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	9.6	33.8	37.3	47.8	33.6	42.8	50.2
LOS	B	A	C	D	D	C	D	D
Approach Delay		10.6		37.2		34.9		48.8
Approach LOS		B		D		C		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Total 2021 AM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	226	976	31	23	905	43	5	35	20	76	92	237
Future Volume (veh/h)	226	976	31	23	905	43	5	35	20	76	92	237
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	251	1084	34	26	1006	48	6	39	22	84	102	263
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	2475	78	309	2025	97	87	196	111	295	115	296
Arrive On Green	0.08	0.67	0.67	1.00	1.00	1.00	0.17	0.17	0.17	0.04	0.24	0.24
Sat Flow, veh/h	1688	3702	116	477	3635	173	963	1182	667	1688	487	1256
Grp Volume(v), veh/h	251	548	570	26	518	536	6	0	61	84	0	365
Grp Sat Flow(s),veh/h/ln	1688	1870	1948	477	1870	1938	963	0	1849	1688	0	1743
Q Serve(g_s), s	7.9	17.8	17.8	0.4	0.0	0.0	0.8	0.0	3.7	5.0	0.0	26.3
Cycle Q Clear(g_c), s	7.9	17.8	17.8	3.7	0.0	0.0	18.1	0.0	3.7	5.0	0.0	26.3
Prop In Lane	1.00		0.06	1.00		0.09	1.00		0.36	1.00		0.72
Lane Grp Cap(c), veh/h	474	1250	1302	309	1042	1080	87	0	307	295	0	410
V/C Ratio(X)	0.53	0.44	0.44	0.08	0.50	0.50	0.07	0.00	0.20	0.28	0.00	0.89
Avail Cap(c_a), veh/h	637	1250	1302	309	1042	1080	205	0	533	295	0	623
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	10.1	10.1	0.1	0.0	0.0	61.2	0.0	46.7	42.0	0.0	48.1
Incr Delay (d2), s/veh	0.9	1.1	1.1	0.4	1.4	1.3	0.3	0.0	0.3	0.5	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.4	7.7	0.0	0.4	0.4	0.2	0.0	1.7	2.3	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	11.2	11.2	0.5	1.4	1.3	61.5	0.0	47.1	42.6	0.0	58.4
LnGrp LOS	B	B	B	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1369			1080			67				449
Approach Delay, s/veh		11.0			1.3			48.4				55.4
Approach LOS		B			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	14.5	78.4	9.0	28.1		92.9		37.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	9.9	5.7	7.0	20.1		19.8		28.3				
Green Ext Time (p_c), s	0.6	9.2	0.0	0.2		9.9		2.3				

Intersection Summary

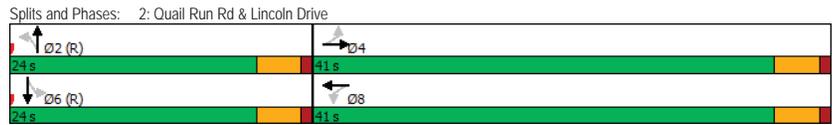
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Total 2021 AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖↗	↖	↖↗
Traffic Volume (vph)	115	1018	6	866	3	0	26	0
Future Volume (vph)	115	1018	6	866	3	0	26	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	31.4	31.4	31.4	31.4	24.6	24.6	24.6	24.6
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38
v/c Ratio	0.68	0.67	0.05	0.57	0.02	0.16	0.16	0.16
Control Delay	38.8	18.7	9.7	15.3	5.1	7.8	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	18.7	9.7	15.3	5.1	7.8	7.8	7.8
LOS	D	B	A	B	A	A	A	A
Approach Delay		20.7		15.3		5.1		7.8
Approach LOS		C		B		A		A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	17.8
Intersection Capacity Utilization:	51.7%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	A



Total 2021 AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖↗			↖	↖↗
Traffic Volume (veh/h)	115	1018	7	6	866	12	3	0	10	26	0	65
Future Volume (veh/h)	115	1018	7	6	866	12	3	0	10	26	0	65
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1131	8	7	962	13	3	0	11	29	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1501	11	245	1490	20	177	38	544	234	36	493
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	577	3617	26	494	3590	49	246	86	1218	364	81	1105
Grp Volume(v), veh/h	128	556	583	7	476	499	14	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	577	1777	1866	494	1777	1862	1551	0	0	1550	0	0
Q Serve(g_s), s	9.5	9.2	9.2	0.4	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	9.2	9.2	9.7	6.4	6.4	0.3	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.03	0.21		0.79	0.29		0.71
Lane Grp Cap(c), veh/h	293	737	774	245	737	773	760	0	0	763	0	0
V/C Ratio(X)	0.44	0.75	0.75	0.03	0.65	0.65	0.02	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	378	998	1048	317	998	1045	760	0	0	763	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	4.0	4.0	6.2	3.8	3.8	10.0	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	2.0	1.9	0.0	1.0	0.9	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.8	1.8	0.0	1.3	1.4	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	6.0	6.0	6.3	4.7	4.7	10.1	0.0	0.0	11.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1267			982			14				101
Approach Delay, s/veh		6.2			4.7			10.1				11.0
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.6		31.4		33.6		31.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.3		18.0		4.3		11.7				
Green Ext Time (p_c), s		0.0		8.8		0.4		7.1				

Intersection Summary	
HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A

Total 2021 AM  
3: Shared Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1045	12	21	876	4	17
Future Vol, veh/h	1045	12	21	876	4	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1161	13	23	973	4	19

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1174	0	1701
Stage 1	-	-	-	-	1168
Stage 2	-	-	-	-	533
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*952	-	*83
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*952	-	*81
Mov Cap-2 Maneuver	-	-	-	-	*319
Stage 1	-	-	-	-	*586
Stage 2	-	-	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	535	-	-	*952	-
HCM Lane V/C Ratio	0.044	-	-	0.025	-
HCM Control Delay (s)	12	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

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

Total 2021 AM  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	6	7	0	8	5
Future Vol, veh/h	0	6	7	0	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	8	0	9	6

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	32	8	0	0	8
Stage 1	8	-	-	-	-
Stage 2	24	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	982	1074	-	-	1612
Stage 1	1015	-	-	-	-
Stage 2	999	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	976	1074	-	-	1612
Mov Cap-2 Maneuver	976	-	-	-	-
Stage 1	1009	-	-	-	-
Stage 2	999	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	4.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1074	1612
HCM Lane V/C Ratio	-	-	0.006	0.006
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Total 2021 AM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	997	34	18	827	10	50	0	29	5	0	12
Future Vol, veh/h	26	997	34	18	827	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1108	38	20	919	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	930	0	0	1146
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	969
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	969
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	17.8	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	369	*1106	-	-	969	-	-	313	739
HCM Lane V/C Ratio	0.238	0.026	-	-	0.021	-	-	0.018	0.018
HCM Control Delay (s)	17.8	8.3	-	-	8.8	-	-	16.7	10
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Total 2021 AM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	976	53	43	840	8	6	0	41	4	1	12
Future Vol, veh/h	3	976	53	43	840	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1084	59	48	933	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	942	0	0	1143
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	973
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	973
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.6	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	595	*1106	-	-	973	-	-	291	739
HCM Lane V/C Ratio	0.088	0.003	-	-	0.049	-	-	0.015	0.018
HCM Control Delay (s)	11.6	8.3	-	-	8.9	-	-	17.6	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

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

Total 2021 AM  
9: Scottsdale Rd & Lincoln Dr

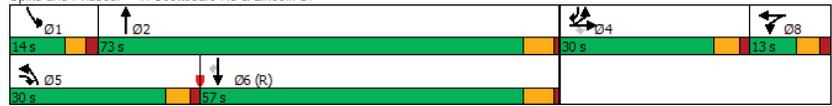
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Future Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	None	C-Max	None
Act Effct Green (s)	23.8	23.8	42.8	7.4	7.4	19.1	71.2	7.6	57.5	86.9
Actuated g/C Ratio	0.18	0.18	0.33	0.06	0.06	0.15	0.55	0.06	0.44	0.67
v/c Ratio	0.90	0.90	0.92	0.42	0.40	0.64	0.55	0.55	0.84	0.59
Control Delay	66.6	66.0	51.5	72.4	33.9	57.5	20.7	79.0	37.4	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	66.0	51.5	72.4	33.9	57.5	20.7	79.0	37.4	10.9
LOS	E	E	D	E	C	E	C	E	D	B
Approach Delay		59.1			45.8		27.1		31.6	
Approach LOS		E			D		C		C	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 35.7	Intersection LOS: D
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Future Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	542	0	277	42	41	36	322	1487	33	57	1887	378
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	613	0	448	101	108	84	382	2392	53	73	2015	898
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.11	0.47	0.47	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1900	1480	3456	5140	114	1781	5106	1585
Grp Volume(v), veh/h	542	0	277	42	38	39	322	985	535	57	1887	378
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1604	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	19.3	0.0	19.7	3.0	2.7	3.1	11.9	28.3	28.3	4.1	46.1	17.6
Cycle Q Clear(g_c), s	19.3	0.0	19.7	3.0	2.7	3.1	11.9	28.3	28.3	4.1	46.1	17.6
Prop In Lane	1.00		1.00	1.00		0.92	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	613	0	448	101	101	91	382	1584	861	73	2015	898
V/C Ratio(X)	0.88	0.00	0.62	0.41	0.38	0.43	0.84	0.62	0.62	0.78	0.94	0.42
Avail Cap(c_a), veh/h	671	0	474	101	101	91	651	1762	958	119	2015	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	40.5	59.2	59.1	59.3	56.7	26.1	26.1	61.7	37.8	16.0
Incr Delay (d2), s/veh	11.7	0.0	1.5	1.0	0.9	1.2	2.0	0.4	0.6	6.5	9.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	7.9	1.4	1.2	1.3	5.3	11.4	12.5	2.0	20.8	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	42.1	60.2	59.9	60.4	58.7	26.5	26.8	68.2	47.6	17.5
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		819			119			1842			2322	
Approach Delay, s/veh		56.8			60.2			32.2			43.2	
Approach LOS		E			E			C			D	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	10.6	66.2	27.9	19.9	57.0	13.0
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	67.3	24.5	24.5	51.3	7.4
Max Q Clear Time (g_c+I1), s	6.1	30.3	21.7	13.9	48.1	5.1
Green Ext Time (p_c), s	0.0	2.2	0.6	0.5	1.6	0.1

Intersection Summary

HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 AM Mitigated  
1: Mockingbird Ln & Lincoln Drive

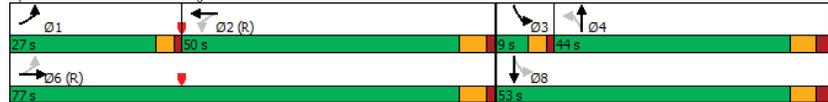
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	226	976	23	905	5	35	76	92
Future Volume (vph)	226	976	23	905	5	35	76	92
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	93.5	91.5	68.9	68.9	17.1	17.1	28.5	26.0
Actuated g/C Ratio	0.72	0.70	0.53	0.53	0.13	0.13	0.22	0.20
v/c Ratio	0.60	0.43	0.11	0.54	0.10	0.23	0.32	0.83
Control Delay	15.1	9.6	34.7	37.5	47.8	33.6	42.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	9.6	34.7	37.5	47.8	33.6	42.8	50.2
LOS	B	A	C	D	D	C	D	D
Approach Delay		10.6		37.4		34.9		48.8
Approach LOS		B		D		C		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Total 2021 AM Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	226	976	31	23	905	43	5	35	20	76	92	237
Future Volume (veh/h)	226	976	31	23	905	43	5	35	20	76	92	237
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	251	1084	34	26	1006	48	6	39	22	84	102	263
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	2475	78	309	2025	97	87	196	111	295	115	296
Arrive On Green	0.08	0.67	0.67	1.00	1.00	1.00	0.17	0.17	0.17	0.04	0.24	0.24
Sat Flow, veh/h	1688	3702	116	477	3635	173	963	1182	667	1688	487	1256
Grp Volume(v), veh/h	251	548	570	26	518	536	6	0	61	84	0	365
Grp Sat Flow(s),veh/h/ln	1688	1870	1948	477	1870	1938	963	0	1849	1688	0	1743
Q Serve(g_s), s	7.9	17.8	17.8	0.4	0.0	0.0	0.8	0.0	3.7	5.0	0.0	26.3
Cycle Q Clear(g_c), s	7.9	17.8	17.8	3.7	0.0	0.0	18.1	0.0	3.7	5.0	0.0	26.3
Prop In Lane	1.00		0.06	1.00		0.09	1.00		0.36	1.00		0.72
Lane Grp Cap(c), veh/h	474	1250	1302	309	1042	1080	87	0	307	295	0	410
V/C Ratio(X)	0.53	0.44	0.44	0.08	0.50	0.50	0.07	0.00	0.20	0.28	0.00	0.89
Avail Cap(c_a), veh/h	637	1250	1302	309	1042	1080	205	0	533	295	0	623
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	10.1	10.1	0.1	0.0	0.0	61.2	0.0	46.7	42.0	0.0	48.1
Incr Delay (d2), s/veh	0.9	1.1	1.1	0.4	1.4	1.3	0.3	0.0	0.3	0.5	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.4	7.7	0.0	0.4	0.4	0.2	0.0	1.7	2.3	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	11.2	11.2	0.5	1.4	1.3	61.5	0.0	47.1	42.6	0.0	58.4
LnGrp LOS	B	B	B	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1369			1080			67				449
Approach Delay, s/veh		11.0			1.3			48.4				55.4
Approach LOS		B			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	14.5	78.4	9.0	28.1		92.9		37.1				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	9.9	5.7	7.0	20.1		19.8		28.3				
Green Ext Time (p_c), s	0.6	9.2	0.0	0.2		9.9		2.3				

Intersection Summary

HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Total 2021 AM Mitigated  
2: Quail Run Rd & Lincoln Drive

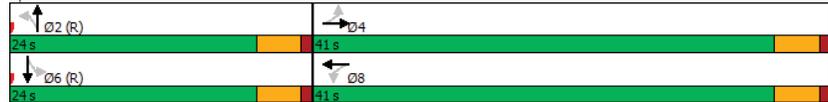
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗		↖	↖	↖
Traffic Volume (vph)	115	1018	6	866	3	0	26	0
Future Volume (vph)	115	1018	6	866	3	0	26	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	31.4	31.4	31.4	31.4	24.6	24.6	24.6	24.6
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38
v/c Ratio	0.68	0.67	0.05	0.57	0.02	0.16	0.16	0.16
Control Delay	38.8	18.7	7.2	13.4	5.1	7.8	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	18.7	7.2	13.4	5.1	7.8	7.8	7.8
LOS	D	B	A	B	A	A	A	A
Approach Delay		20.7		13.4		5.1		7.8
Approach LOS		C		B		A		A

Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 17.0  
 Intersection Capacity Utilization 51.7%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Total 2021 AM Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖		↖	↖	↖
Traffic Volume (veh/h)	115	1018	7	6	866	12	3	0	10	26	0	65
Future Volume (veh/h)	115	1018	7	6	866	12	3	0	10	26	0	65
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1131	8	7	962	13	3	0	11	29	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1501	11	245	1490	20	177	38	544	234	36	493
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	577	3617	26	494	3590	49	246	86	1218	364	81	1105
Grp Volume(v), veh/h	128	556	583	7	476	499	14	0	0	101	0	0
Grp Sat Flow(s),veh/h/ln	577	1777	1866	494	1777	1862	1551	0	0	1550	0	0
Q Serve(g_s), s	9.5	9.2	9.2	0.4	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	9.2	9.2	9.7	6.4	6.4	0.3	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.03	0.21		0.79	0.29		0.71
Lane Grp Cap(c), veh/h	293	737	774	245	737	773	760	0	0	763	0	0
V/C Ratio(X)	0.44	0.75	0.75	0.03	0.65	0.65	0.02	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	378	998	1048	317	998	1045	760	0	0	763	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	4.0	4.0	6.2	3.8	3.8	10.0	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	2.0	1.9	0.0	1.0	0.9	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.8	1.8	0.0	1.3	1.4	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	6.0	6.0	6.3	4.7	4.7	10.1	0.0	0.0	11.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1267			982			14				101
Approach Delay, s/veh		6.2			4.7			10.1				11.0
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.6		31.4		33.6		31.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.3		18.0		4.3		11.7				
Green Ext Time (p_c), s		0.0		8.8		0.4		7.1				

Intersection Summary

HCM 6th Ctrl Delay 5.8  
 HCM 6th LOS A



Total 2021 AM Mitigated  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	997	34	18	827	10	50	0	29	5	0	12
Future Vol, veh/h	26	997	34	18	827	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1108	38	20	919	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	930	0	0	1146
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	969
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	969
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	17.8	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	369	*1106	-	-	969	-	-	313	739
HCM Lane V/C Ratio	0.238	0.026	-	-	0.021	-	-	0.018	0.018
HCM Control Delay (s)	17.8	8.3	-	-	8.8	-	-	16.7	10
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Total 2021 AM Mitigated  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	976	53	43	840	8	6	0	41	4	1	12
Future Vol, veh/h	3	976	53	43	840	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1084	59	48	933	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	942	0	0	1143
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	973
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	973
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.6	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	595	*1106	-	-	973	-	-	291	739
HCM Lane V/C Ratio	0.088	0.003	-	-	0.049	-	-	0.015	0.018
HCM Control Delay (s)	11.6	8.3	-	-	8.9	-	-	17.6	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

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

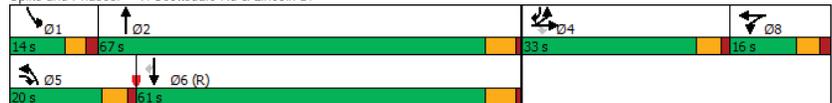
Total 2021 AM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Future Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	15.6	15.6	12.5	27.7	10.3	30.7	15.5
Total Split (s)	33.0	33.0	20.0	16.0	16.0	20.0	67.0	14.0	61.0	33.0
Total Split (%)	25.4%	25.4%	15.4%	12.3%	12.3%	15.4%	51.5%	10.8%	46.9%	25.4%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	None	C-Max	None
Act Effct Green (s)	25.5	25.5	40.2	10.1	10.1	14.7	66.7	7.7	57.5	88.6
Actuated g/C Ratio	0.20	0.20	0.31	0.08	0.08	0.11	0.51	0.06	0.44	0.68
v/c Ratio	0.84	0.84	0.95	0.31	0.31	0.83	0.59	0.55	0.84	0.57
Control Delay	54.5	54.3	53.3	63.0	30.3	74.9	24.3	78.4	37.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	54.3	53.3	63.0	30.3	74.9	24.3	78.4	37.0	7.2
LOS	D	D	D	E	C	E	C	E	D	A
Approach Delay		53.9			40.4		33.1		30.3	
Approach LOS		D			D		C		C	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	35.9
Intersection Capacity Utilization:	84.2%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 AM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Future Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	542	0	277	42	41	36	322	1487	33	57	1887	378
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	624	0	448	137	146	114	371	2535	56	73	2172	952
Arrive On Green	0.18	0.00	0.18	0.08	0.08	0.08	0.11	0.49	0.49	0.04	0.43	0.43
Sat Flow, veh/h	3563	0	1585	1781	1900	1480	3456	5140	114	1781	5106	1585
Grp Volume(v), veh/h	542	0	277	42	38	39	322	985	535	57	1887	378
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1604	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	19.2	0.0	19.7	2.9	2.6	3.0	11.9	26.8	26.8	4.1	43.8	16.3
Cycle Q Clear(g_c), s	19.2	0.0	19.7	2.9	2.6	3.0	11.9	26.8	26.8	4.1	43.8	16.3
Prop In Lane	1.00		1.00	1.00		0.92	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	624	0	448	137	137	123	371	1679	912	73	2172	952
V/C Ratio(X)	0.87	0.00	0.62	0.31	0.28	0.32	0.87	0.59	0.59	0.78	0.87	0.40
Avail Cap(c_a), veh/h	754	0	506	143	142	128	385	1679	912	119	2172	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	40.5	56.7	56.6	56.8	57.1	23.5	23.5	61.7	34.0	13.6
Incr Delay (d2), s/veh	8.1	0.0	1.1	0.5	0.4	0.5	17.1	0.4	0.7	6.5	5.1	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	9.3	0.0	7.9	1.3	1.2	1.2	6.1	10.8	11.8	2.0	18.8	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.2	0.0	41.6	57.2	57.0	57.3	74.2	23.8	24.2	68.2	39.1	14.9
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		819			119			1842			2322	
Approach Delay, s/veh		53.9			57.2			32.7			35.9	
Approach LOS		D			E			C			D	

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	10.6 69.8 28.3 19.5 61.0 15.6
Change Period (Y+Rc), s	* 5.3 5.7 5.5 5.5 5.7 5.6
Max Green Setting (Gmax), s	* 8.7 61.3 27.5 14.5 55.3 10.4
Max Q Clear Time (g_c+I), s	6.1 28.8 21.7 13.9 45.8 5.0
Green Ext Time (p_c), s	0.0 2.2 1.0 0.0 3.0 0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

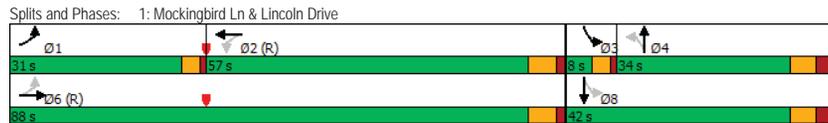
Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 PM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	250	891	22	941	7	63	64	48
Future Volume (vph)	250	891	22	941	7	63	64	48
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	101.0	99.0	77.4	77.4	12.1	12.1	21.0	18.5
Actuated g/C Ratio	0.78	0.76	0.60	0.60	0.09	0.09	0.16	0.14
v/c Ratio	0.61	0.38	0.08	0.53	0.10	0.52	0.39	0.67
Control Delay	12.0	6.0	31.9	39.2	54.9	59.7	52.7	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	6.0	31.9	39.2	54.9	59.7	52.7	32.6
LOS	B	A	C	D	D	E	D	C
Approach Delay		7.3		39.0		59.3		37.3
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	



Total 2021 PM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	250	891	29	22	941	61	7	63	20	64	48	159
Future Volume (veh/h)	250	891	29	22	941	61	7	63	20	64	48	159
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	990	21	24	1046	40	8	70	13	71	53	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	2723	58	427	2328	89	101	118	22	153	70	160
Arrive On Green	0.07	0.77	0.77	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3558	75	558	3490	133	1211	1534	285	1781	506	1156
Grp Volume(v), veh/h	278	494	517	24	533	553	8	83	71	0	174	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	558	1777	1846	1211	0	1819	1781	0	1662
Q Serve(g_s), s	6.0	11.8	11.8	0.0	0.0	0.0	0.8	0.0	5.7	4.0	0.0	13.1
Cycle Q Clear(g_c), s	6.0	11.8	11.8	0.0	0.0	0.0	5.9	0.0	5.7	4.0	0.0	13.1
Prop In Lane	1.00		0.04	1.00		0.07	1.00		0.16	1.00		0.70
Lane Grp Cap(c), veh/h	522	1360	1421	427	1185	1232	101	0	140	153	0	230
V/C Ratio(X)	0.53	0.36	0.36	0.06	0.45	0.45	0.08	0.00	0.59	0.46	0.00	0.76
Avail Cap(c_a), veh/h	772	1360	1421	427	1185	1232	264	0	385	153	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	5.0	5.0	0.0	0.0	0.0	60.6	0.0	58.0	53.4	0.0	53.9
Incr Delay (d2), s/veh	0.8	0.8	0.7	0.2	0.9	0.8	0.3	0.0	4.0	2.2	0.0	5.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.1	4.1	4.3	0.0	0.3	0.3	0.3	0.0	2.8	0.4	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.7	5.7	5.7	0.2	0.9	0.8	60.9	0.0	62.0	55.6	0.0	58.9
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1289			1110			91				245
Approach Delay, s/veh		5.7			0.8			61.9				57.9
Approach LOS		A			A			E				E

Timer - Assigned Phs	1	2	3	4	6	8
Phs Duration (G+Y+Rc), s	12.8	92.7	8.0	16.5	105.5	24.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	6.0	6.5
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5	82.0	35.5
Max Q Clear Time (g_c+I), s	8.0	2.0	6.0	7.9	13.8	15.1
Green Ext Time (p_c), s	0.8	9.8	0.0	0.4	8.5	0.9

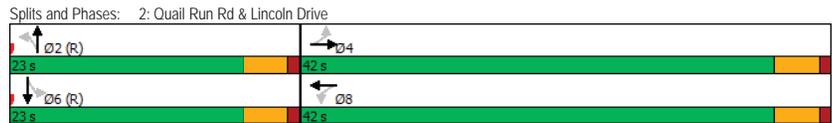
Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Total 2021 PM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕
Traffic Volume (vph)	85	899	5	923	5	0	14	0
Future Volume (vph)	85	899	5	923	5	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	23.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	29.3	29.3	29.3	29.3	26.7	26.7	26.7	26.7
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.41	0.41	0.41	0.41
v/c Ratio	0.68	0.63	0.04	0.66	0.02	0.17	0.17	0.17
Control Delay	43.1	19.2	9.0	17.7	5.2	5.8	5.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	19.2	9.0	17.7	5.2	5.8	5.8	5.8
LOS	D	B	A	B	A	A	A	A
Approach Delay		21.2		17.7		5.2		5.8
Approach LOS		C		B		A		A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	18.7
Intersection Capacity Utilization:	49.1%
Intersection LOS:	B
ICU Level of Service:	A
Analysis Period (min):	15



Total 2021 PM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↕	↕	↕	↔	↕	↕
Traffic Volume (veh/h)	85	899	7	5	923	25	5	0	7	14	0	93
Future Volume (veh/h)	85	899	7	5	923	25	5	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No								
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	999	8	6	1026	28	6	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	1484	12	275	1451	40	333	30	378	121	38	617
Arrive On Green	0.82	0.82	0.82	0.82	0.82	0.82	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	535	3613	29	560	3533	96	563	66	839	129	84	1369
Grp Volume(v), veh/h	94	491	516	6	516	538	14	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	535	1777	1865	560	1777	1853	1468	0	0	1582	0	0
Q Serve(g_s), s	7.7	7.2	7.2	0.3	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.2	7.2	7.2	7.9	8.0	8.0	0.3	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.43		0.57	0.13		0.87
Lane Grp Cap(c), veh/h	261	730	766	275	730	761	741	0	0	776	0	0
V/C Ratio(X)	0.36	0.67	0.67	0.02	0.71	0.71	0.02	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	350	1025	1076	368	1025	1069	741	0	0	776	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	4.1	4.1	5.7	4.1	4.1	9.9	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.0	1.3	1.3	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.5	0.0	1.6	1.7	0.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	5.1	5.0	5.8	5.4	5.4	9.9	0.0	0.0	11.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1101			1060			14				119
Approach Delay, s/veh		5.4			5.4			9.9				11.0
Approach LOS		A			A			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.2		30.8		34.2		30.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		37.5		18.5		37.5				
Max Q Clear Time (g_c+I), s		2.3		18.2		4.8		10.0				
Green Ext Time (p_c), s		0.0		7.7		0.5		8.1				

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Total 2021 PM  
3: Shared Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	911	9	21	945	11	22
Future Vol, veh/h	911	9	21	945	11	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1012	10	23	1050	12	24

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1022	0	1588
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	571
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1029	-	*99
Stage 1	-	-	-	-	*640
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1029	-	*97
Mov Cap-2 Maneuver	-	-	-	-	*331
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	521	-	-	1029	-
HCM Lane V/C Ratio	0.07	-	-	0.023	-
HCM Control Delay (s)	12.4	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

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

Total 2021 PM  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	6.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	10	2	0	11	1
Future Vol, veh/h	0	10	2	0	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	2	0	12	1

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	27	2	0	0	2
Stage 1	2	-	-	-	-
Stage 2	25	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	988	1082	-	-	1620
Stage 1	1021	-	-	-	-
Stage 2	998	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	981	1082	-	-	1620
Mov Cap-2 Maneuver	981	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	998	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1082	1620
HCM Lane V/C Ratio	-	-	0.01	0.008
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Total 2021 PM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	7	871	41	6	869	9	66	3	47	7	0	34
Future Vol, veh/h	7	871	41	6	869	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	968	46	7	966	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	976	0	0	1014
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1039
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1039
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	17.4	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	418	*1070	-	-	1039	-	-	331	715
HCM Lane V/C Ratio	0.308	0.007	-	-	0.006	-	-	0.023	0.053
HCM Control Delay (s)	17.4	8.4	-	-	8.5	-	-	16.1	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0.1	0.2

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

Total 2021 PM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	11	865	53	61	867	8	14	1	89	4	0	7
Future Vol, veh/h	11	865	53	61	867	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	961	59	68	963	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	972	0	0	1020
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1032
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1032
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.3	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	610	*1070	-	-	1032	-	-	273	715
HCM Lane V/C Ratio	0.189	0.011	-	-	0.066	-	-	0.016	0.011
HCM Control Delay (s)	12.3	8.4	-	-	8.7	-	-	18.4	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Total 2021 PM  
9: Scottsdale Rd & Lincoln Dr

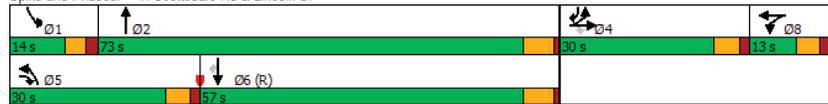
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	503	57	425	57	63	419	1652	62	1595	497
Future Volume (vph)	503	57	425	57	63	419	1652	62	1595	497
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	13.0	13.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	24.5	24.5	45.9	7.4	7.4	21.4	70.3	7.9	54.4	84.6
Actuated g/C Ratio	0.19	0.19	0.35	0.06	0.06	0.16	0.54	0.06	0.42	0.65
v/c Ratio	0.97	0.98	0.78	0.63	0.58	0.82	0.69	0.64	0.83	0.52
Control Delay	80.9	83.6	34.9	86.9	37.8	65.1	24.1	86.0	38.5	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.9	83.6	34.9	86.9	37.8	65.1	24.1	86.0	38.5	11.6
LOS	F	F	C	F	D	E	C	F	D	B
Approach Delay		61.8			52.3		32.2		33.7	
Approach LOS		E			D		C		C	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 PM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	503	57	425	57	63	73	419	1652	46	62	1595	497
Future Volume (veh/h)	503	57	425	57	63	73	419	1652	46	62	1595	497
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	604	0	250	63	70	59	466	1836	40	69	1772	285
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	655	0	532	101	109	83	524	2563	56	88	2015	917
Arrive On Green	0.18	0.00	0.18	0.06	0.06	0.06	0.15	0.50	0.50	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1922	1462	3456	5142	112	1781	5106	1585
Grp Volume(v), veh/h	604	0	250	63	64	65	466	1215	661	69	1772	285
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1607	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	21.7	0.0	16.2	4.5	4.6	5.2	17.2	36.2	36.2	5.0	41.8	12.0
Cycle Q Clear(g_c), s	21.7	0.0	16.2	4.5	4.6	5.2	17.2	36.2	36.2	5.0	41.8	12.0
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	655	0	532	101	101	91	524	1697	922	88	2015	917
V/C Ratio(X)	0.92	0.00	0.47	0.62	0.63	0.71	0.89	0.72	0.72	0.79	0.88	0.31
Avail Cap(c_a), veh/h	671	0	539	101	101	91	651	1762	958	119	2015	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	34.1	59.9	60.0	60.2	54.1	25.4	25.4	61.1	36.5	14.1
Incr Delay (d2), s/veh	17.7	0.0	0.2	8.4	9.6	19.5	10.8	1.1	2.1	14.7	5.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	0.0	6.3	2.3	2.3	2.6	8.3	14.6	16.2	2.6	18.2	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.8	0.0	34.3	68.4	69.5	79.7	64.9	26.6	27.5	75.8	42.4	15.0
LnGrp LOS	E	A	C	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		854			192		2342			2126		
Approach Delay, s/veh		59.4			72.6		34.5			39.8		
Approach LOS		E			E		C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	70.5		29.4	25.2	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	7.0	38.2		23.7	19.2	43.8		7.2				
Green Ext Time (p_c), s	0.0	3.0		0.2	0.5	2.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Notes

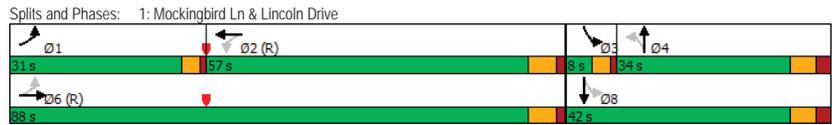
- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 PM Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	250	891	22	941	7	63	64	48
Future Volume (vph)	250	891	22	941	7	63	64	48
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	101.0	99.0	77.0	77.0	12.1	12.1	21.0	18.5
Actuated g/C Ratio	0.78	0.76	0.59	0.59	0.09	0.09	0.16	0.14
v/c Ratio	0.61	0.38	0.08	0.54	0.10	0.52	0.39	0.67
Control Delay	11.9	6.0	32.3	39.6	54.9	59.7	52.7	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	6.0	32.3	39.6	54.9	59.7	52.7	32.6
LOS	B	A	C	D	D	E	D	C
Approach Delay		7.3		39.4		59.3		37.3
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	



Total 2021 PM Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	250	891	29	22	941	61	7	63	20	64	48	159
Future Volume (veh/h)	250	891	29	22	941	61	7	63	20	64	48	159
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No								
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	990	21	24	1046	40	8	70	13	71	53	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	2723	58	427	2328	89	101	118	22	153	70	160
Arrive On Green	0.07	0.77	0.77	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3558	75	558	3490	133	1211	1534	285	1781	506	1156
Grp Volume(v), veh/h	278	494	517	24	533	553	8	0	83	71	0	174
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	558	1777	1846	1211	0	1819	1781	0	1662
Q Serve(g_s), s	6.0	11.8	11.8	0.0	0.0	0.0	0.8	0.0	5.7	4.0	0.0	13.1
Cycle Q Clear(g_c), s	6.0	11.8	11.8	0.0	0.0	0.0	5.9	0.0	5.7	4.0	0.0	13.1
Prop In Lane	1.00		0.04	1.00		0.07	1.00		0.16	1.00		0.70
Lane Grp Cap(c), veh/h	522	1360	1421	427	1185	1232	101	0	140	153	0	230
V/C Ratio(X)	0.53	0.36	0.36	0.06	0.45	0.45	0.08	0.00	0.59	0.46	0.00	0.76
Avail Cap(c_a), veh/h	772	1360	1421	427	1185	1232	264	0	385	153	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	5.0	5.0	0.0	0.0	0.0	60.6	0.0	58.0	53.4	0.0	53.9
Incr Delay (d2), s/veh	0.8	0.8	0.7	0.2	0.9	0.8	0.3	0.0	4.0	2.2	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.1	4.3	0.0	0.3	0.3	0.3	0.0	2.8	0.4	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	5.7	5.7	0.2	0.9	0.8	60.9	0.0	62.0	55.6	0.0	58.9
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1289			1110			91				245
Approach Delay, s/veh		5.7			0.8			61.9				57.9
Approach LOS		A			A			E				E

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	12.8 92.7 8.0 16.5 105.5 24.5
Change Period (Y+Rc), s	4.0 6.0 4.0 6.5 6.0 6.5
Max Green Setting (Gmax), s	27.0 51.0 4.0 27.5 82.0 35.5
Max Q Clear Time (g_c+I), s	8.0 2.0 6.0 7.9 13.8 15.1
Green Ext Time (p_c), s	0.8 9.8 0.0 0.4 8.5 0.9

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Total 2021 PM Mitigated  
2: Quail Run Rd & Lincoln Drive

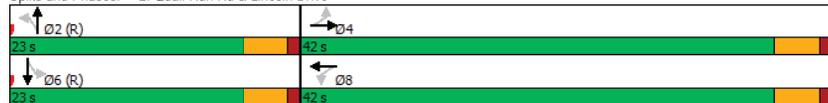
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↖	↕		↕	↕	↕
Traffic Volume (vph)	85	899	5	923	5	0	14	0
Future Volume (vph)	85	899	5	923	5	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	23.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	29.4	29.4	29.4	29.4	26.6	26.6	26.6	26.6
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.41	0.41	0.41	0.41
v/c Ratio	0.67	0.63	0.04	0.66	0.02	0.17	0.17	0.17
Control Delay	42.3	19.0	8.0	17.6	5.2	5.8	5.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	19.0	8.0	17.6	5.2	5.8	5.8	5.8
LOS	D	B	A	B	A	A	A	A
Approach Delay		21.0		17.6		5.2		5.8
Approach LOS		C		B		A		A

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 49.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Total 2021 PM Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕		↕	↕	
Traffic Volume (veh/h)	85	899	7	5	923	25	5	0	7	14	0	93
Future Volume (veh/h)	85	899	7	5	923	25	5	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	999	8	6	1026	28	6	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	261	1484	12	275	1451	40	333	30	378	121	38	617
Arrive On Green	0.82	0.82	0.82	0.82	0.82	0.82	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	535	3613	29	560	3533	96	563	66	839	129	84	1369
Grp Volume(v), veh/h	94	491	516	6	516	538	14	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	535	1777	1865	560	1777	1853	1468	0	0	1582	0	0
Q Serve(g_s), s	7.7	7.2	7.2	0.3	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.2	7.2	7.2	7.9	8.0	8.0	0.3	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.43		0.57	0.13		0.87
Lane Grp Cap(c), veh/h	261	730	766	275	730	761	741	0	0	776	0	0
V/C Ratio(X)	0.36	0.67	0.67	0.02	0.71	0.71	0.02	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	350	1025	1076	368	1025	1069	741	0	0	776	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	4.1	4.1	5.7	4.1	4.1	9.9	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.0	1.3	1.3	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.5	0.0	1.6	1.7	0.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	5.1	5.0	5.8	5.4	5.4	9.9	0.0	0.0	11.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1101			1060			14				119
Approach Delay, s/veh		5.4			5.4			9.9				11.0
Approach LOS		A			A			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.2		30.8		34.2		30.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		37.5		18.5		37.5				
Max Q Clear Time (g_c+I), s		2.3		18.2		4.8		10.0				
Green Ext Time (p_c), s		0.0		7.7		0.5		8.1				

Intersection Summary

HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Total 2021 PM Mitigated  
3: Shared Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	911	9	21	945	11	22
Future Vol, veh/h	911	9	21	945	11	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1012	10	23	1050	12	24

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1022	0	1588
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	571
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1029	-	*99
Stage 1	-	-	-	-	*640
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1029	-	*97
Mov Cap-2 Maneuver	-	-	-	-	*331
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	521	-	-	1029	-
HCM Lane V/C Ratio	0.07	-	-	0.023	-
HCM Control Delay (s)	12.4	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

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

Total 2021 PM Mitigated  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	6.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	10	2	0	11	1
Future Vol, veh/h	0	10	2	0	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	2	0	12	1

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	27	2	0	0	2
Stage 1	2	-	-	-	-
Stage 2	25	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	988	1082	-	-	1620
Stage 1	1021	-	-	-	-
Stage 2	998	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	981	1082	-	-	1620
Mov Cap-2 Maneuver	981	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	998	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1082	1620
HCM Lane V/C Ratio	-	-	0.01	0.008
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Total 2021 PM Mitigated  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	7	871	41	6	869	9	66	3	47	7	0	34
Future Vol, veh/h	7	871	41	6	869	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	968	46	7	966	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	976	0	0	1014
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1039
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1039
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	17.4	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	418	*1070	-	-	1039	-	-	331	715
HCM Lane V/C Ratio	0.308	0.007	-	-	0.006	-	-	0.023	0.053
HCM Control Delay (s)	17.4	8.4	-	-	8.5	-	-	16.1	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0.1	0.2

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

Total 2021 PM Mitigated  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	11	865	53	61	867	8	14	1	89	4	0	7
Future Vol, veh/h	11	865	53	61	867	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	961	59	68	963	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	972	0	0	1020
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1032
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1032
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.3	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	610	*1070	-	-	1032	-	-	273	715
HCM Lane V/C Ratio	0.189	0.011	-	-	0.066	-	-	0.016	0.011
HCM Control Delay (s)	12.3	8.4	-	-	8.7	-	-	18.4	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Total 2021 PM Mitigated  
9: Scottsdale Rd & Lincoln Dr

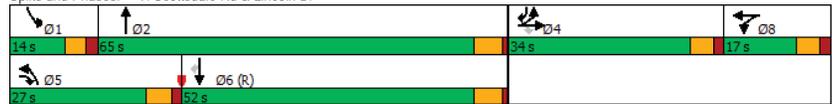
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	503	57	425	57	63	419	1652	62	1595	497
Future Volume (vph)	503	57	425	57	63	419	1652	62	1595	497
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	15.6	15.6	13.0	16.7	11.0	16.0	18.5
Total Split (s)	34.0	34.0	27.0	17.0	17.0	27.0	65.0	14.0	52.0	34.0
Total Split (%)	26.2%	26.2%	20.8%	13.1%	13.1%	20.8%	50.0%	10.8%	40.0%	26.2%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	27.1	27.1	47.7	10.4	10.4	20.6	64.3	8.2	49.6	82.4
Actuated g/C Ratio	0.21	0.21	0.37	0.08	0.08	0.16	0.49	0.06	0.38	0.63
v/c Ratio	0.88	0.89	0.74	0.45	0.45	0.86	0.75	0.62	0.91	0.52
Control Delay	58.5	59.9	25.5	67.3	31.6	69.3	30.0	82.4	47.0	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	59.9	25.5	67.3	31.6	69.3	30.0	82.4	47.0	10.6
LOS	E	E	C	E	C	E	C	F	D	B
Approach Delay		44.7			42.1		37.8		39.6	
Approach LOS		D			D		D		D	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 39.9	Intersection LOS: D
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 PM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	503	57	425	57	63	73	419	1652	46	62	1595	497
Future Volume (veh/h)	503	57	425	57	63	73	419	1652	46	62	1595	497
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	604	0	250	63	70	59	466	1836	40	69	1772	285
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	672	0	537	137	148	112	518	2357	51	88	1819	864
Arrive On Green	0.19	0.00	0.19	0.08	0.08	0.08	0.15	0.46	0.46	0.05	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1922	1462	3456	5142	112	1781	5106	1585
Grp Volume(v), veh/h	604	0	250	63	64	65	466	1215	661	69	1772	285
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1607	1728	1702	1850	1781	1702	1585
Q Serve(g_s), s	21.5	0.0	16.1	4.4	4.5	5.0	17.2	39.1	39.1	5.0	44.5	13.0
Cycle Q Clear(g_c), s	21.5	0.0	16.1	4.4	4.5	5.0	17.2	39.1	39.1	5.0	44.5	13.0
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	672	0	537	137	137	124	518	1560	848	88	1819	864
V/C Ratio(X)	0.90	0.00	0.47	0.46	0.47	0.53	0.90	0.78	0.78	0.79	0.97	0.33
Avail Cap(c_a), veh/h	781	0	585	156	156	141	572	1560	848	119	1819	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	0.0	33.7	57.4	57.5	57.7	54.3	29.7	29.7	61.1	41.3	16.4
Incr Delay (d2), s/veh	11.1	0.0	0.2	0.9	0.9	1.3	15.3	2.4	4.3	14.7	15.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.0	6.3	2.0	2.1	2.1	8.6	16.3	18.2	2.6	21.1	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	0.0	34.0	58.3	58.4	59.0	69.5	32.0	33.9	75.8	57.1	17.4
LnGrp LOS	E	A	C	E	E	E	E	C	C	E	E	B
Approach Vol, veh/h		854			192		2342			2126		
Approach Delay, s/veh		54.2			58.6		40.0			52.4		
Approach LOS		D			E		D			D		

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	11.7	65.3	30.0	25.0	52.0	15.6
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	59.3	28.5	21.5	46.3	11.4
Max Q Clear Time (g_c+I), s	7.0	41.1	23.5	19.2	46.5	7.0
Green Ext Time (p_c), s	0.0	2.9	1.0	0.3	0.0	0.2

Intersection Summary

HCM 6th Ctrl Delay	47.6
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX H**

### **2021 PEAK HOUR ANALYSIS SCENARIO 2**

Background 2021 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

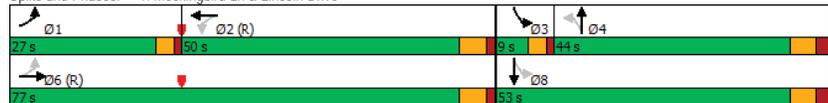
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	226	969	22	900	5	35	74	92
Future Volume (vph)	226	969	22	900	5	35	74	92
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	93.5	91.5	68.9	68.9	18.8	18.8	28.5	26.0
Actuated g/C Ratio	0.72	0.70	0.53	0.53	0.14	0.14	0.22	0.20
v/c Ratio	0.60	0.43	0.10	0.53	0.11	0.21	0.32	0.83
Control Delay	14.8	9.6	34.0	37.3	49.2	33.6	42.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	9.6	34.0	37.3	49.2	33.6	42.8	50.2
LOS	B	A	C	D	D	C	D	D
Approach Delay		10.6		37.3		35.0		48.8
Approach LOS		B		D		D		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 72.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Background 2021 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	
Traffic Volume (veh/h)	226	969	31	22	900	42	5	35	19	74	92	237
Future Volume (veh/h)	226	969	31	22	900	42	5	35	19	74	92	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	251	1077	23	24	1000	30	6	39	12	82	102	152
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	502	2760	59	362	2364	71	85	141	43	213	119	177
Arrive On Green	0.07	0.74	0.74	1.00	1.00	1.00	0.10	0.10	0.10	0.04	0.17	0.17
Sat Flow, veh/h	1688	3745	80	486	3708	111	1066	1444	444	1688	714	1064
Grp Volume(v), veh/h	251	538	562	24	504	526	6	0	51	82	0	254
Grp Sat Flow(s),veh/h/ln	1688	1870	1954	486	1870	1949	1066	0	1889	1688	0	1777
Q Serve(g_s), s	6.3	13.8	13.8	0.1	0.0	0.0	0.7	0.0	3.3	5.0	0.0	18.1
Cycle Q Clear(g_c), s	6.3	13.8	13.8	0.9	0.0	0.0	9.8	0.0	3.3	5.0	0.0	18.1
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.24	1.00		0.60
Lane Grp Cap(c), veh/h	502	1379	1441	362	1192	1242	85	0	184	213	0	296
V/C Ratio(X)	0.50	0.39	0.39	0.07	0.42	0.42	0.07	0.00	0.28	0.38	0.00	0.86
Avail Cap(c_a), veh/h	685	1379	1441	362	1192	1242	289	0	545	213	0	636
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	6.3	6.3	0.0	0.0	0.0	61.8	0.0	54.4	49.9	0.0	52.7
Incr Delay (d2), s/veh	0.8	0.8	0.8	0.3	0.9	0.8	0.3	0.0	0.8	1.1	0.0	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.3	5.5	0.0	0.3	0.3	0.2	0.0	1.6	0.2	0.0	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	7.1	7.1	0.3	0.9	0.8	62.1	0.0	55.2	51.0	0.0	59.7
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	E
Approach Vol, veh/h		1351			1054			57				336
Approach Delay, s/veh		7.0			0.9			55.9				57.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	12.9	88.9	9.0	19.2		101.8		28.2				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	8.3	2.9	7.0	11.8		15.8		20.1				
Green Ext Time (p_c), s	0.6	8.9	0.0	0.2		9.7		1.6				

Intersection Summary

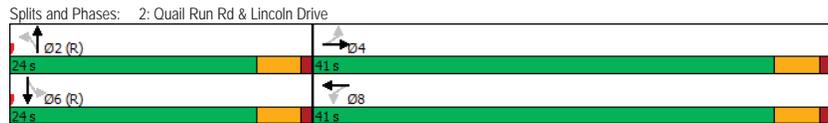
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Background 2021 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	←	↑	↙	↓
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Configurations	↖	↕	↘	↕	↕	↕	↕
Traffic Volume (vph)	115	1012	2	862	0	26	0
Future Volume (vph)	115	1012	2	862	0	26	0
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA
Protected Phases		4		8	2		6
Permitted Phases	4		8			6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	31.2	31.2	31.2	31.2	24.8	24.8	24.8
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38
v/c Ratio	0.68	0.66	0.01	0.57	0.01	0.16	0.16
Control Delay	39.4	18.8	9.0	15.4	0.0	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	18.8	9.0	15.4	0.0	7.8	7.8
LOS	D	B	A	B	A	A	A
Approach Delay		20.9		15.4			7.8
Approach LOS		C		B			A

Intersection Summary		
Cycle Length:	65	
Actuated Cycle Length:	65	
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBL, Start of Green	
Natural Cycle:	60	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.68	
Intersection Signal Delay:	18.0	Intersection LOS: B
Intersection Capacity Utilization	55.6%	ICU Level of Service B
Analysis Period (min)	15	



Background 2021 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	←	↗	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕		↕	↕	↕
Traffic Volume (veh/h)	115	1012	3	2	862	12	0	0	7	26	0	65
Future Volume (veh/h)	115	1012	3	2	862	12	0	0	7	26	0	65
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1124	3	2	958	13	0	0	8	29	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1505	4	247	1486	20	0	0	709	235	36	495
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.00	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	579	3636	10	500	3590	49	0	0	1585	365	81	1106
Grp Volume(v), veh/h	128	549	578	2	474	497	0	0	8	101	0	0
Grp Sat Flow(s), veh/h/ln	579	1777	1869	500	1777	1862	0	0	1585	1551	0	0
Q Serve(g_s), s	9.6	9.1	9.1	0.1	6.4	6.4	0.0	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	9.1	9.1	9.3	6.4	6.4	0.0	0.0	0.2	2.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.03	0.00		1.00	0.29		0.71
Lane Grp Cap(c), veh/h	293	736	774	247	736	771	0	0	709	766	0	0
V/C Ratio(X)	0.44	0.75	0.75	0.01	0.64	0.64	0.00	0.00	0.01	0.13	0.00	0.00
Avail Cap(c_a), veh/h	378	998	1049	321	998	1045	0	0	709	766	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	4.1	4.1	6.2	3.8	3.8	0.0	0.0	10.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	1.9	1.8	0.0	1.0	0.9	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	1.8	1.8	0.0	1.4	1.4	0.0	0.0	0.1	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.7	6.0	5.9	6.2	4.8	4.7	0.0	0.0	10.0	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1255			973				8			101
Approach Delay, s/veh		6.1			4.8				10.0			10.9
Approach LOS		A			A				A			B
Timer - Assigned Phs		2		4		6			8			
Phs Duration (G+Y+Rc), s		33.7		31.3		33.7			31.3			
Change Period (Y+Rc), s		4.5		4.5		4.5			4.5			
Max Green Setting (Gmax), s		19.5		36.5		19.5			36.5			
Max Q Clear Time (g_c+I), s		2.2		18.0		4.3			11.3			
Green Ext Time (p_c), s		0.0		8.7		0.4			7.0			

Intersection Summary		
HCM 6th Ctrl Delay	5.8	
HCM 6th LOS	A	

Background 2021 AM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1042	0	0	872	0	0
Future Vol, veh/h	1042	0	0	872	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1158	0	0	969	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	579
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*684
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*684
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-

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

Background 2021 AM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	0	0	7	0	0	5
Future Vol, veh/h	0	0	7	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	8	0	0	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	14	8	8
Stage 1	8	-	-
Stage 2	6	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1005	1074	1612
Stage 1	1015	-	-
Stage 2	1017	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1005	1074	1612
Mov Cap-2 Maneuver	1005	-	-
Stage 1	1015	-	-
Stage 2	1017	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1612	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-

Background 2021 AM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1042	4	0	868	0	3
Future Vol, veh/h	1042	4	0	868	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1158	4	0	964	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1162	0	1642
Stage 1	-	-	-	1160	-
Stage 2	-	-	-	482	-
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	948	-	*91 *684
Stage 1	-	-	-	*585	-
Stage 2	-	-	-	*675	-
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	948	-	*91 *684
Mov Cap-2 Maneuver	-	-	-	*327	-
Stage 1	-	-	-	*585	-
Stage 2	-	-	-	*675	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	948	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2021 AM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1041	2	5	868	0	3
Future Vol, veh/h	1041	2	5	868	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1157	2	6	964	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1159	0	1652
Stage 1	-	-	-	1158	-
Stage 2	-	-	-	494	-
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	953	-	*89 *684
Stage 1	-	-	-	*587	-
Stage 2	-	-	-	*675	-
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	953	-	*88 *684
Mov Cap-2 Maneuver	-	-	-	*325	-
Stage 1	-	-	-	*584	-
Stage 2	-	-	-	*675	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	953	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-
HCM Control Delay (s)	10.3	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2021 AM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	983	34	18	807	10	50	0	29	5	0	12
Future Vol, veh/h	26	983	34	18	807	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1092	38	20	897	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	908	0	0	1130
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1112	-	-	990
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1112	-	-	990
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	17.3	11.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	380	1112	-	-	990	-	-	308	763
HCM Lane V/C Ratio	0.231	0.026	-	-	0.02	-	-	0.018	0.017
HCM Control Delay (s)	17.3	8.3	-	-	8.7	-	-	16.9	9.8
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Background 2021 AM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	962	53	43	820	8	6	0	41	4	1	12
Future Vol, veh/h	3	962	53	43	820	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1069	59	48	911	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	920	0	0	1128
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	993
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	993
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.6	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	598	1106	-	-	993	-	-	298	739
HCM Lane V/C Ratio	0.087	0.003	-	-	0.048	-	-	0.015	0.018
HCM Control Delay (s)	11.6	8.3	-	-	8.8	-	-	17.3	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

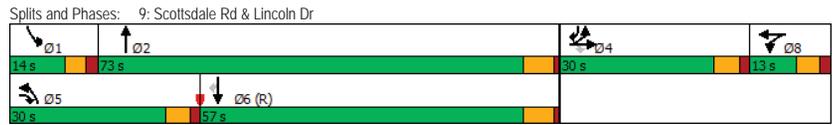
Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Background 2021 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	452	39	463	38	37	281	1338	51	1698	589
Future Volume (vph)	452	39	463	38	37	281	1338	51	1698	589
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	C-Max	None	
Act Effct Green (s)	23.6	23.6	42.3	7.4	7.4	18.7	71.3	7.6	58.0	87.3
Actuated g/C Ratio	0.18	0.18	0.33	0.06	0.06	0.14	0.55	0.06	0.45	0.67
v/c Ratio	0.89	0.89	0.91	0.42	0.40	0.63	0.55	0.55	0.83	0.58
Control Delay	64.4	64.1	51.2	72.4	33.9	57.7	20.7	79.0	36.8	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	64.1	51.2	72.4	33.9	57.7	20.7	79.0	36.8	10.3
LOS	E	E	D	E	C	E	C	E	D	B
Approach Delay		57.9			45.8		26.9		31.0	
Approach LOS		E			D		C		C	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	35.1
Intersection Capacity Utilization:	81.6%
ICU Level of Service:	D
Analysis Period (min):	15



Background 2021 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	452	39	463	38	37	48	281	1338	40	51	1698	589
Future Volume (veh/h)	452	39	463	38	37	48	281	1338	40	51	1698	589
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	533	0	270	42	41	36	312	1487	27	57	1887	376
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	603	0	439	101	108	84	372	2388	43	73	2015	894
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.11	0.46	0.46	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1900	1480	3456	5164	94	1781	5106	1585
Grp Volume(v), veh/h	533	0	270	42	38	39	312	980	534	57	1887	376
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1604	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	19.0	0.0	19.3	3.0	2.7	3.1	11.5	28.3	28.3	4.1	46.1	17.6
Cycle Q Clear(g_c), s	19.0	0.0	19.3	3.0	2.7	3.1	11.5	28.3	28.3	4.1	46.1	17.6
Prop In Lane	1.00		1.00	1.00		0.92	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	603	0	439	101	101	91	372	1575	857	73	2015	894
V/C Ratio(X)	0.88	0.00	0.62	0.41	0.38	0.43	0.84	0.62	0.62	0.78	0.94	0.42
Avail Cap(c_a), veh/h	671	0	469	101	101	91	651	1762	960	119	2015	894
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	41.0	59.2	59.1	59.3	56.9	26.4	26.4	61.7	37.8	16.2
Incr Delay (d2), s/veh	11.6	0.0	1.4	1.0	0.9	1.2	2.0	0.3	0.6	6.5	9.8	1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	9.5	0.0	7.7	1.4	1.2	1.3	5.1	11.4	12.5	2.0	20.8	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.3	0.0	42.4	60.2	59.9	60.4	58.9	26.7	27.0	68.2	47.6	17.7
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		803			119		1826			2320		
Approach Delay, s/veh		57.0			60.2		32.3			43.3		
Approach LOS		E			E		C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	65.8		27.5	19.5	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	6.1	30.3		21.3	13.5	48.1		5.1				
Green Ext Time (p_c), s	0.0	2.2		0.7	0.5	1.6		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Background 2021 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

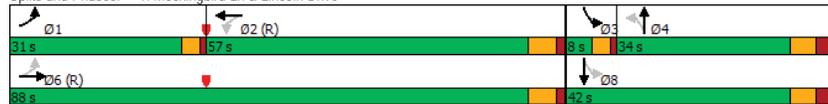
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	250	881	21	932	7	63	61	48
Future Volume (vph)	250	881	21	932	7	63	61	48
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	101.1	99.1	77.4	77.4	12.0	12.0	20.9	18.4
Actuated g/C Ratio	0.78	0.76	0.60	0.60	0.09	0.09	0.16	0.14
v/c Ratio	0.60	0.38	0.07	0.53	0.10	0.51	0.38	0.67
Control Delay	11.6	6.0	31.0	38.2	55.1	60.0	52.2	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	6.0	31.0	38.2	55.1	60.0	52.2	32.7
LOS	B	A	C	D	E	E	D	C
Approach Delay		7.2		38.0		59.6		37.1
Approach LOS		A		D		E		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 24.5	Intersection LOS: C
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Background 2021 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	250	881	29	21	932	59	7	63	18	61	48	159
Future Volume (veh/h)	250	881	29	21	932	59	7	63	18	61	48	159
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	979	21	23	1036	44	8	70	11	68	53	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	524	2723	58	431	2317	98	101	121	19	155	70	160
Arrive On Green	0.07	0.77	0.77	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3557	76	563	3473	147	1211	1578	248	1781	506	1156
Grp Volume(v), veh/h	278	489	511	23	530	550	8	0	81	68	0	174
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	563	1777	1844	1211	0	1826	1781	0	1662
Q Serve(g_s), s	6.0	11.6	11.6	0.0	0.0	0.0	0.8	0.0	5.6	4.0	0.0	13.1
Cycle Q Clear(g_c), s	6.0	11.6	11.6	0.0	0.0	0.0	5.9	0.0	5.6	4.0	0.0	13.1
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.14	1.00		0.70
Lane Grp Cap(c), veh/h	524	1360	1421	431	1185	1230	101	0	140	155	0	230
V/C Ratio(X)	0.53	0.36	0.36	0.05	0.45	0.45	0.08	0.00	0.58	0.44	0.00	0.76
Avail Cap(c_a), veh/h	774	1360	1421	431	1185	1230	264	0	386	155	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	4.9	4.9	0.0	0.0	0.0	60.6	0.0	58.0	53.0	0.0	53.9
Incr Delay (d2), s/veh	0.8	0.7	0.7	0.2	0.8	0.8	0.3	0.0	3.7	1.9	0.0	5.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.1	4.0	4.2	0.0	0.3	0.3	0.3	0.0	2.7	0.3	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	5.7	5.7	5.6	0.2	0.8	0.8	60.9	0.0	61.7	55.0	0.0	58.9
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	E
Approach Vol, veh/h		1278			1103			89				242
Approach Delay, s/veh		5.7			0.8			61.6				57.8
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	12.8	92.7	8.0	16.5		105.5		24.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5		82.0		35.5				
Max Q Clear Time (g_c+I), s	8.0	2.0	6.0	7.9		13.6		15.1				
Green Ext Time (p_c), s	0.8	9.7	0.0	0.4		8.4		0.9				

Intersection Summary

HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Background 2021 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

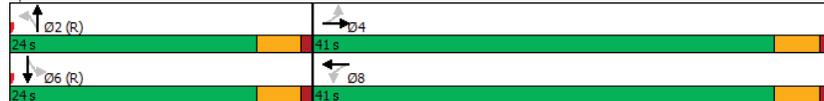
Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	WBT	NBT	SBL	SBT
Lane Configurations	↔	↕	↕	↕	↔	↕
Traffic Volume (vph)	85	890	916	0	14	0
Future Volume (vph)	85	890	916	0	14	0
Turn Type	Perm	NA	NA	NA	Perm	NA
Protected Phases		4	8	2		6
Permitted Phases	4				6	
Detector Phase	4	4	8	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	28.9	28.9	28.9	27.1	27.1	27.1
Actuated g/C Ratio	0.44	0.44	0.44	0.42	0.42	0.42
v/c Ratio	0.69	0.63	0.67	0.00	0.16	0.16
Control Delay	44.6	18.8	18.4	0.0	5.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	18.8	18.4	0.0	5.9	5.9
LOS	D	B	B	A	A	A
Approach Delay		21.0	18.4		5.9	
Approach LOS		C	B		A	

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 55.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Background 2021 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕			↕		↔	↕	
Traffic Volume (veh/h)	85	890	1	0	916	25	0	0	2	14	0	93
Future Volume (veh/h)	85	890	1	0	916	25	0	0	2	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	989	1	0	1018	28	0	0	2	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	1481	1	111	1436	39	0	0	721	122	38	623
Arrive On Green	0.81	0.81	0.81	0.00	0.81	0.81	0.00	0.00	0.46	0.46	0.00	0.46
Sat Flow, veh/h	539	3643	4	569	3533	97	0	0	1585	129	84	1370
Grp Volume(v), veh/h	94	482	508	0	512	534	0	0	2	119	0	0
Grp Sat Flow(s),veh/h/ln	539	1777	1870	569	1777	1853	0	0	1585	1582	0	0
Q Serve(g_s), s	7.9	7.2	7.2	0.0	8.3	8.3	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.7	7.2	7.2	0.0	8.3	8.3	0.0	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.05	0.00		1.00	0.13		0.87
Lane Grp Cap(c), veh/h	257	722	760	111	722	753	0	0	721	783	0	0
V/C Ratio(X)	0.37	0.67	0.67	0.00	0.71	0.71	0.00	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	341	998	1050	199	998	1040	0	0	721	783	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	4.3	4.3	0.0	4.4	4.4	0.0	0.0	9.7	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.0	1.4	1.4	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.6	0.0	1.7	1.7	0.0	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	5.3	5.2	0.0	5.8	5.7	0.0	0.0	9.7	10.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1084			1046			2			119	
Approach Delay, s/veh		5.6			5.8			9.7			10.8	
Approach LOS		A			A			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.3		30.7		34.3		30.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I1), s		2.0		18.7		4.8		10.3				
Green Ext Time (p_c), s		0.0		7.3		0.5		7.8				

Intersection Summary

HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Background 2021 PM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	906	0	0	940	0	0
Future Vol, veh/h	906	0	0	940	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1007	0	0	1044	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	504
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*732
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*732
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-

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

Background 2021 PM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	0	2	0	0	1
Future Vol, veh/h	0	0	2	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	2	0	0	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	3	2	0
Stage 1	2	-	-
Stage 2	1	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1019	1082	1620
Stage 1	1021	-	-
Stage 2	1022	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1019	1082	1620
Mov Cap-2 Maneuver	1019	-	-
Stage 1	1021	-	-
Stage 2	1022	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1620	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-

Background 2021 PM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	907	0	0	940	2	0
Future Vol, veh/h	907	0	0	940	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1008	0	0	1044	2	0

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1008	0	1530	504
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	522	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1048	-	*108	*732
Stage 1	-	-	-	-	*650	-
Stage 2	-	-	-	-	*652	-
Platoon blocked, %	-	-	1	-	-	1
Mov Cap-1 Maneuver	-	-	1048	-	*108	*732
Mov Cap-2 Maneuver	-	-	-	-	*346	-
Stage 1	-	-	-	-	*650	-
Stage 2	-	-	-	-	*652	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	346	-	-	1048	-
HCM Lane V/C Ratio	0.006	-	-	-	-
HCM Control Delay (s)	15.5	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2021 PM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	907	0	0	939	2	3
Future Vol, veh/h	907	0	0	939	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1008	0	0	1043	2	3

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1008	0	1530	504
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	522	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1048	-	*108	*732
Stage 1	-	-	-	-	*650	-
Stage 2	-	-	-	-	*652	-
Platoon blocked, %	-	-	1	-	-	1
Mov Cap-1 Maneuver	-	-	1048	-	*108	*732
Mov Cap-2 Maneuver	-	-	-	-	*346	-
Stage 1	-	-	-	-	*650	-
Stage 2	-	-	-	-	*652	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	506	-	-	1048	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	12.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2021 PM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	7	847	41	6	842	9	66	3	47	7	0	34
Future Vol, veh/h	7	847	41	6	842	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	941	46	7	936	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	946	0	0	987
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	1075
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	1075
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	16.8	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	433	*1106	-	-	1075	-	-	338	739
HCM Lane V/C Ratio	0.298	0.007	-	-	0.006	-	-	0.023	0.051
HCM Control Delay (s)	16.8	8.3	-	-	8.4	-	-	15.9	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.1	0.2

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

Background 2021 PM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	11	841	53	61	840	8	14	1	89	4	0	7
Future Vol, veh/h	11	841	53	61	840	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	934	59	68	933	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	942	0	0	993
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	1067
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	1067
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.2	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	618	*1106	-	-	1067	-	-	271	739
HCM Lane V/C Ratio	0.187	0.011	-	-	0.064	-	-	0.016	0.011
HCM Control Delay (s)	12.2	8.3	-	-	8.6	-	-	18.5	9.9
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

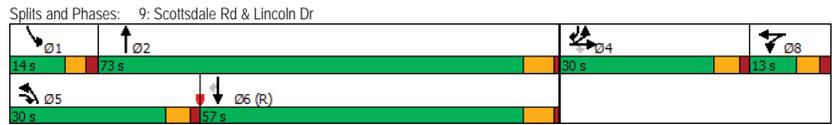
Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Background 2021 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	490	57	414	57	63	407	1652	62	1595	483
Future Volume (vph)	490	57	414	57	63	407	1652	62	1595	483
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	13.0	13.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	24.5	24.5	45.6	7.4	7.4	21.1	70.3	7.9	54.7	84.9
Actuated g/C Ratio	0.19	0.19	0.35	0.06	0.06	0.16	0.54	0.06	0.42	0.65
v/c Ratio	0.97	0.94	0.77	0.63	0.58	0.81	0.69	0.64	0.83	0.50
Control Delay	79.1	74.2	35.9	86.9	37.8	64.3	24.1	86.0	38.2	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.1	74.2	35.9	86.9	37.8	64.3	24.1	86.0	38.2	11.2
LOS	E	E	D	F	D	E	C	F	D	B
Approach Delay		59.1			52.3		31.9		33.5	
Approach LOS		E			D		C		C	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.97
Intersection Signal Delay:	38.1
Intersection Capacity Utilization:	82.2%
ICU Level of Service:	E
Analysis Period (min):	15



Background 2021 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	490	57	414	57	63	73	407	1652	46	62	1595	483
Future Volume (veh/h)	490	57	414	57	63	73	407	1652	46	62	1595	483
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	589	0	238	63	70	59	452	1836	34	69	1772	270
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	643	0	520	101	109	83	511	2553	47	88	2015	912
Arrive On Green	0.18	0.00	0.18	0.06	0.06	0.06	0.15	0.49	0.49	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1922	1462	3456	5162	96	1781	5106	1585
Grp Volume(v), veh/h	589	0	238	63	64	65	452	1211	659	69	1772	270
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1607	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.1	0.0	15.4	4.5	4.6	5.2	16.7	36.3	36.3	5.0	41.8	11.3
Cycle Q Clear(g_c), s	21.1	0.0	15.4	4.5	4.6	5.2	16.7	36.3	36.3	5.0	41.8	11.3
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	643	0	520	101	101	91	511	1684	917	88	2015	912
V/C Ratio(X)	0.92	0.00	0.46	0.62	0.63	0.71	0.89	0.72	0.72	0.79	0.88	0.30
Avail Cap(c_a), veh/h	671	0	533	101	101	91	651	1762	959	119	2015	912
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	34.5	59.9	60.0	60.2	54.3	25.8	25.8	61.1	36.5	14.1
Incr Delay (d2), s/veh	16.4	0.0	0.2	8.4	9.6	19.5	10.0	1.1	2.1	14.7	5.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.0	6.0	2.3	2.3	2.6	8.0	14.7	16.3	2.6	18.2	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.7	0.0	34.7	68.4	69.5	79.7	64.3	26.9	27.9	75.8	42.4	15.0
LnGrp LOS	E	A	C	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		827			192		2322			2111		
Approach Delay, s/veh		59.0			72.6		34.5			40.0		
Approach LOS		E			E		C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	70.0		29.0	24.7	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	7.0	38.3		23.1	18.7	43.8		7.2				
Green Ext Time (p_c), s	0.0	3.0		0.4	0.5	2.5		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

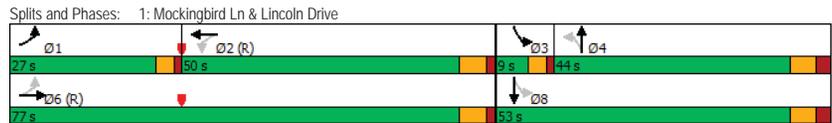
Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖↗	↖	↖
Traffic Volume (vph)	226	977	23	905	5	35	76	92
Future Volume (vph)	226	977	23	905	5	35	76	92
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (%)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	93.5	91.5	68.9	68.9	17.1	17.1	28.5	26.0
Actuated g/C Ratio	0.72	0.70	0.53	0.53	0.13	0.13	0.22	0.20
v/c Ratio	0.60	0.43	0.11	0.54	0.10	0.23	0.32	0.83
Control Delay	15.1	9.6	33.8	37.3	47.8	33.6	42.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	9.6	33.8	37.3	47.8	33.6	42.8	50.2
LOS	B	A	C	D	D	C	D	D
Approach Delay		10.6		37.2		34.9		48.8
Approach LOS		B		D		C		D

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	26.6
Intersection Capacity Utilization:	73.0%
ICU Level of Service:	C
Analysis Period (min):	15



Total 2021 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙									
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖↗		↖	↖	↖	↖	↖↗		↖	↖↗		↖	↖↗		↖	↖	↖	
Traffic Volume (veh/h)	226	977	31	23	905	43	5	35	20	76	92	237	226	977	31	23	905	43	5	35	20	76	92	237	
Future Volume (veh/h)	226	977	31	23	905	43	5	35	20	76	92	237	226	977	31	23	905	43	5	35	20	76	92	237	
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No		No		No		No		No		No		No		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772	
Adj Flow Rate, veh/h	251	1086	23	26	1006	31	6	39	13	84	102	152	251	1086	23	26	1006	31	6	39	13	84	102	152	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	500	2761	58	359	2362	73	85	138	46	212	119	177	500	2761	58	359	2362	73	85	138	46	212	119	177	
Arrive On Green	0.07	0.74	0.74	1.00	1.00	1.00	0.10	0.10	0.10	0.04	0.17	0.17	0.07	0.74	0.74	1.00	1.00	1.00	0.10	0.10	0.10	0.04	0.17	0.17	
Sat Flow, veh/h	1688	3746	79	481	3704	114	1066	1413	471	1688	714	1064	1688	3746	79	481	3704	114	1066	1413	471	1688	714	1064	
Grp Volume(v), veh/h	251	542	567	26	508	529	6	0	52	84	0	254	251	542	567	26	508	529	6	0	52	84	0	254	
Grp Sat Flow(s),veh/h/ln	1688	1870	1955	481	1870	1948	1066	0	1884	1688	0	1777	1688	1870	1955	481	1870	1948	1066	0	1884	1688	0	1777	
Q Serve(g_s), s	6.3	14.0	14.0	0.1	0.0	0.0	0.7	0.0	3.3	5.0	0.0	18.1	6.3	14.0	14.0	0.1	0.0	0.0	0.7	0.0	3.3	5.0	0.0	18.1	
Cycle Q Clear(g_c), s	6.3	14.0	14.0	1.1	0.0	0.0	9.8	0.0	3.3	5.0	0.0	18.1	6.3	14.0	14.0	1.1	0.0	0.0	9.8	0.0	3.3	5.0	0.0	18.1	
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.25	1.00		0.60	1.00		0.04	1.00		0.06	1.00		0.25	1.00		0.60	
Lane Grp Cap(c), veh/h	500	1379	1441	359	1192	1242	85	0	184	212	0	296	500	1379	1441	359	1192	1242	85	0	184	212	0	296	
V/C Ratio(X)	0.50	0.39	0.39	0.07	0.43	0.43	0.07	0.00	0.28	0.40	0.00	0.86	0.50	0.39	0.39	0.07	0.43	0.43	0.07	0.00	0.28	0.40	0.00	0.86	
Avail Cap(c_a), veh/h	683	1379	1441	359	1192	1242	289	0	543	212	0	636	683	1379	1441	359	1192	1242	289	0	543	212	0	636	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	5.9	6.3	6.3	0.0	0.0	0.0	61.8	0.0	54.4	50.0	0.0	52.7	5.9	6.3	6.3	0.0	0.0	0.0	61.8	0.0	54.4	50.0	0.0	52.7	
Incr Delay (d2), s/veh	0.8	0.8	0.8	0.3	0.9	0.9	0.3	0.0	0.8	1.2	0.0	7.1	0.8	0.8	0.8	0.3	0.9	0.9	0.3	0.0	0.8	1.2	0.0	7.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.2	5.4	5.6	0.0	0.3	0.3	0.2	0.0	1.6	0.3	0.0	8.6	2.2	5.4	5.6	0.0	0.3	0.3	0.2	0.0	1.6	0.3	0.0	8.6	
Unsig. Movement Delay, s/veh																									
LnGrp Delay(d),s/veh	6.7	7.2	7.1	0.3	0.9	0.9	62.1	0.0	55.3	51.2	0.0	59.7	6.7	7.2	7.1	0.3	0.9	0.9	62.1	0.0	55.3	51.2	0.0	59.7	
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	E	A	A	A	A	A	A	E	A	E	D	A	E	
Approach Vol, veh/h		1360			1063			58		338				1360			1063			58		338			
Approach Delay, s/veh		7.1			0.9			56.0		57.6				7.1			0.9			56.0		57.6			
Approach LOS		A			A			E		E				A			A			E		E			
Timer - Assigned Phs	1	2	3	4		6		8					1	2	3	4		6		8					
Phs Duration (G+Y+Rc), s	12.9	88.9	9.0	19.2		101.8		28.2					12.9	88.9	9.0	19.2		101.8		28.2					
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5					4.0	6.0	4.0	6.5		6.0		6.5					
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5					23.0	44.0	5.0	37.5		71.0		46.5					
Max Q Clear Time (g_c+I1), s	8.3	3.1	7.0	11.8		16.0		20.1					8.3	3.1	7.0	11.8		16.0		20.1					
Green Ext Time (p_c), s	0.6	9.1	0.0	0.2		9.8		1.6					0.6	9.1	0.0	0.2		9.8		1.6					

Total 2021 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

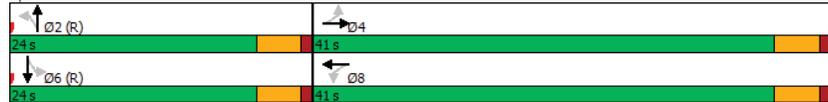
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗		↖		↖
Traffic Volume (vph)	115	1017	22	863	6	0	26	0
Future Volume (vph)	115	1017	22	863	6	0	26	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	31.3	31.3	31.3	31.3	24.7	24.7	24.7	24.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38
v/c Ratio	0.68	0.67	0.18	0.57	0.03	0.16	0.16	0.16
Control Delay	38.9	18.7	12.6	15.3	6.2	7.8	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	18.7	12.6	15.3	6.2	7.8	7.8	7.8
LOS	D	B	B	B	A	A	A	A
Approach Delay		20.8		15.2		6.3		7.8
Approach LOS		C		B		A		A

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 17.8	Intersection LOS: B
Intersection Capacity Utilization 50.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Total 2021 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖			↖	↖
Traffic Volume (veh/h)	115	1017	8	22	863	12	6	0	10	26	0	65
Future Volume (veh/h)	115	1017	8	22	863	12	6	0	10	26	0	65
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1130	9	24	959	13	7	0	11	29	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1498	12	244	1488	20	305	32	409	234	36	494
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	578	3613	29	494	3590	49	511	71	915	364	81	1105
Grp Volume(v), veh/h	128	556	583	24	475	497	18	0	101	0	0	0
Grp Sat Flow(s),veh/h/ln	578	1777	1865	494	1777	1862	1497	0	0	1550	0	0
Q Serve(g_s), s	9.5	9.3	9.3	1.6	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	9.3	9.3	11.0	6.4	6.4	0.4	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.03	0.39		0.61	0.29		0.71
Lane Grp Cap(c), veh/h	293	737	773	244	737	772	746	0	0	764	0	0
V/C Ratio(X)	0.44	0.75	0.75	0.10	0.64	0.64	0.02	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	378	998	1047	317	998	1045	746	0	0	764	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	4.0	4.0	6.6	3.8	3.8	10.0	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	2.0	2.0	0.2	1.0	0.9	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.8	1.9	0.1	1.3	1.4	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	6.1	6.0	6.7	4.7	4.7	10.1	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1267			996			18				101
Approach Delay, s/veh		6.2			4.8			10.1				10.9
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.6		31.4		33.6		31.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.4		18.0		4.3		13.0				
Green Ext Time (p_c), s		0.0		8.8		0.4		7.2				

Intersection Summary

HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A

Total 2021 AM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1045	5	0	893	0	12
Future Vol, veh/h	1045	5	0	893	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1161	6	0	992	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	584
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*636
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*636
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	636	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Control Delay (s)	10.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2021 AM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↓
Traffic Vol, veh/h	0	9	7	0	25	5
Future Vol, veh/h	0	9	7	0	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	8	0	28	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	70	8	8
Stage 1	8	-	-
Stage 2	62	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	934	1074	1612
Stage 1	1015	-	-
Stage 2	961	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	918	1074	1612
Mov Cap-2 Maneuver	918	-	-
Stage 1	998	-	-
Stage 2	961	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1074	1612	-
HCM Lane V/C Ratio	-	0.009	0.017	-
HCM Control Delay (s)	-	8.4	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0.1	-

Total 2021 AM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1057	4	0	889	0	3
Future Vol, veh/h	1057	4	0	889	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1174	4	0	988	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1178	0	1670
Stage 1	-	-	-	-	1176
Stage 2	-	-	-	-	494
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*952	-	*87
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*952	-	*87
Mov Cap-2 Maneuver	-	-	-	-	*329
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	*952	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 AM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1056	2	5	889	0	3
Future Vol, veh/h	1056	2	5	889	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1173	2	6	988	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1175	0	1680
Stage 1	-	-	-	-	1174
Stage 2	-	-	-	-	506
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*952	-	*86
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*952	-	*85
Mov Cap-2 Maneuver	-	-	-	-	*327
Stage 1	-	-	-	-	*597
Stage 2	-	-	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	*952	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-
HCM Control Delay (s)	10.7	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 AM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	998	34	18	828	10	50	0	29	5	0	12
Future Vol, veh/h	26	998	34	18	828	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1109	38	20	920	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	931	0	0	1147
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	968
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	968
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	17.8	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	369	*1106	-	-	968	-	-	313	739
HCM Lane V/C Ratio	0.238	0.026	-	-	0.021	-	-	0.018	0.018
HCM Control Delay (s)	17.8	8.3	-	-	8.8	-	-	16.7	10
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Total 2021 AM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	977	53	43	841	8	6	0	41	4	1	12
Future Vol, veh/h	3	977	53	43	841	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1086	59	48	934	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	943	0	0	1145
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	971
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	971
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.6	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	595	*1106	-	-	971	-	-	291	739
HCM Lane V/C Ratio	0.088	0.003	-	-	0.049	-	-	0.015	0.018
HCM Control Delay (s)	11.6	8.3	-	-	8.9	-	-	17.6	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

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

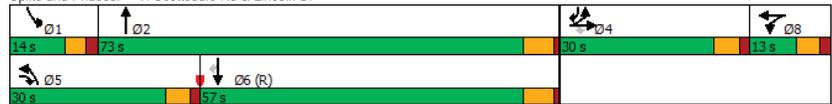
Total 2021 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Future Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	C-Max	None	None
Act Effct Green (s)	23.8	23.8	42.8	7.4	7.4	19.1	71.2	7.6	57.5	86.9
Actuated g/C Ratio	0.18	0.18	0.33	0.06	0.06	0.15	0.55	0.06	0.44	0.67
v/c Ratio	0.90	0.90	0.92	0.42	0.40	0.64	0.55	0.55	0.84	0.59
Control Delay	66.6	66.0	51.6	72.4	33.9	57.5	20.7	79.0	37.4	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	66.0	51.6	72.4	33.9	57.5	20.7	79.0	37.4	10.9
LOS	E	E	D	E	C	E	C	E	D	B
Approach Delay		59.2			45.8		27.1		31.6	
Approach LOS		E			D		C		C	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	35.7
Intersection Capacity Utilization:	82.0%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Future Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	542	0	277	42	41	36	322	1487	27	57	1887	389
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	613	0	448	101	108	84	382	2404	44	73	2015	898
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.11	0.47	0.47	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1900	1480	3456	5164	94	1781	5106	1585
Grp Volume(v), veh/h	542	0	277	42	38	39	322	980	534	57	1887	389
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1604	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	19.3	0.0	19.7	3.0	2.7	3.1	11.9	28.1	28.1	4.1	46.1	18.3
Cycle Q Clear(g_c), s	19.3	0.0	19.7	3.0	2.7	3.1	11.9	28.1	28.1	4.1	46.1	18.3
Prop In Lane	1.00		1.00	1.00		0.92	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	613	0	448	101	101	91	382	1584	863	73	2015	898
V/C Ratio(X)	0.88	0.00	0.62	0.41	0.38	0.43	0.84	0.62	0.62	0.78	0.94	0.43
Avail Cap(c_a), veh/h	671	0	474	101	101	91	651	1762	960	119	2015	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	40.5	59.2	59.1	59.3	56.7	26.1	26.1	61.7	37.8	16.2
Incr Delay (d2), s/veh	11.7	0.0	1.5	1.0	0.9	1.2	2.0	0.3	0.6	6.5	9.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	7.9	1.4	1.2	1.3	5.3	11.4	12.5	2.0	20.8	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	42.1	60.2	59.9	60.4	58.7	26.4	26.7	68.2	47.6	17.7
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		819			119			1836			2333	
Approach Delay, s/veh		56.8			60.2			32.2			43.1	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	66.2		27.9	19.9	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	6.1	30.1		21.7	13.9	48.1		5.1				
Green Ext Time (p_c), s	0.0	2.2		0.6	0.5	1.6		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Notes  
User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

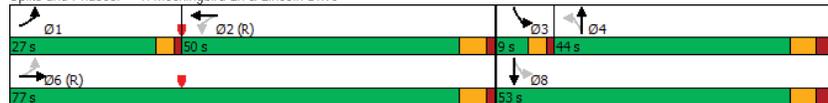
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖↗	↖	↖
Traffic Volume (vph)	226	977	23	905	5	35	76	92
Future Volume (vph)	226	977	23	905	5	35	76	92
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (%)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	93.5	91.5	68.9	68.9	17.1	17.1	28.5	26.0
Actuated g/C Ratio	0.72	0.70	0.53	0.53	0.13	0.13	0.22	0.20
v/c Ratio	0.60	0.43	0.11	0.54	0.10	0.23	0.32	0.83
Control Delay	15.1	9.6	33.8	37.3	47.8	33.6	42.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	9.6	33.8	37.3	47.8	33.6	42.8	50.2
LOS	B	A	C	D	D	C	D	D
Approach Delay		10.6		37.2		34.9		48.8
Approach LOS		B		D		C		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 26.6	Intersection LOS: C
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Total 2021 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖↗		↖	↖	↖				
Traffic Volume (veh/h)	226	977	31	23	905	43	5	35	20	76	92	237				
Future Volume (veh/h)	226	977	31	23	905	43	5	35	20	76	92	237				
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Work Zone On Approach	No		No		No		No		No			No				
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772				
Adj Flow Rate, veh/h	251	1086	23	26	1006	31	6	39	13	84	102	152				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	500	2761	58	359	2362	73	85	138	46	212	119	177				
Arrive On Green	0.07	0.74	0.74	1.00	1.00	1.00	0.10	0.10	0.10	0.04	0.17	0.17				
Sat Flow, veh/h	1688	3746	79	481	3704	114	1066	1413	471	1688	714	1064				
Grp Volume(v), veh/h	251	542	567	26	508	529	6	0	52	84	0	254				
Grp Sat Flow(s),veh/h/ln	1688	1870	1955	481	1870	1948	1066	0	1884	1688	0	1777				
Q Serve(g_s), s	6.3	14.0	14.0	0.1	0.0	0.0	0.7	0.0	3.3	5.0	0.0	18.1				
Cycle Q Clear(g_c), s	6.3	14.0	14.0	1.1	0.0	0.0	9.8	0.0	3.3	5.0	0.0	18.1				
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.25	1.00		0.60				
Lane Grp Cap(c), veh/h	500	1379	1441	359	1192	1242	85	0	184	212	0	296				
V/C Ratio(X)	0.50	0.39	0.39	0.07	0.43	0.43	0.07	0.00	0.28	0.40	0.00	0.86				
Avail Cap(c_a), veh/h	683	1379	1441	359	1192	1242	289	0	543	212	0	636				
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00				
Uniform Delay (d), s/veh	5.9	6.3	6.3	0.0	0.0	0.0	61.8	0.0	54.4	50.0	0.0	52.7				
Incr Delay (d2), s/veh	0.8	0.8	0.8	0.3	0.9	0.9	0.3	0.0	0.8	1.2	0.0	7.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	2.2	5.4	5.6	0.0	0.3	0.3	0.2	0.0	1.6	0.3	0.0	8.6				
Unsig. Movement Delay, s/veh																
LnGrp Delay(d),s/veh	6.7	7.2	7.1	0.3	0.9	0.9	62.1	0.0	55.3	51.2	0.0	59.7				
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	E				
Approach Vol, veh/h		1360			1063			58			338					
Approach Delay, s/veh		7.1			0.9			56.0			57.6					
Approach LOS		A			A			E			E					
Timer - Assigned Phs	1	2	3	4		6		8								
Phs Duration (G+Y+Rc), s	12.9	88.9	9.0	19.2		101.8		28.2								
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5								
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5								
Max Q Clear Time (g_c+I1), s	8.3	3.1	7.0	11.8		16.0		20.1								
Green Ext Time (p_c), s	0.6	9.1	0.0	0.2		9.8		1.6								

Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Total 2021 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

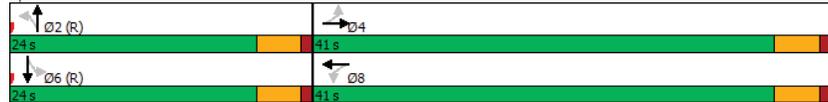
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↘	↕		↕	↕	↕
Traffic Volume (vph)	115	1017	22	863	6	0	26	0
Future Volume (vph)	115	1017	22	863	6	0	26	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	31.3	31.3	31.3	31.3	24.7	24.7	24.7	24.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38
v/c Ratio	0.68	0.67	0.18	0.57	0.03	0.16	0.16	0.16
Control Delay	38.9	18.7	12.6	15.3	6.2	7.8	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	18.7	12.6	15.3	6.2	7.8	7.8	7.8
LOS	D	B	B	B	A	A	A	A
Approach Delay		20.8		15.2		6.3		7.8
Approach LOS		C		B		A		A

Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 17.8  
 Intersection Capacity Utilization 50.3%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Total 2021 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↘	↕			↕		↕	↕	
Traffic Volume (veh/h)	115	1017	8	22	863	12	6	0	10	26	0	65
Future Volume (veh/h)	115	1017	8	22	863	12	6	0	10	26	0	65
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1130	9	24	959	13	7	0	11	29	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	1498	12	244	1488	20	305	32	409	234	36	494
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	578	3613	29	494	3590	49	511	71	915	364	81	1105
Grp Volume(v), veh/h	128	556	583	24	475	497	18	0	101	0	0	0
Grp Sat Flow(s),veh/h/ln	578	1777	1865	494	1777	1862	1497	0	0	1550	0	0
Q Serve(g_s), s	9.5	9.3	9.3	1.6	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.0	9.3	9.3	11.0	6.4	6.4	0.4	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.03	0.39		0.61	0.29		0.71
Lane Grp Cap(c), veh/h	293	737	773	244	737	772	746	0	0	764	0	0
V/C Ratio(X)	0.44	0.75	0.75	0.10	0.64	0.64	0.02	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	378	998	1047	317	998	1045	746	0	0	764	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	4.0	4.0	6.6	3.8	3.8	10.0	0.0	0.0	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.9	2.0	2.0	0.2	1.0	0.9	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.8	1.9	0.1	1.3	1.4	0.1	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.7	6.1	6.0	6.7	4.7	4.7	10.1	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1267			996			18				101
Approach Delay, s/veh		6.2			4.8			10.1				10.9
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.6		31.4		33.6		31.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I1), s		2.4		18.0		4.3		13.0				
Green Ext Time (p_c), s		0.0		8.8		0.4		7.2				

Intersection Summary

HCM 6th Ctrl Delay 5.8  
 HCM 6th LOS A

Total 2021 AM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1045	5	0	893	0	12
Future Vol, veh/h	1045	5	0	893	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1161	6	0	992	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	584
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*636
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*636
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	636	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Control Delay (s)	10.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2021 AM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↓
Traffic Vol, veh/h	0	9	7	0	25	5
Future Vol, veh/h	0	9	7	0	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	8	0	28	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	70	8	8
Stage 1	8	-	-
Stage 2	62	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	934	1074	1612
Stage 1	1015	-	-
Stage 2	961	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	918	1074	1612
Mov Cap-2 Maneuver	918	-	-
Stage 1	998	-	-
Stage 2	961	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1074	1612	-
HCM Lane V/C Ratio	-	0.009	0.017	-
HCM Control Delay (s)	-	8.4	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0.1	-

Total 2021 AM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1057	4	0	889	0	3
Future Vol, veh/h	1057	4	0	889	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1174	4	0	988	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1178	0	1670
Stage 1	-	-	-	-	1176
Stage 2	-	-	-	-	494
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*952	-	*87
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*952	-	*87
Mov Cap-2 Maneuver	-	-	-	-	*329
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	*952	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 AM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1056	2	5	889	0	3
Future Vol, veh/h	1056	2	5	889	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1173	2	6	988	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1175	0	1680
Stage 1	-	-	-	-	1174
Stage 2	-	-	-	-	506
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*952	-	*86
Stage 1	-	-	-	-	*600
Stage 2	-	-	-	-	*675
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*952	-	*85
Mov Cap-2 Maneuver	-	-	-	-	*327
Stage 1	-	-	-	-	*597
Stage 2	-	-	-	-	*675

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	*952	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-
HCM Control Delay (s)	10.7	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 AM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	998	34	18	828	10	50	0	29	5	0	12
Future Vol, veh/h	26	998	34	18	828	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1109	38	20	920	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	931	0	0	1147
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	968
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	968
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	17.8	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	369	*1106	-	-	968	-	-	313	739
HCM Lane V/C Ratio	0.238	0.026	-	-	0.021	-	-	0.018	0.018
HCM Control Delay (s)	17.8	8.3	-	-	8.8	-	-	16.7	10
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Total 2021 AM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	977	53	43	841	8	6	0	41	4	1	12
Future Vol, veh/h	3	977	53	43	841	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1086	59	48	934	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	943	0	0	1145
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	971
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1106	-	-	971
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.6	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	595	*1106	-	-	971	-	-	291	739
HCM Lane V/C Ratio	0.088	0.003	-	-	0.049	-	-	0.015	0.018
HCM Control Delay (s)	11.6	8.3	-	-	8.9	-	-	17.6	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

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

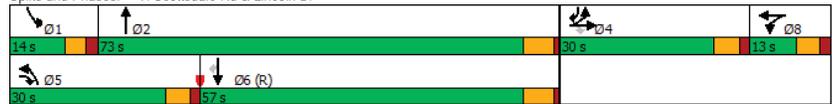
Total 2021 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Future Volume (vph)	460	39	469	38	37	290	1338	51	1698	600
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	C-Max	None	None
Act Effct Green (s)	23.8	23.8	42.8	7.4	7.4	19.1	71.2	7.6	57.5	86.9
Actuated g/C Ratio	0.18	0.18	0.33	0.06	0.06	0.15	0.55	0.06	0.44	0.67
v/c Ratio	0.90	0.90	0.92	0.42	0.40	0.64	0.55	0.55	0.84	0.59
Control Delay	66.6	66.0	51.6	72.4	33.9	57.5	20.7	79.0	37.4	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.6	66.0	51.6	72.4	33.9	57.5	20.7	79.0	37.4	10.9
LOS	E	E	D	E	C	E	C	E	D	B
Approach Delay		59.2			45.8		27.1		31.6	
Approach LOS		E			D		C		C	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	35.7
Intersection Capacity Utilization:	82.0%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Future Volume (veh/h)	460	39	469	38	37	48	290	1338	40	51	1698	600
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	542	0	277	42	41	36	322	1487	27	57	1887	389
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	613	0	448	101	108	84	382	2404	44	73	2015	898
Arrive On Green	0.17	0.00	0.17	0.06	0.06	0.06	0.11	0.47	0.47	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1900	1480	3456	5164	94	1781	5106	1585
Grp Volume(v), veh/h	542	0	277	42	38	39	322	980	534	57	1887	389
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1604	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	19.3	0.0	19.7	3.0	2.7	3.1	11.9	28.1	28.1	4.1	46.1	18.3
Cycle Q Clear(g_c), s	19.3	0.0	19.7	3.0	2.7	3.1	11.9	28.1	28.1	4.1	46.1	18.3
Prop In Lane	1.00		1.00	1.00		0.92	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	613	0	448	101	101	91	382	1584	863	73	2015	898
V/C Ratio(X)	0.88	0.00	0.62	0.41	0.38	0.43	0.84	0.62	0.62	0.78	0.94	0.43
Avail Cap(c_a), veh/h	671	0	474	101	101	91	651	1762	960	119	2015	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	40.5	59.2	59.1	59.3	56.7	26.1	26.1	61.7	37.8	16.2
Incr Delay (d2), s/veh	11.7	0.0	1.5	1.0	0.9	1.2	2.0	0.3	0.6	6.5	9.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	7.9	1.4	1.2	1.3	5.3	11.4	12.5	2.0	20.8	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	0.0	42.1	60.2	59.9	60.4	58.7	26.4	26.7	68.2	47.6	17.7
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		819			119		1836			2333		
Approach Delay, s/veh		56.8			60.2		32.2			43.1		
Approach LOS		E			E		C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	66.2		27.9	19.9	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	6.1	30.1		21.7	13.9	48.1		5.1				
Green Ext Time (p_c), s	0.0	2.2		0.6	0.5	1.6		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

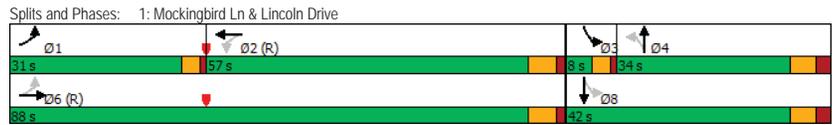
Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	250	891	22	941	7	63	63	48
Future Volume (vph)	250	891	22	941	7	63	63	48
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	101.0	99.0	77.4	77.4	12.1	12.1	21.0	18.5
Actuated g/C Ratio	0.78	0.76	0.60	0.60	0.09	0.09	0.16	0.14
v/c Ratio	0.61	0.38	0.08	0.53	0.10	0.52	0.39	0.67
Control Delay	12.0	6.0	31.0	38.3	54.9	59.7	52.5	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	6.0	31.0	38.3	54.9	59.7	52.5	32.6
LOS	B	A	C	D	D	E	D	C
Approach Delay		7.3		38.1		59.3		37.2
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	



Total 2021 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	250	891	29	22	941	61	7	63	20	63	48	159
Future Volume (veh/h)	250	891	29	22	941	61	7	63	20	63	48	159
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No								
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	990	21	24	1046	46	8	70	13	70	53	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	2723	58	427	2313	102	101	118	22	153	70	160
Arrive On Green	0.07	0.77	0.77	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3558	75	558	3467	152	1211	1534	285	1781	506	1156
Grp Volume(v), veh/h	278	494	517	24	536	556	8	0	83	70	0	174
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	558	1777	1843	1211	0	1819	1781	0	1662
Q Serve(g_s), s	6.0	11.8	11.8	0.0	0.0	0.0	0.8	0.0	5.7	4.0	0.0	13.1
Cycle Q Clear(g_c), s	6.0	11.8	11.8	0.0	0.0	0.0	5.9	0.0	5.7	4.0	0.0	13.1
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.16	1.00		0.70
Lane Grp Cap(c), veh/h	520	1360	1421	427	1185	1229	101	0	140	153	0	230
V/C Ratio(X)	0.53	0.36	0.36	0.06	0.45	0.45	0.08	0.00	0.59	0.46	0.00	0.76
Avail Cap(c_a), veh/h	770	1360	1421	427	1185	1229	264	0	385	153	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	5.0	5.0	0.0	0.0	0.0	60.6	0.0	58.0	53.3	0.0	53.9
Incr Delay (d2), s/veh	0.9	0.8	0.7	0.2	0.9	0.8	0.3	0.0	4.0	2.1	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.1	4.3	0.0	0.3	0.3	0.3	0.0	2.8	0.4	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	5.7	5.7	0.2	0.9	0.8	60.9	0.0	62.0	55.4	0.0	58.9
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1289			1116			91				244
Approach Delay, s/veh		5.7			0.8			61.9				57.9
Approach LOS		A			A			E				E

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	12.8 92.7 8.0 16.5 105.5 24.5
Change Period (Y+Rc), s	4.0 6.0 4.0 6.5 6.0 6.5
Max Green Setting (Gmax), s	27.0 51.0 4.0 27.5 82.0 35.5
Max Q Clear Time (g_c+I), s	8.0 2.0 6.0 7.9 13.8 15.1
Green Ext Time (p_c), s	0.8 9.9 0.0 0.4 8.5 0.9

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Total 2021 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

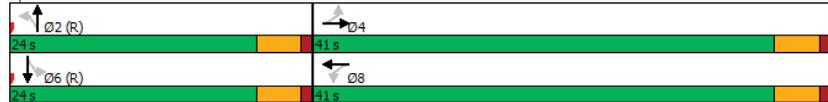
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↘	↕		↕	↕	↕
Traffic Volume (vph)	85	897	27	918	11	0	14	0
Future Volume (vph)	85	897	27	918	11	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.9	28.9	28.9	28.9	27.1	27.1	27.1	27.1
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.42	0.42	0.42	0.42
v/c Ratio	0.69	0.64	0.20	0.67	0.03	0.03	0.16	0.00
Control Delay	45.1	19.0	13.5	18.3	6.4	6.4	6.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	19.0	13.5	18.3	6.4	6.4	6.0	6.0
LOS	D	B	B	B	A	A	A	A
Approach Delay		21.3		18.1		6.4		6.0
Approach LOS		C		B		A		A

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 18.9	Intersection LOS: B
Intersection Capacity Utilization 48.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Total 2021 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↘	↕			↕		↕	↕	
Traffic Volume (veh/h)	85	897	8	27	918	25	11	0	7	14	0	93
Future Volume (veh/h)	85	897	8	27	918	25	11	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	997	9	30	1020	28	12	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1469	13	271	1438	39	457	21	260	121	38	622
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	538	3609	33	560	3533	97	811	47	572	129	84	1369
Grp Volume(v), veh/h	94	491	515	30	513	535	20	0	119	0	0	0
Grp Sat Flow(s),veh/h/ln	538	1777	1864	560	1777	1853	1430	0	0	1582	0	0
Q Serve(g_s), s	7.9	7.5	7.5	1.7	8.2	8.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.6	7.5	7.5	9.6	8.2	8.2	0.4	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.60		0.40	0.13		0.87
Lane Grp Cap(c), veh/h	258	723	759	271	723	754	738	0	0	781	0	0
V/C Ratio(X)	0.36	0.68	0.68	0.11	0.71	0.71	0.03	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	341	998	1047	357	998	1040	738	0	0	781	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	4.3	4.3	6.4	4.3	4.3	9.8	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.2	1.4	1.4	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.6	0.1	1.7	1.7	0.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	5.3	5.3	6.5	5.8	5.7	9.9	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1100			1078			20				119
Approach Delay, s/veh		5.6			5.8			9.9				10.9
Approach LOS		A			A			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.3		30.7		34.3		30.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.4		18.6		4.8		11.6				
Green Ext Time (p_c), s		0.0		7.4		0.5		8.1				

Intersection Summary

HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Total 2021 PM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↓			↑↑		↑
Traffic Vol, veh/h	911	7	0	969	0	21
Future Vol, veh/h	911	7	0	969	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1012	8	0	1077	0	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	510
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*732
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*732
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	732	-	-	-
HCM Lane V/C Ratio	0.032	-	-	-
HCM Control Delay (s)	10.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2021 PM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↓		↑↓			↑↓
Traffic Vol, veh/h	0	15	2	0	34	1
Future Vol, veh/h	0	15	2	0	34	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	2	0	38	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	79	2	2
Stage 1	2	-	-
Stage 2	77	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	924	1082	1620
Stage 1	1021	-	-
Stage 2	946	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	903	1082	1620
Mov Cap-2 Maneuver	903	-	-
Stage 1	998	-	-
Stage 2	946	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1082	1620	-
HCM Lane V/C Ratio	-	0.015	0.023	-
HCM Control Delay (s)	-	8.4	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0.1	-

Total 2021 PM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	932	0	0	969	2	0
Future Vol, veh/h	932	0	0	969	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1036	0	0	1077	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1036	0	1575
Stage 1	-	-	-	-	1036
Stage 2	-	-	-	-	539
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1012	-	*101
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1012	-	*101
Mov Cap-2 Maneuver	-	-	-	-	*336
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	336	-	-	1012	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	15.8	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 PM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	932	0	0	968	2	3
Future Vol, veh/h	932	0	0	968	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1036	0	0	1076	2	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1036	0	1574
Stage 1	-	-	-	-	1036
Stage 2	-	-	-	-	538
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1012	-	*101
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1012	-	*101
Mov Cap-2 Maneuver	-	-	-	-	*336
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	497	-	-	1012	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	12.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 PM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↔	↕	↕		↕	↕	↔	↕	↕
Traffic Vol, veh/h	7	872	41	6	871	9	66	3	47	7	0	34
Future Vol, veh/h	7	872	41	6	871	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	969	46	7	968	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	978	0	0	1015
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1038
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1038
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	17.4	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	417	*1070	-	-	1038	-	-	331	715
HCM Lane V/C Ratio	0.309	0.007	-	-	0.006	-	-	0.023	0.053
HCM Control Delay (s)	17.4	8.4	-	-	8.5	-	-	16.1	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0.1	0.2

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

Total 2021 PM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↔	↕	↕		↕	↕	↔	↕	↕
Traffic Vol, veh/h	11	866	53	61	869	8	14	1	89	4	0	7
Future Vol, veh/h	11	866	53	61	869	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	962	59	68	966	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	975	0	0	1021
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1031
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1031
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.3	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	610	*1070	-	-	1031	-	-	272	715
HCM Lane V/C Ratio	0.189	0.011	-	-	0.066	-	-	0.016	0.011
HCM Control Delay (s)	12.3	8.4	-	-	8.7	-	-	18.5	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Total 2021 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

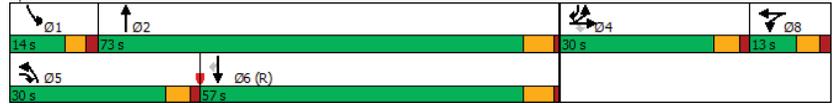
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	504	57	425	57	63	419	1652	62	1595	497
Future Volume (vph)	504	57	425	57	63	419	1652	62	1595	497
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	13.0	13.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	24.5	24.5	45.9	7.4	7.4	21.4	70.3	7.9	54.4	84.6
Actuated g/C Ratio	0.19	0.19	0.35	0.06	0.06	0.16	0.54	0.06	0.42	0.65
v/c Ratio	0.97	0.98	0.78	0.63	0.58	0.82	0.69	0.64	0.83	0.52
Control Delay	81.5	83.6	36.7	86.9	37.8	65.1	24.1	86.0	38.5	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.5	83.6	36.7	86.9	37.8	65.1	24.1	86.0	38.5	11.6
LOS	F	F	D	F	D	E	C	F	D	B
Approach Delay		62.8			52.3		32.2		33.7	
Approach LOS		E			D		C		C	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 39.0	Intersection LOS: D
Intersection Capacity Utilization 83.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2021 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	504	57	425	57	63	73	419	1652	46	62	1595	497
Future Volume (veh/h)	504	57	425	57	63	73	419	1652	46	62	1595	497
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00			1.00	1.00		1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	605	0	250	63	70	59	466	1836	34	69	1772	285
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	656	0	532	101	109	83	524	2573	48	88	2015	917
Arrive On Green	0.18	0.00	0.18	0.06	0.06	0.06	0.15	0.50	0.50	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1922	1462	3456	5162	96	1781	5106	1585
Grp Volume(v), veh/h	605	0	250	63	64	65	466	1211	659	69	1772	285
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1607	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.7	0.0	16.2	4.5	4.6	5.2	17.2	36.0	36.0	5.0	41.8	12.0
Cycle Q Clear(g_c), s	21.7	0.0	16.2	4.5	4.6	5.2	17.2	36.0	36.0	5.0	41.8	12.0
Prop In Lane	1.00		1.00	1.00			0.91	1.00		0.05	1.00	1.00
Lane Grp Cap(c), veh/h	656	0	532	101	101	91	524	1697	924	88	2015	917
V/C Ratio(X)	0.92	0.00	0.47	0.62	0.63	0.71	0.89	0.71	0.71	0.79	0.88	0.31
Avail Cap(c_a), veh/h	671	0	539	101	101	91	651	1762	959	119	2015	917
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	34.1	59.9	60.0	60.2	54.1	25.4	25.4	61.1	36.5	14.1
Incr Delay (d2), s/veh	17.7	0.0	0.2	8.4	9.6	19.5	10.8	1.1	2.0	14.7	5.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	0.0	6.3	2.3	2.3	2.6	8.3	14.6	16.1	2.6	18.2	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	0.0	34.3	68.4	69.5	79.7	64.9	26.5	27.4	75.8	42.4	14.9
LnGrp LOS	E	A	C	E	E	E	E	C	C	E	D	B
Approach Vol, veh/h		855			192		2336			2126		
Approach Delay, s/veh		59.5			72.6		34.4			39.8		
Approach LOS		E			E		C			D		

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	11.7	70.5	29.4	25.2	57.0	13.0
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	67.3	24.5	24.5	51.3	7.4
Max Q Clear Time (g_c+I), s	7.0	38.0	23.7	19.2	43.8	7.2
Green Ext Time (p_c), s	0.0	3.0	0.2	0.5	2.5	0.0

Intersection Summary

HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2021 PM Scenario 2 Mitigated  
1: Mockingbird Ln & Lincoln Drive

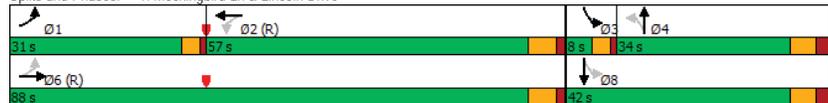
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	250	891	22	941	7	63	63	48
Future Volume (vph)	250	891	22	941	7	63	63	48
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	101.0	99.0	77.0	77.0	12.1	12.1	21.0	18.5
Actuated g/C Ratio	0.78	0.76	0.59	0.59	0.09	0.09	0.16	0.14
v/c Ratio	0.61	0.38	0.08	0.54	0.10	0.52	0.39	0.67
Control Delay	11.9	6.0	31.3	38.5	54.9	59.7	52.5	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	6.0	31.3	38.5	54.9	59.7	52.5	32.6
LOS	B	A	C	D	D	E	D	C
Approach Delay		7.3		38.3		59.3		37.2
Approach LOS		A		D		E		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Total 2021 PM Scenario 2 Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	250	891	29	22	941	61	7	63	20	63	48	159
Future Volume (veh/h)	250	891	29	22	941	61	7	63	20	63	48	159
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No								
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	278	990	21	24	1046	46	8	70	13	70	53	121
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	2723	58	427	2313	102	101	118	22	153	70	160
Arrive On Green	0.07	0.77	0.77	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3558	75	558	3467	152	1211	1534	285	1781	506	1156
Grp Volume(v), veh/h	278	494	517	24	536	556	8	0	83	70	0	174
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	558	1777	1843	1211	0	1819	1781	0	1662
Q Serve(g_s), s	6.0	11.8	11.8	0.0	0.0	0.0	0.8	0.0	5.7	4.0	0.0	13.1
Cycle Q Clear(g_c), s	6.0	11.8	11.8	0.0	0.0	0.0	5.9	0.0	5.7	4.0	0.0	13.1
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.16	1.00		0.70
Lane Grp Cap(c), veh/h	520	1360	1421	427	1185	1229	101	0	140	153	0	230
V/C Ratio(X)	0.53	0.36	0.36	0.06	0.45	0.45	0.08	0.00	0.59	0.46	0.00	0.76
Avail Cap(c_a), veh/h	770	1360	1421	427	1185	1229	264	0	385	153	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	5.0	5.0	0.0	0.0	0.0	60.6	0.0	58.0	53.3	0.0	53.9
Incr Delay (d2), s/veh	0.9	0.8	0.7	0.2	0.9	0.8	0.3	0.0	4.0	2.1	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.1	4.3	0.0	0.3	0.3	0.3	0.0	2.8	0.4	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	5.7	5.7	0.2	0.9	0.8	60.9	0.0	62.0	55.4	0.0	58.9
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1289			1116			91				244
Approach Delay, s/veh		5.7			0.8			61.9				57.9
Approach LOS		A			A			E				E

Timer - Assigned Phs	1	2	3	4	6	8
Phs Duration (G+Y+Rc), s	12.8	92.7	8.0	16.5	105.5	24.5
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	6.0	6.5
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5	82.0	35.5
Max Q Clear Time (g_c+I), s	8.0	2.0	6.0	7.9	13.8	15.1
Green Ext Time (p_c), s	0.8	9.9	0.0	0.4	8.5	0.9

Intersection Summary

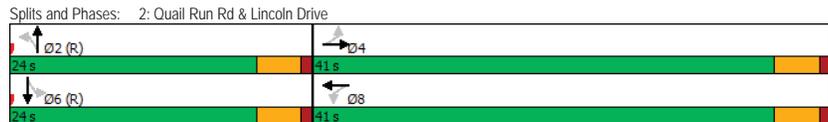
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Total 2021 PM Scenario 2 Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↘	↕		↕	↕	↕
Traffic Volume (vph)	85	897	27	918	11	0	14	0
Future Volume (vph)	85	897	27	918	11	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	29.0	29.0	29.0	29.0	27.0	27.0	27.0	27.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.42	0.42	0.42	0.42
v/c Ratio	0.69	0.64	0.20	0.66	0.03	0.16	0.16	0.16
Control Delay	44.1	18.8	12.1	17.9	6.4	6.0	6.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	18.8	12.1	17.9	6.4	6.0	6.0	6.0
LOS	D	B	B	B	A	A	A	A
Approach Delay		21.0		17.7	6.4	6.0	6.0	6.0
Approach LOS		C		B	A	A	A	A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	18.6
Intersection Capacity Utilization:	48.6%
Intersection LOS:	B
ICU Level of Service:	A
Analysis Period (min):	15



Total 2021 PM Scenario 2 Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↘	↕			↕		↕	↕	
Traffic Volume (veh/h)	85	897	8	27	918	25	11	0	7	14	0	93
Future Volume (veh/h)	85	897	8	27	918	25	11	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	997	9	30	1020	28	12	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	1469	13	271	1438	39	457	21	260	121	38	622
Arrive On Green	0.81	0.81	0.81	0.81	0.81	0.81	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	538	3609	33	560	3533	97	811	47	572	129	84	1369
Grp Volume(v), veh/h	94	491	515	30	513	535	20	0	119	0	0	0
Grp Sat Flow(s), veh/h/ln	538	1777	1864	560	1777	1853	1430	0	0	1582	0	0
Q Serve(g_s), s	7.9	7.5	7.5	1.7	8.2	8.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	16.6	7.5	7.5	9.6	8.2	8.2	0.4	0.0	0.0	2.8	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.60		0.40	0.13		0.87
Lane Grp Cap(c), veh/h	258	723	759	271	723	754	738	0	0	781	0	0
V/C Ratio(X)	0.36	0.68	0.68	0.11	0.71	0.71	0.03	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	341	998	1047	357	998	1040	738	0	0	781	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	4.3	4.3	6.4	4.3	4.3	9.8	0.0	0.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.2	1.4	1.4	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	1.5	1.6	0.1	1.7	1.7	0.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.0	5.3	5.3	6.5	5.8	5.7	9.9	0.0	0.0	10.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	A
Approach Vol, veh/h		1100			1078			20				119
Approach Delay, s/veh		5.6			5.8			9.9				10.9
Approach LOS		A			A			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.3		30.7		34.3		30.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.4		18.6		4.8		11.6				
Green Ext Time (p_c), s		0.0		7.4		0.5		8.1				

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A

Total 2021 PM Scenario 2 Mitigated  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↓			↑↑		↑
Traffic Vol, veh/h	911	7	0	969	0	21
Future Vol, veh/h	911	7	0	969	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1012	8	0	1077	0	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	510
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*732
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*732
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	732	-	-	-
HCM Lane V/C Ratio	0.032	-	-	-
HCM Control Delay (s)	10.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2021 PM Scenario 2 Mitigated  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↓		↑↓			↑↓
Traffic Vol, veh/h	0	15	2	0	34	1
Future Vol, veh/h	0	15	2	0	34	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	2	0	38	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	79	2	2
Stage 1	2	-	-
Stage 2	77	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	924	1082	1620
Stage 1	1021	-	-
Stage 2	946	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	903	1082	1620
Mov Cap-2 Maneuver	903	-	-
Stage 1	998	-	-
Stage 2	946	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1082	1620	-
HCM Lane V/C Ratio	-	0.015	0.023	-
HCM Control Delay (s)	-	8.4	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0.1	-

Total 2021 PM Scenario 2 Mitigated  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	932	0	0	969	2	0
Future Vol, veh/h	932	0	0	969	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1036	0	0	1077	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1036	0	1575
Stage 1	-	-	-	-	1036
Stage 2	-	-	-	-	539
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1012	-	*101
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1012	-	*101
Mov Cap-2 Maneuver	-	-	-	-	*336
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	336	-	-	1012	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	15.8	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 PM Scenario 2 Mitigated  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	932	0	0	968	2	3
Future Vol, veh/h	932	0	0	968	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1036	0	0	1076	2	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1036	0	1574
Stage 1	-	-	-	-	1036
Stage 2	-	-	-	-	538
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1012	-	*101
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1012	-	*101
Mov Cap-2 Maneuver	-	-	-	-	*336
Stage 1	-	-	-	-	*620
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	497	-	-	1012	-
HCM Lane V/C Ratio	0.011	-	-	-	-
HCM Control Delay (s)	12.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2021 PM Scenario 2 Mitigated  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	7	872	41	6	871	9	66	3	47	7	0	34
Future Vol, veh/h	7	872	41	6	871	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	969	46	7	968	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	978	0	0	1015
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1038
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1038
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	17.4	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	417	*1070	-	-	1038	-	-	331	715
HCM Lane V/C Ratio	0.309	0.007	-	-	0.006	-	-	0.023	0.053
HCM Control Delay (s)	17.4	8.4	-	-	8.5	-	-	16.1	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-	-	0.1	0.2

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

Total 2021 PM Scenario 2 Mitigated  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	11	866	53	61	869	8	14	1	89	4	0	7
Future Vol, veh/h	11	866	53	61	869	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	962	59	68	966	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	975	0	0	1021
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	1031
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	1031
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.3	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	610	*1070	-	-	1031	-	-	272	715
HCM Lane V/C Ratio	0.189	0.011	-	-	0.066	-	-	0.016	0.011
HCM Control Delay (s)	12.3	8.4	-	-	8.7	-	-	18.5	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Total 2021 PM Scenario 2 Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	504	57	425	57	63	419	1652	62	1595	497
Future Volume (vph)	504	57	425	57	63	419	1652	62	1595	497
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	13.0	13.0	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	18.6	18.6	13.0	16.7	11.0	16.0	18.5
Total Split (s)	35.0	35.0	23.0	20.0	20.0	23.0	62.0	13.0	52.0	35.0
Total Split (%)	26.9%	26.9%	17.7%	15.4%	15.4%	17.7%	47.7%	10.0%	40.0%	26.9%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	27.5	27.5	47.4	13.0	13.0	19.9	61.3	8.3	47.3	80.5
Actuated g/C Ratio	0.21	0.21	0.36	0.10	0.10	0.15	0.47	0.06	0.36	0.62
v/c Ratio	0.87	0.88	0.72	0.36	0.38	0.89	0.79	0.62	0.96	0.51
Control Delay	56.4	57.3	22.0	60.8	29.0	73.6	33.2	82.5	53.9	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	57.3	22.0	60.8	29.0	73.6	33.2	82.5	53.9	8.1
LOS	E	E	C	E	C	E	C	F	D	A
Approach Delay		41.8			38.3		41.2		44.2	
Approach LOS		D			D		D		D	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.96
Intersection Signal Delay:	42.4
Intersection Capacity Utilization:	87.6%
ICU Level of Service:	E
Analysis Period (min):	15



Total 2021 PM Scenario 2 Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	504	57	425	57	63	73	419	1652	46	62	1595	497
Future Volume (veh/h)	504	57	425	57	63	73	419	1652	46	62	1595	497
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	605	0	250	63	70	59	466	1836	34	69	1772	285
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	676	0	514	178	192	146	465	2287	42	88	1819	865
Arrive On Green	0.19	0.00	0.19	0.10	0.10	0.10	0.13	0.44	0.44	0.05	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1922	1462	3456	5162	96	1781	5106	1585
Grp Volume(v), veh/h	605	0	250	63	64	65	466	1211	659	69	1772	285
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1607	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.5	0.0	16.4	4.3	4.4	4.9	17.5	40.0	40.0	5.0	44.5	12.9
Cycle Q Clear(g_c), s	21.5	0.0	16.4	4.3	4.4	4.9	17.5	40.0	40.0	5.0	44.5	12.9
Prop In Lane	1.00		1.00	1.00		0.91	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	676	0	514	178	178	161	465	1508	821	88	1819	865
V/C Ratio(X)	0.89	0.00	0.49	0.35	0.36	0.40	1.00	0.80	0.80	0.79	0.97	0.33
Avail Cap(c_a), veh/h	808	0	573	197	197	178	465	1508	821	106	1819	865
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	0.0	35.2	54.6	54.6	54.9	56.2	31.3	31.3	61.1	41.3	16.3
Incr Delay (d2), s/veh	10.0	0.0	0.3	0.4	0.5	0.6	42.2	3.0	5.4	22.2	15.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.0	6.4	2.0	2.0	2.0	10.3	16.8	18.9	2.8	21.1	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	0.0	35.5	55.0	55.1	55.5	98.4	34.3	36.7	83.4	57.1	17.4
LnGrp LOS	E	A	D	E	E	E	F	C	D	F	E	B
Approach Vol, veh/h		855			192		2336			2126		
Approach Delay, s/veh		53.9			55.2		47.8			52.6		
Approach LOS		D			E		D			D		

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	11.7 63.3 30.2 23.0 52.0 18.6
Change Period (Y+Rc), s	* 5.3 5.7 5.5 5.5 5.7 5.6
Max Green Setting (Gmax), s	* 7.7 56.3 29.5 17.5 46.3 14.4
Max Q Clear Time (g_c+I), s	7.0 42.0 23.5 19.5 46.5 6.9
Green Ext Time (p_c), s	0.0 2.8 1.1 0.0 0.0 0.3

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX I**

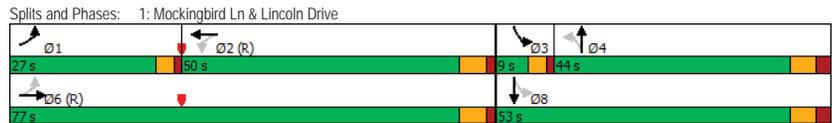
### **2026 PEAK HOUR ANALYSIS SCENARIO 1**

Background 2026 AM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	246	1044	24	973	6	38	80	100
Future Volume (vph)	246	1044	24	973	6	38	80	100
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	91.0	89.0	64.1	64.1	19.2	19.2	31.0	28.5
Actuated g/C Ratio	0.70	0.68	0.49	0.49	0.15	0.15	0.24	0.22
v/c Ratio	0.69	0.47	0.13	0.62	0.11	0.22	0.31	0.84
Control Delay	25.4	11.3	37.7	42.2	46.5	33.4	40.5	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	11.3	37.7	42.2	46.5	33.4	40.5	50.4
LOS	C	B	D	D	D	C	D	D
Approach Delay		13.9		42.1		34.7		48.6
Approach LOS		B		D		C		D

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	29.9
Intersection Capacity Utilization:	76.3%
Intersection LOS:	C
ICU Level of Service:	D
Analysis Period (min):	15



Background 2026 AM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	246	1044	33	24	973	46	6	38	20	80	100	257
Future Volume (veh/h)	246	1044	33	24	973	46	6	38	20	80	100	257
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	273	1160	37	27	1081	51	7	42	22	89	111	286
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	457	2405	77	273	1923	91	87	224	118	317	124	319
Arrive On Green	0.09	0.65	0.65	1.00	1.00	1.00	0.18	0.18	0.18	0.04	0.25	0.25
Sat Flow, veh/h	1688	3700	118	443	3637	172	935	1217	637	1688	487	1256
Grp Volume(v), veh/h	273	586	611	27	556	576	7	0	64	89	0	397
Grp Sat Flow(s),veh/h/ln	1688	1870	1948	443	1870	1938	935	0	1854	1688	0	1743
Q Serve(g_s), s	9.2	20.8	20.8	0.7	0.0	0.0	0.9	0.0	3.8	5.0	0.0	28.6
Cycle Q Clear(g_c), s	9.2	20.8	20.8	5.6	0.0	0.0	20.6	0.0	3.8	5.0	0.0	28.6
Prop In Lane	1.00		0.06	1.00		0.09	1.00		0.34	1.00		0.72
Lane Grp Cap(c), veh/h	457	1216	1266	273	989	1024	87	0	342	317	0	442
V/C Ratio(X)	0.60	0.48	0.48	0.10	0.56	0.56	0.08	0.00	0.19	0.28	0.00	0.90
Avail Cap(c_a), veh/h	603	1216	1266	273	989	1024	184	0	535	317	0	623
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	11.6	11.6	0.2	0.0	0.0	61.2	0.0	44.8	40.4	0.0	46.9
Incr Delay (d2), s/veh	1.2	1.4	1.3	0.6	1.9	1.8	0.4	0.0	0.3	0.5	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	8.8	9.1	0.0	0.5	0.5	0.2	0.0	1.8	2.4	0.0	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	13.0	12.9	0.8	1.9	1.8	61.6	0.0	45.0	40.9	0.0	59.1
LnGrp LOS	B	B	B	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1470			1159			71				486
Approach Delay, s/veh		12.7			1.8			46.7				55.7
Approach LOS		B			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	15.8	74.7	9.0	30.5		90.5		39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I1), s	11.2	7.6	7.0	22.6		22.8		30.6				
Green Ext Time (p_c), s	0.6	10.2	0.0	0.2		11.0		2.4				

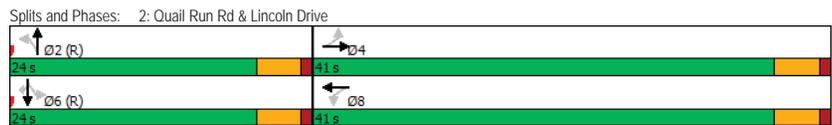
Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Background 2026 AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (vph)	115	1101	2	937	0	26	0	66
Future Volume (vph)	115	1101	2	937	0	26	0	66
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA	Perm
Protected Phases		4		8	2		6	
Permitted Phases	4		8			6		6
Detector Phase	4	4	8	8	2	6	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.6	32.6	32.6	32.6	23.4	23.4	23.4	23.4
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36
v/c Ratio	0.73	0.69	0.02	0.59	0.01	0.06	0.12	
Control Delay	47.3	20.5	9.5	14.8	0.0	16.3	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.3	20.5	9.5	14.8	0.0	16.3	5.5	
LOS	D	C	A	B	A	B	A	
Approach Delay		23.1		14.8			8.6	
Approach LOS		C		B			A	

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	18.9
Intersection Capacity Utilization:	54.1%
ICU Level of Service:	A
Analysis Period (min):	15



Background 2026 AM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	115	1101	3	2	937	12	0	0	8	26	0	66
Future Volume (veh/h)	115	1101	3	2	937	12	0	0	8	26	0	66
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1223	3	2	1041	13	0	0	9	29	0	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1556	4	242	1538	19	0	0	687	714	0	687
Arrive On Green	0.86	0.86	0.86	0.86	0.86	0.86	0.00	0.00	0.43	0.43	0.00	0.43
Sat Flow, veh/h	535	3637	9	455	3594	45	0	0	1585	1390	0	1585
Grp Volume(v), veh/h	128	598	628	2	515	539	0	0	9	29	0	73
Grp Sat Flow(s), veh/h/ln	535	1777	1869	455	1777	1862	0	0	1585	1390	0	1585
Q Serve(g_s), s	9.8	9.6	9.6	0.1	6.5	6.5	0.0	0.0	0.2	0.8	0.0	1.8
Cycle Q Clear(g_c), s	15.9	9.6	9.6	9.2	6.5	6.5	0.0	0.0	0.2	1.1	0.0	1.8
Prop In Lane	1.00		0.00	1.00		0.02	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	760	800	242	760	797	0	0	687	714	0	687
V/C Ratio(X)	0.44	0.79	0.79	0.01	0.68	0.68	0.00	0.00	0.01	0.04	0.00	0.11
Avail Cap(c_a), veh/h	362	998	1049	303	998	1046	0	0	687	714	0	687
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	3.4	3.4	5.3	3.1	3.1	0.0	0.0	10.5	10.8	0.0	10.9
Incr Delay (d2), s/veh	0.9	2.8	2.7	0.0	1.2	1.1	0.0	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	1.8	1.9	0.0	1.3	1.3	0.0	0.0	0.1	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.7	6.2	6.0	5.3	4.3	4.3	0.0	0.0	10.5	10.9	0.0	11.2
LnGrp LOS	A	A	A	A	A	A	A	A	B	B	A	B
Approach Vol, veh/h		1354			1056			9		102		
Approach Delay, s/veh		6.2			4.3			10.5		11.2		
Approach LOS		A			A			B		B		
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		32.2		32.8		32.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.2		17.9		3.8		11.2				
Green Ext Time (p_c), s		0.0		9.7		0.3		7.8				

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Background 2026 AM  
3: Shared Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1131	6	5	947	0	6
Future Vol, veh/h	1131	6	5	947	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1257	7	6	1052	0	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1264	0	1799
Stage 1	-	-	-	-	1261
Stage 2	-	-	-	-	538
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	917	-	*71
Stage 1	-	-	-	-	*574
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	917	-	*71
Mov Cap-2 Maneuver	-	-	-	-	*309
Stage 1	-	-	-	-	*570
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	917	-
HCM Lane V/C Ratio	0.01	-	-	0.006	-
HCM Control Delay (s)	10.7	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2026 AM  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	0	8	0	0	5
Future Vol, veh/h	0	0	8	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	9	0	0	6

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	15	9	0	0	9
Stage 1	9	-	-	-	-
Stage 2	6	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	1004	1073	-	-	1611
Stage 1	1014	-	-	-	-
Stage 2	1017	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1004	1073	-	-	1611
Mov Cap-2 Maneuver	1004	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	1017	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1611	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-

Background 2026 AM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	1067	34	18	877	10	50	0	29	5	0	12
Future Vol, veh/h	26	1067	34	18	877	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1186	38	20	974	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	985	0	0	1224
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	*952
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	*952
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.2	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	360	*1070	-	-	*952	-	-	295	715
HCM Lane V/C Ratio	0.244	0.027	-	-	0.021	-	-	0.019	0.019
HCM Control Delay (s)	18.2	8.5	-	-	8.9	-	-	17.4	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Background 2026 AM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	1044	53	43	891	8	6	0	41	4	1	12
Future Vol, veh/h	3	1044	53	43	891	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1160	59	48	990	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	999	0	0	1219
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	*879
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	*879
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.8	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	579	*1070	-	-	879	-	-	284	715
HCM Lane V/C Ratio	0.09	0.003	-	-	0.054	-	-	0.016	0.019
HCM Control Delay (s)	11.8	8.4	-	-	9.3	-	-	17.9	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

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

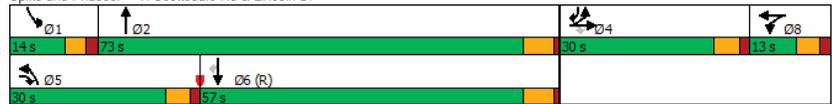
Background 2026 AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	491	42	502	41	40	304	1453	56	1845	640
Future Volume (vph)	491	42	502	41	40	304	1453	56	1845	640
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	None	C-Max	None
Act Effct Green (s)	24.4	24.4	45.0	7.4	7.4	20.7	70.5	7.7	55.3	85.3
Actuated g/C Ratio	0.19	0.19	0.35	0.06	0.06	0.16	0.54	0.06	0.43	0.66
v/c Ratio	0.94	0.94	0.94	0.46	0.43	0.62	0.60	0.60	0.95	0.65
Control Delay	73.0	72.3	52.6	74.6	33.9	55.6	22.0	82.1	47.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.0	72.3	52.6	74.6	33.9	55.6	22.0	82.1	47.2	13.2
LOS	E	E	D	E	C	E	C	F	D	B
Approach Delay		62.9			46.5		27.7		39.4	
Approach LOS		E			D		C		D	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	40.2
Intersection Capacity Utilization:	86.9%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Background 2026 AM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	491	42	502	41	40	52	304	1453	43	56	1845	640
Future Volume (veh/h)	491	42	502	41	40	52	304	1453	43	56	1845	640
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	580	0	314	46	44	41	338	1614	37	62	2050	422
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	0	480	101	105	87	398	2397	55	79	2015	923
Arrive On Green	0.19	0.00	0.19	0.06	0.06	0.06	0.12	0.47	0.47	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1851	1522	3456	5136	118	1781	5106	1585
Grp Volume(v), veh/h	580	0	314	46	42	43	338	1070	581	62	2050	422
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1596	1728	1702	1849	1781	1702	1585
Q Serve(g_s), s	20.5	0.0	22.4	3.2	3.0	3.4	12.5	31.8	31.8	4.5	51.3	19.7
Cycle Q Clear(g_c), s	20.5	0.0	22.4	3.2	3.0	3.4	12.5	31.8	31.8	4.5	51.3	19.7
Prop In Lane	1.00		1.00	1.00		0.95	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	669	0	480	101	101	91	398	1589	863	79	2015	923
V/C Ratio(X)	0.87	0.00	0.65	0.45	0.42	0.47	0.85	0.67	0.67	0.78	1.02	0.46
Avail Cap(c_a), veh/h	671	0	481	101	101	91	651	1762	957	119	2015	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	39.4	59.3	59.2	59.4	56.4	27.0	27.0	61.5	39.3	15.4
Incr Delay (d2), s/veh	11.1	0.0	2.5	1.2	1.0	1.4	2.8	0.6	1.2	8.7	24.5	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.2	0.0	9.1	1.5	1.4	1.4	5.6	12.9	14.2	2.2	25.6	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.3	0.0	41.9	60.5	60.2	60.8	59.2	27.6	28.1	70.2	63.9	17.1
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	F	B
Approach Vol, veh/h		894			131		1989		2534			
Approach Delay, s/veh		55.1			60.5		33.1		56.2			
Approach LOS		E			E		C		E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	66.4		29.9	20.5	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	6.5	33.8		24.4	14.5	53.3		5.4				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.5	0.0		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	47.9
HCM 6th LOS	D

Notes  
User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Smoke Tree Resort  
Background 2026 PM

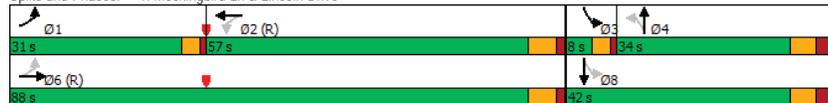
1: Mockingbird Ln & Lincoln Drive  
Timings

	↖	→	↙	←	↘	↑	↗	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↙	↖↗	↘	↘	↖	↖
Traffic Volume (vph)	271	951	22	1006	8	69	66	53
Future Volume (vph)	271	951	22	1006	8	69	66	53
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	100.6	98.6	75.1	75.1	12.5	12.5	21.4	18.9
Actuated g/C Ratio	0.77	0.76	0.58	0.58	0.10	0.10	0.16	0.15
v/c Ratio	0.68	0.41	0.09	0.59	0.12	0.53	0.40	0.72
Control Delay	18.9	6.5	33.7	42.1	55.8	61.0	52.3	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	6.5	33.7	42.1	55.8	61.0	52.3	38.3
LOS	B	A	C	D	E	E	D	D
Approach Delay		9.2		41.9		60.5		41.5
Approach LOS		A		D		E		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Smoke Tree Resort  
Background 2026 PM

1: Mockingbird Ln & Lincoln Drive  
HCM 6th Signalized Intersection Summary

	↖	→	↙	←	↘	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↙	↖↗		↘	↘		↖	↖	
Traffic Volume (veh/h)	271	951	32	22	1006	64	8	69	18	66	53	172
Future Volume (veh/h)	271	951	32	22	1006	64	8	69	18	66	53	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	301	1057	25	24	1118	43	9	77	11	73	59	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	505	2712	64	400	2306	89	86	125	18	151	70	161
Arrive On Green	0.07	0.76	0.76	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3548	84	521	3489	134	1189	1601	229	1781	506	1157
Grp Volume(v), veh/h	301	529	553	24	569	592	9	0	88	73	0	194
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	521	1777	1846	1189	0	1829	1781	0	1662
Q Serve(g_s), s	6.6	13.0	13.0	0.0	0.0	0.0	1.0	0.0	6.1	4.0	0.0	14.8
Cycle Q Clear(g_c), s	6.6	13.0	13.0	0.0	0.0	0.0	7.7	0.0	6.1	4.0	0.0	14.8
Prop In Lane	1.00		0.05	1.00		0.07	1.00		0.13	1.00		0.70
Lane Grp Cap(c), veh/h	505	1358	1418	400	1174	1220	86	0	142	151	0	232
V/C Ratio(X)	0.60	0.39	0.39	0.06	0.48	0.49	0.10	0.00	0.62	0.48	0.00	0.84
Avail Cap(c_a), veh/h	745	1358	1418	400	1174	1220	245	0	387	151	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.1	5.1	0.0	0.0	0.0	62.2	0.0	58.1	53.6	0.0	54.5
Incr Delay (d2), s/veh	1.1	0.8	0.8	0.2	1.0	1.0	0.5	0.0	4.3	2.4	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.6	4.8	0.0	0.3	0.3	0.3	0.0	3.0	0.5	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	6.0	5.9	0.2	1.0	1.0	62.7	0.0	62.4	56.0	0.0	62.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1383			1185			97				267
Approach Delay, s/veh		6.0			1.0			62.4				60.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	13.5	91.9	8.0	16.6		105.4		24.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5		82.0		35.5				
Max Q Clear Time (g_c+I), s	8.6	2.0	6.0	9.7		15.0		16.8				
Green Ext Time (p_c), s	0.8	11.0	0.0	0.4		9.5						

Intersection Summary

HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Smoke Tree Resort  
Background 2026 PM

2: Quail Run Rd & Lincoln Drive  
Timings

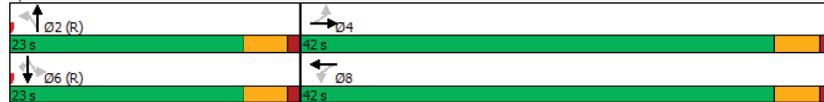


Lane Group	EBL	EBT	WBT	NBT	SBL	SBT	SBR
Lane Configurations	↔	↕↕	↕↕	↕↕	↔	↕	↕
Traffic Volume (vph)	85	968	996	0	14	0	93
Future Volume (vph)	85	968	996	0	14	0	93
Turn Type	Perm	NA	NA	NA	Perm	NA	Perm
Protected Phases		4	8	2		6	
Permitted Phases	4				6		6
Detector Phase	4	4	8	2	6	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	23.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	30.9	30.9	30.9	25.1		25.1	25.1
Actuated g/C Ratio	0.48	0.48	0.48	0.39		0.39	0.39
v/c Ratio	0.71	0.64	0.68	0.00		0.03	0.16
Control Delay	48.7	17.9	17.3	0.0		15.9	6.6
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	48.7	17.9	17.3	0.0		15.9	6.6
LOS	D	B	B	A		B	A
Approach Delay		20.4	17.3			7.9	
Approach LOS		C	B			A	

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Smoke Tree Resort  
Background 2026 PM

2: Quail Run Rd & Lincoln Drive  
HCM 6th Signalized Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕↕	↕	↕	↕↕	↕	↕↕	↕↕	↕	↕	↕	↕
Traffic Volume (veh/h)	85	968	1	0	996	25	0	0	2	14	0	93
Future Volume (veh/h)	85	968	1	0	996	25	0	0	2	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1076	1	0	1107	28	0	0	2	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1512	1	111	1470	37	0	0	708	728	0	708
Arrive On Green	0.83	0.83	0.83	0.00	0.83	0.83	0.00	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	496	3643	3	524	3542	90	0	0	1585	1383	0	1585
Grp Volume(v), veh/h	94	525	552	0	555	580	0	0	2	16	0	103
Grp Sat Flow(s),veh/h/ln	496	1777	1870	524	1777	1854	0	0	1585	1383	0	1585
Q Serve(g_s), s	7.4	8.0	8.0	0.0	9.2	9.2	0.0	0.0	0.4	0.4	0.0	2.5
Cycle Q Clear(g_c), s	13.9	8.0	8.0	0.0	9.2	9.2	0.0	0.0	1.1	1.1	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.05	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	737	776	111	737	770	0	0	708	728	0	708
V/C Ratio(X)	0.35	0.71	0.71	0.00	0.75	0.75	0.00	0.00	0.00	0.02	0.00	0.15
Avail Cap(c_a), veh/h	347	1025	1079	196	1025	1070	0	0	708	728	0	708
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	3.9	3.9	0.0	4.0	4.0	0.0	0.0	10.0	10.4	0.0	10.6
Incr Delay (d2), s/veh	0.7	1.3	1.2	0.0	2.1	2.0	0.0	0.0	0.0	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.0	1.8	1.8	0.0	0.0	0.0	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	5.2	5.1	0.0	6.1	6.0	0.0	0.0	10.0	10.5	0.0	11.1
LnGrp LOS	A	A	A	A	A	A	A	A	A	B	A	B
Approach Vol, veh/h		1171			1135			2				119
Approach Delay, s/veh		5.3			6.0			10.0				11.0
Approach LOS		A			A			A				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.6		30.4		34.6		30.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		37.5		18.5		37.5				
Max Q Clear Time (g_c+I), s		2.0		15.9		4.5		11.2				
Green Ext Time (p_c), s		0.0		8.8		0.3		8.7				

Intersection Summary

HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A



Smoke Tree Resort  
Background 2026 PM

7: Apartment Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗ ↘		↗ ↘		↗ ↘		↔		↗ ↘		↗ ↘	
Traffic Vol, veh/h	7	920	41	6	914	9	66	3	47	7	0	34
Future Vol, veh/h	7	920	41	6	914	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1022	46	7	1016	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1026	0	0	1068
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1061	-	-	972
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1061	-	-	972
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	18.3	11.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	398	1061	-	-	972	-	-	321	715
HCM Lane V/C Ratio	0.324	0.007	-	-	0.007	-	-	0.024	0.053
HCM Control Delay (s)	18.3	8.4	-	-	8.7	-	-	16.5	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.1	0.2

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

Smoke Tree Resort  
Background 2026 PM

8: AJ's Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗ ↘		↗ ↘		↗ ↘		↔		↗ ↘		↗ ↘	
Traffic Vol, veh/h	11	913	53	61	912	8	14	1	89	4	0	7
Future Vol, veh/h	11	913	53	61	912	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1014	59	68	1013	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1022	0	0	1073
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1066	-	-	966
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1066	-	-	966
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.5	13.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	598	1066	-	-	966	-	-	257	715
HCM Lane V/C Ratio	0.193	0.011	-	-	0.07	-	-	0.017	0.011
HCM Control Delay (s)	12.5	8.4	-	-	9	-	-	19.3	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Smoke Tree Resort  
Background 2026 PM

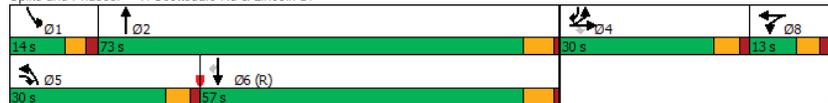
9: Scottsdale Rd & Lincoln Dr  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	532	62	449	62	69	442	1791	67	1729	525
Future Volume (vph)	532	62	449	62	69	442	1791	67	1729	525
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	13.0	13.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	24.5	24.5	46.4	7.4	7.4	21.9	70.2	8.1	53.9	84.1
Actuated g/C Ratio	0.19	0.19	0.36	0.06	0.06	0.17	0.54	0.06	0.41	0.65
v/c Ratio	1.05	1.03	0.82	0.69	0.62	0.85	0.75	0.68	0.91	0.55
Control Delay	99.9	94.5	37.4	93.0	38.8	66.6	25.9	88.5	43.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.9	94.5	37.4	93.0	38.8	66.6	25.9	88.5	43.9	12.5
LOS	F	F	D	F	D	E	C	F	D	B
Approach Delay		71.5			54.7		33.8		38.0	
Approach LOS		E			D		C		D	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Smoke Tree Resort  
Background 2026 PM

9: Scottsdale Rd & Lincoln Dr  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	532	62	449	62	69	80	442	1791	50	67	1729	525
Future Volume (veh/h)	532	62	449	62	69	80	442	1791	50	67	1729	525
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	640	0	277	69	77	67	491	1990	45	74	1921	316
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	671	0	550	101	108	85	548	2579	58	94	2015	924
Arrive On Green	0.19	0.00	0.19	0.06	0.06	0.06	0.16	0.50	0.50	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1893	1487	3456	5137	116	1781	5106	1585
Grp Volume(v), veh/h	640	0	277	69	72	72	491	1318	717	74	1921	316
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1603	1728	1702	1849	1781	1702	1585
Q Serve(g_s), s	23.1	0.0	18.0	4.9	5.2	5.8	18.1	40.9	41.0	5.3	47.5	13.5
Cycle Q Clear(g_c), s	23.1	0.0	18.0	4.9	5.2	5.8	18.1	40.9	41.0	5.3	47.5	13.5
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	671	0	550	101	101	91	548	1709	929	94	2015	924
V/C Ratio(X)	0.95	0.00	0.50	0.68	0.71	0.79	0.90	0.77	0.77	0.79	0.95	0.34
Avail Cap(c_a), veh/h	671	0	550	101	101	91	651	1762	957	119	2015	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	0.0	33.6	60.1	60.2	60.5	53.6	26.3	26.3	60.9	38.2	14.1
Incr Delay (d2), s/veh	23.6	0.0	0.3	14.2	17.8	34.0	12.3	1.9	3.4	18.3	11.7	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.5	0.0	7.0	2.6	2.8	3.2	8.8	16.7	18.6	2.9	21.6	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.7	0.0	33.9	74.3	78.1	94.5	65.9	28.2	29.7	79.1	49.9	15.1
LnGrp LOS	E	A	C	E	E	F	E	C	C	E	D	B
Approach Vol, veh/h		917			213		2526		2311			
Approach Delay, s/veh		63.1			82.4		36.0		46.1			
Approach LOS		E			F		D		D			

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	12.1	71.0	30.0	26.1	57.0	13.0
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	67.3	24.5	24.5	51.3	7.4
Max Q Clear Time (g_c+I), s	7.3	43.0	25.1	20.1	49.5	7.8
Green Ext Time (p_c), s	0.0	3.3	0.0	0.5	1.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Smoke Tree Resort  
Total 2026 AM

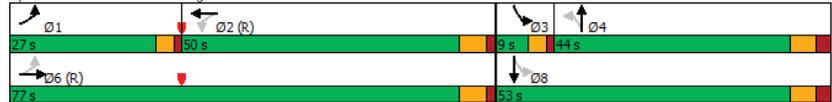
1: Mockingbird Ln & Lincoln Drive  
Timings

	↖	→	↙	←	↘	↑	↗	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↙	↖↗	↘	↘	↖	↖
Traffic Volume (vph)	246	1051	25	978	6	38	82	100
Future Volume (vph)	246	1051	25	978	6	38	82	100
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	91.0	89.0	64.1	64.1	19.2	19.2	31.0	28.5
Actuated g/C Ratio	0.70	0.68	0.49	0.49	0.15	0.15	0.24	0.22
v/c Ratio	0.69	0.47	0.14	0.62	0.11	0.22	0.32	0.84
Control Delay	25.8	11.3	38.8	42.5	46.5	32.9	40.6	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.3	38.8	42.5	46.5	32.9	40.6	50.4
LOS	C	B	D	D	D	C	D	D
Approach Delay		14.0		42.4		34.3		48.6
Approach LOS		B		D		C		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Smoke Tree Resort  
Total 2026 AM

1: Mockingbird Ln & Lincoln Drive  
HCM 6th Signalized Intersection Summary

	↖	→	↙	←	↘	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↙	↖↗		↘	↘		↖	↖	↖
Traffic Volume (veh/h)	246	1051	33	25	978	47	6	38	21	82	100	257
Future Volume (veh/h)	246	1051	33	25	978	47	6	38	21	82	100	257
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	273	1168	37	28	1087	52	7	42	23	91	111	286
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	2406	76	270	1921	92	87	221	121	316	124	319
Arrive On Green	0.09	0.65	0.65	1.00	1.00	1.00	0.18	0.18	0.18	0.04	0.25	0.25
Sat Flow, veh/h	1688	3701	117	440	3634	174	935	1196	655	1688	487	1256
Grp Volume(v), veh/h	273	590	615	28	559	580	7	65	91	0	397	0
Grp Sat Flow(s),veh/h/ln	1688	1870	1948	440	1870	1938	935	0	1851	1688	0	1743
Q Serve(g_s), s	9.2	21.0	21.0	0.7	0.0	0.0	0.9	0.0	3.9	5.0	0.0	28.6
Cycle Q Clear(g_c), s	9.2	21.0	21.0	5.9	0.0	0.0	20.6	0.0	3.9	5.0	0.0	28.6
Prop In Lane	1.00		0.06	1.00		0.09	1.00		0.35	1.00		0.72
Lane Grp Cap(c), veh/h	456	1216	1266	270	989	1024	87	0	341	316	0	442
V/C Ratio(X)	0.60	0.49	0.49	0.10	0.57	0.57	0.08	0.00	0.19	0.29	0.00	0.90
Avail Cap(c_a), veh/h	601	1216	1266	270	989	1024	184	0	534	316	0	623
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	11.6	11.6	0.2	0.0	0.0	61.2	0.0	44.8	40.6	0.0	46.9
Incr Delay (d2), s/veh	1.3	1.4	1.3	0.6	1.9	1.8	0.4	0.0	0.3	0.5	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	8.9	9.2	0.0	0.5	0.5	0.2	0.0	1.8	0.2	0.0	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	13.0	13.0	0.8	1.9	1.8	61.6	0.0	45.1	41.1	0.0	59.1
LnGrp LOS	B	B	B	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1478			1167			72				488
Approach Delay, s/veh		12.7			1.8			46.7				55.7
Approach LOS		B			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	15.8	74.7	9.0	30.5		90.5		39.5				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	11.2	7.9	7.0	22.6		23.0		30.6				
Green Ext Time (p_c), s	0.6	10.3	0.0	0.2		11.1		2.4				

Intersection Summary

HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Smoke Tree Resort  
Total 2026 AM

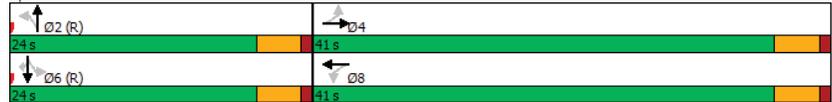
2: Quail Run Rd & Lincoln Drive  
Timings

	↖	→	↙	←	↘	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↙	↙↘		↕	↖	↖	↖
Traffic Volume (vph)	115	1107	6	941	3	0	26	0	66
Future Volume (vph)	115	1107	6	941	3	0	26	0	66
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5		4.5		4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.7	32.7	32.7	32.7	23.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.73	0.69	0.06	0.59	0.03	0.06	0.12	0.12	0.12
Control Delay	47.4	20.5	7.7	12.8	5.4	16.3	5.5	5.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	20.5	7.7	12.8	5.4	16.3	5.5	5.5	5.5
LOS	D	C	A	B	A	B	A	A	A
Approach Delay		23.0		12.7		5.4		8.6	
Approach LOS		C		B		A		A	

Intersection Summary

Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 51.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Smoke Tree Resort  
Total 2026 AM

2: Quail Run Rd & Lincoln Drive  
HCM 6th Signalized Intersection Summary

	↖	→	↙	←	↘	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↙	↙↘		↕	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	115	1107	7	6	941	12	3	0	11	26	0	66
Future Volume (veh/h)	115	1107	7	6	941	12	3	0	11	26	0	66
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1230	8	7	1046	13	3	0	12	29	0	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1552	10	240	1542	19	163	39	538	720	0	686
Arrive On Green	0.86	0.86	0.86	0.86	0.86	0.86	0.43	0.00	0.43	0.43	0.00	0.43
Sat Flow, veh/h	533	3619	24	450	3594	45	222	89	1244	1408	0	1585
Grp Volume(v), veh/h	128	604	634	7	517	542	15	0	29	0	73	73
Grp Sat Flow(s),veh/h/ln	533	1777	1866	450	1777	1862	1555	0	1408	0	1585	1585
Q Serve(g_s), s	9.8	9.8	9.8	0.4	6.4	6.4	0.0	0.0	0.2	0.0	1.8	1.8
Cycle Q Clear(g_c), s	15.8	9.8	9.8	9.7	6.4	6.4	0.3	0.0	0.7	0.0	1.8	1.8
Prop In Lane	1.00		0.01	1.00		0.02	0.20		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	290	762	800	240	762	799	739	0	720	0	686	686
V/C Ratio(X)	0.44	0.79	0.79	0.03	0.68	0.68	0.02	0.00	0.04	0.00	0.11	0.11
Avail Cap(c_a), veh/h	361	998	1048	299	998	1046	739	0	720	0	686	686
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	5.7	3.3	3.3	5.4	3.1	3.1	10.6	0.0	10.6	0.0	11.0	11.0
Incr Delay (d2), s/veh	0.9	2.9	2.8	0.0	1.2	1.2	0.1	0.0	0.1	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.9	0.0	1.3	1.3	0.1	0.0	0.2	0.0	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	6.3	6.1	5.4	4.3	4.3	10.6	0.0	10.7	0.0	11.3	11.3
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1366			1066			15			102	
Approach Delay, s/veh		6.2			4.3			10.6			11.1	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		32.2		32.8		32.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.3		17.8		3.8		11.7				
Green Ext Time (p_c), s		0.0		9.8		0.3		7.9				

Intersection Summary

HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Smoke Tree Resort  
Total 2026 AM

3: Shared Access A & Lincoln Dr  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1134	12	21	951	4	17
Future Vol, veh/h	1134	12	21	951	4	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1260	13	23	1057	4	19

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1273	0
Stage 1	-	-	-	1267
Stage 2	-	-	-	575
Critical Hdwy	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-
Pot Cap-1 Maneuver	-	-	905	-
Stage 1	-	-	-	*568
Stage 2	-	-	-	*652
Platoon blocked, %	-	-	1	-
Mov Cap-1 Maneuver	-	-	905	-
Mov Cap-2 Maneuver	-	-	-	*298
Stage 1	-	-	-	*553
Stage 2	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	523	-	-	905	-
HCM Lane V/C Ratio	0.045	-	-	0.026	-
HCM Control Delay (s)	12.2	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

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

Smoke Tree Resort  
Total 2026 AM

4: Quail Run Rd & Access B  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	6	8	0	8	5
Future Vol, veh/h	0	6	8	0	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	9	0	9	6

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	33	9	0	0
Stage 1	9	-	-	-
Stage 2	24	-	-	-
Critical Hdwy	6.42	6.22	-	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	3.318	-	-
Pot Cap-1 Maneuver	980	1073	-	-
Stage 1	1014	-	-	-
Stage 2	999	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	974	1073	-	-
Mov Cap-2 Maneuver	974	-	-	-
Stage 1	1008	-	-	-
Stage 2	999	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	4.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1073	1611
HCM Lane V/C Ratio	-	-	0.006	0.006
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Smoke Tree Resort  
Total 2026 AM

7: Apartment Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	1081	34	18	897	10	50	0	29	5	0	12
Future Vol, veh/h	26	1081	34	18	897	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1201	38	20	997	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1008	0	0	1239
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	951
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	951
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.5	12.4
HCM LOS	C		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	354	*1070	-	-	951	-	-	287	715
HCM Lane V/C Ratio	0.248	0.027	-	-	0.021	-	-	0.019	0.019
HCM Control Delay (s)	18.5	8.5	-	-	8.9	-	-	17.8	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-	-	0.1	0.1

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

Smoke Tree Resort  
Total 2026 AM

8: AJ's Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	1058	53	43	911	8	6	0	41	4	1	12
Future Vol, veh/h	3	1058	53	43	911	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1176	59	48	1012	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1021	0	0	1235
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1067	-	-	952
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1067	-	-	952
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	12.1	12.3
HCM LOS	B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	556	1067	-	-	*952	-	-	266	715
HCM Lane V/C Ratio	0.094	0.003	-	-	0.05	-	-	0.017	0.019
HCM Control Delay (s)	12.1	8.4	-	-	9	-	-	18.8	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.1	0.1

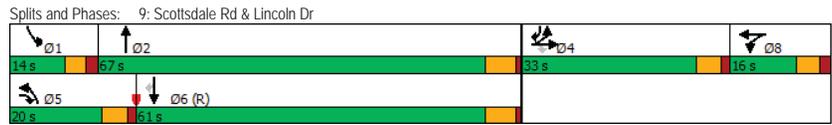
Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Smoke Tree Resort  
Total 2026 AM

9: Scottsdale Rd & Lincoln Dr  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (vph)	499	42	508	41	40	313	1453	56	1845	651	
Future Volume (vph)	499	42	508	41	40	313	1453	56	1845	651	
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov	
Protected Phases	4	4	5	8	8	5	2	1	6	4	
Permitted Phases	4			8			6			4	
Detector Phase	4	4	5	8	8	5	2	1	6	4	
Switch Phase											
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	15.5	15.5	12.5	15.6	15.6	12.5	27.7	10.3	30.7	15.5	
Total Split (s)	33.0	33.0	20.0	16.0	16.0	20.0	67.0	14.0	61.0	33.0	
Total Split (%)	25.4%	25.4%	15.4%	12.3%	12.3%	15.4%	51.5%	10.8%	46.9%	25.4%	
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0	
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5	
Lead/Lag	Lead			Lead			Lag	Lead	Lag	Lag	
Lead-Lag Optimize?											
Recall Mode	None	None	None	Min	Min	None	None	None	C-Max	None	
Act Effct Green (s)	26.3	26.3	42.3	10.1	10.1	16.0	65.8	7.8	55.3	87.3	
Actuated g/C Ratio	0.20	0.20	0.33	0.08	0.08	0.12	0.51	0.06	0.43	0.67	
v/c Ratio	0.88	0.88	0.99	0.34	0.34	0.82	0.65	0.58	0.95	0.62	
Control Delay	57.4	57.4	59.5	63.9	30.1	72.7	26.1	81.0	46.6	9.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.4	57.4	59.5	63.9	30.1	72.7	26.1	81.0	46.6	9.0	
LOS	E	E	E	E	C	E	C	F	D	A	
Approach Delay	58.4			40.6			34.1			37.8	
Approach LOS	E			D			C			D	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	40.6
Intersection Capacity Utilization:	89.4%
ICU Level of Service:	E
Analysis Period (min):	15



Smoke Tree Resort  
Total 2026 AM

9: Scottsdale Rd & Lincoln Dr  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Future Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	588	0	286	46	44	41	348	1614	31	62	2050	390
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	656	0	469	137	142	117	385	2547	49	79	2172	966
Arrive On Green	0.18	0.00	0.18	0.08	0.08	0.08	0.11	0.49	0.49	0.04	0.43	0.43
Sat Flow, veh/h	3563	0	1585	1781	1851	1522	3456	5158	99	1781	5106	1585
Grp Volume(v), veh/h	588	0	286	46	42	43	348	1065	580	62	2050	390
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1596	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.0	0.0	20.2	3.2	2.9	3.3	12.9	30.0	30.0	4.5	50.1	16.6
Cycle Q Clear(g_c), s	21.0	0.0	20.2	3.2	2.9	3.3	12.9	30.0	30.0	4.5	50.1	16.6
Prop In Lane	1.00		1.00	1.00		0.95	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	656	0	469	137	137	123	385	1681	915	79	2172	966
V/C Ratio(X)	0.90	0.00	0.61	0.34	0.31	0.35	0.90	0.63	0.63	0.78	0.94	0.40
Avail Cap(c_a), veh/h	754	0	512	143	142	128	385	1681	915	119	2172	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	39.3	56.9	56.7	56.9	57.1	24.2	24.2	61.5	35.9	13.1
Incr Delay (d2), s/veh	11.4	0.0	1.1	0.5	0.5	0.6	23.3	0.6	1.1	8.7	10.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.4	0.0	8.0	1.5	1.3	1.4	6.9	12.1	13.3	2.2	22.4	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.2	0.0	40.5	57.4	57.2	57.5	80.3	24.8	25.3	70.2	45.8	14.4
LnGrp LOS	E	A	D	E	E	E	F	C	C	E	D	B
Approach Vol, veh/h	874			131			1993			2502		
Approach Delay, s/veh	55.7			57.4			34.7			41.5		
Approach LOS	E			E			C			D		

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	11.1 69.9 29.4 20.0 61.0 15.6
Change Period (Y+Rc), s	* 5.3 5.7 5.5 5.5 5.7 5.6
Max Green Setting (Gmax), s	* 8.7 61.3 27.5 14.5 55.3 10.4
Max Q Clear Time (g_c+I), s	6.5 32.0 23.0 14.9 52.1 5.3
Green Ext Time (p_c), s	0.0 2.5 1.0 0.0 1.7 0.1

Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Smoke Tree Resort  
Total 2026 AM Mitigated

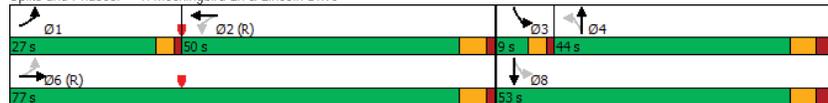
1: Mockingbird Ln & Lincoln Drive  
Timings

	↖	→	↙	←	↘	↑	↗	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↙	↖↗	↘	↘	↖	↖
Traffic Volume (vph)	246	1051	25	978	6	38	82	100
Future Volume (vph)	246	1051	25	978	6	38	82	100
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	91.0	89.0	64.1	64.1	19.2	19.2	31.0	28.5
Actuated g/C Ratio	0.70	0.68	0.49	0.49	0.15	0.15	0.24	0.22
v/c Ratio	0.69	0.47	0.14	0.62	0.11	0.22	0.32	0.84
Control Delay	25.8	11.3	40.7	44.0	46.5	32.9	40.6	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.3	40.7	44.0	46.5	32.9	40.6	50.4
LOS	C	B	D	D	D	C	D	D
Approach Delay		14.0		43.9		34.3		48.6
Approach LOS		B		D		C		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 76.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Smoke Tree Resort  
Total 2026 AM Mitigated

1: Mockingbird Ln & Lincoln Drive  
HCM 6th Signalized Intersection Summary

	↖	→	↙	←	↘	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↙	↖↗		↘	↘		↖	↖	
Traffic Volume (veh/h)	246	1051	33	25	978	47	6	38	21	82	100	257
Future Volume (veh/h)	246	1051	33	25	978	47	6	38	21	82	100	257
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	273	1168	26	28	1087	35	7	42	14	91	111	175
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	2686	60	317	2253	73	86	165	55	235	128	202
Arrive On Green	0.08	0.72	0.72	1.00	1.00	1.00	0.12	0.12	0.12	0.04	0.19	0.19
Sat Flow, veh/h	1688	3741	83	444	3699	119	1036	1413	471	1688	688	1085
Grp Volume(v), veh/h	273	584	610	28	550	572	7	0	56	91	0	286
Grp Sat Flow(s),veh/h/ln	1688	1870	1954	444	1870	1947	1036	0	1884	1688	0	1773
Q Serve(g_s), s	7.5	16.6	16.7	0.3	0.0	0.0	0.9	0.0	3.5	5.0	0.0	20.3
Cycle Q Clear(g_c), s	7.5	16.6	16.7	2.8	0.0	0.0	12.2	0.0	3.5	5.0	0.0	20.3
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.25	1.00		0.61
Lane Grp Cap(c), veh/h	477	1343	1403	317	1139	1186	86	0	220	235	0	330
V/C Ratio(X)	0.57	0.43	0.43	0.09	0.48	0.48	0.08	0.00	0.25	0.39	0.00	0.87
Avail Cap(c_a), veh/h	644	1343	1403	317	1139	1186	264	0	543	235	0	634
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	7.5	7.5	0.0	0.0	0.0	61.6	0.0	52.3	48.3	0.0	51.4
Incr Delay (d2), s/veh	1.1	1.0	1.0	0.4	1.2	1.1	0.4	0.0	0.6	1.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.6	6.9	0.0	0.4	0.4	0.2	0.0	1.7	0.5	0.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	8.5	8.5	0.5	1.2	1.1	62.1	0.0	52.9	49.4	0.0	58.3
LnGrp LOS	A	A	A	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1467			1150			63				377
Approach Delay, s/veh		8.4			1.1			53.9				56.1
Approach LOS		A			A			D				E

Timer - Assigned Phs	1	2	3	4	6	8
Phs Duration (G+Y+Rc), s	14.1	85.2	9.0	21.7	99.3	30.7
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5	6.0	6.5
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5	71.0	46.5
Max Q Clear Time (g_c+I), s	9.5	4.8	7.0	14.2	18.7	22.3
Green Ext Time (p_c), s	0.7	10.2	0.0	0.2	11.0	1.8

Intersection Summary

HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Smoke Tree Resort  
Total 2026 AM Mitigated

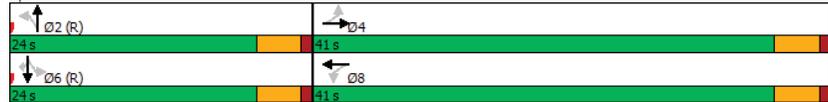
2: Quail Run Rd & Lincoln Drive  
Timings

	↖	→	↙	←	↘	↑	↗	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↙	↙↘		↕	↖	↖	↖
Traffic Volume (vph)	115	1107	6	941	3	0	26	0	66
Future Volume (vph)	115	1107	6	941	3	0	26	0	66
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.7	32.7	32.7	32.7	23.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.73	0.69	0.06	0.59	0.03	0.06	0.12	0.12	0.12
Control Delay	47.4	20.5	8.3	14.3	5.4	16.3	5.5	5.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	20.5	8.3	14.3	5.4	16.3	5.5	5.5	5.5
LOS	D	C	A	B	A	B	A	A	A
Approach Delay		23.0		14.2		5.4		8.6	
Approach LOS		C		B		A		A	

Intersection Summary

Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 18.7  
 Intersection Capacity Utilization 51.4%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 2: Quail Run Rd & Lincoln Drive



Smoke Tree Resort  
Total 2026 AM Mitigated

2: Quail Run Rd & Lincoln Drive  
HCM 6th Signalized Intersection Summary

	↖	→	↙	←	↘	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↙	↙↘	↕	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	115	1107	7	6	941	12	3	0	11	26	0	66
Future Volume (veh/h)	115	1107	7	6	941	12	3	0	11	26	0	66
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1230	8	7	1046	13	3	0	12	29	0	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1552	10	240	1542	19	163	39	538	720	0	686
Arrive On Green	0.86	0.86	0.86	0.86	0.86	0.86	0.43	0.00	0.43	0.43	0.00	0.43
Sat Flow, veh/h	533	3619	24	450	3594	45	222	89	1244	1408	0	1585
Grp Volume(v), veh/h	128	604	634	7	517	542	15	0	29	0	73	73
Grp Sat Flow(s),veh/h/ln	533	1777	1866	450	1777	1862	1555	0	1408	0	1585	1585
Q Serve(g_s), s	9.8	9.8	9.8	0.4	6.4	6.4	0.0	0.0	0.2	0.0	1.8	1.8
Cycle Q Clear(g_c), s	15.8	9.8	9.8	9.7	6.4	6.4	0.3	0.0	0.7	0.0	1.8	1.8
Prop In Lane	1.00		0.01	1.00		0.02	0.20		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	290	762	800	240	762	799	739	0	720	0	686	686
V/C Ratio(X)	0.44	0.79	0.79	0.03	0.68	0.68	0.02	0.00	0.04	0.00	0.11	0.11
Avail Cap(c_a), veh/h	361	998	1048	299	998	1046	739	0	720	0	686	686
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	5.7	3.3	3.3	5.4	3.1	3.1	10.6	0.0	10.6	0.0	11.0	11.0
Incr Delay (d2), s/veh	0.9	2.9	2.8	0.0	1.2	1.2	0.1	0.0	0.1	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.9	0.0	1.3	1.3	0.1	0.0	0.2	0.0	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	6.3	6.1	5.4	4.3	4.3	10.6	0.0	10.7	0.0	11.3	11.3
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1366			1066			15			102	
Approach Delay, s/veh		6.2			4.3			10.6			11.1	
Approach LOS		A			A			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		32.2		32.8		32.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.3		17.8		3.8		11.7				
Green Ext Time (p_c), s		0.0		9.8		0.3		7.9				

Intersection Summary

HCM 6th Ctrl Delay 5.6  
 HCM 6th LOS A

Smoke Tree Resort  
Total 2026 AM Mitigated

3: Shared Access A & Lincoln Dr  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1134	12	21	951	4	17
Future Vol, veh/h	1134	12	21	951	4	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1260	13	23	1057	4	19

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1273	0
Stage 1	-	-	-	1267
Stage 2	-	-	-	575
Critical Hdwy	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-
Pot Cap-1 Maneuver	-	-	905	-
Stage 1	-	-	-	*568
Stage 2	-	-	-	*652
Platoon blocked, %	-	-	1	-
Mov Cap-1 Maneuver	-	-	905	-
Mov Cap-2 Maneuver	-	-	-	*298
Stage 1	-	-	-	*553
Stage 2	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	523	-	-	905	-
HCM Lane V/C Ratio	0.045	-	-	0.026	-
HCM Control Delay (s)	12.2	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

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

Smoke Tree Resort  
Total 2026 AM Mitigated

4: Quail Run Rd & Access B  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	6	8	0	8	5
Future Vol, veh/h	0	6	8	0	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	9	0	9	6

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	33	9	0	0
Stage 1	9	-	-	-
Stage 2	24	-	-	-
Critical Hdwy	6.42	6.22	-	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	3.318	-	-
Pot Cap-1 Maneuver	980	1073	-	-
Stage 1	1014	-	-	-
Stage 2	999	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	974	1073	-	-
Mov Cap-2 Maneuver	974	-	-	-
Stage 1	1008	-	-	-
Stage 2	999	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	4.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR/WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1073	1611
HCM Lane V/C Ratio	-	-	0.006	0.006
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Smoke Tree Resort  
Total 2026 AM Mitigated

7: Apartment Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗ ↘		↗ ↘		↗ ↘		↔		↗ ↘		↗ ↘	
Traffic Vol, veh/h	26	1081	34	18	897	10	50	0	29	5	0	12
Future Vol, veh/h	26	1081	34	18	897	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1201	38	20	997	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1008	0	0	1239
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	951
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	951
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.5	12.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	354	*1070	-	-	951	-	-	287	715
HCM Lane V/C Ratio	0.248	0.027	-	-	0.021	-	-	0.019	0.019
HCM Control Delay (s)	18.5	8.5	-	-	8.9	-	-	17.8	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-	-	0.1	0.1

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

Smoke Tree Resort  
Total 2026 AM Mitigated

8: AJ's Drwy & Lincoln Dr  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗ ↘		↗ ↘		↗ ↘		↔		↗ ↘		↗ ↘	
Traffic Vol, veh/h	3	1058	53	43	911	8	6	0	41	4	1	12
Future Vol, veh/h	3	1058	53	43	911	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1176	59	48	1012	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1021	0	0	1235
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1067	-	-	952
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1067	-	-	952
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	12.1	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	556	1067	-	-	952	-	-	266	715
HCM Lane V/C Ratio	0.094	0.003	-	-	0.05	-	-	0.017	0.019
HCM Control Delay (s)	12.1	8.4	-	-	9	-	-	18.8	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.1	0.1

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

Smoke Tree Resort  
Total 2026 AM Mitigated

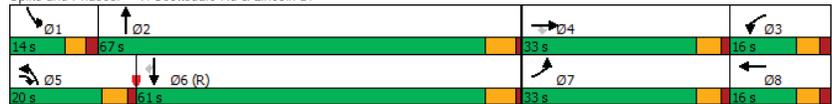
9: Scottsdale Rd & Lincoln Dr  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↙	↘	↙	↘	↙	↘	↙
Traffic Volume (vph)	499	42	508	41	40	313	1453	56	1845	651
Future Volume (vph)	499	42	508	41	40	313	1453	56	1845	651
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	1	6	6
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	15.6	15.6	12.5	27.7	10.3	30.7	30.7
Total Split (s)	33.0	33.0	20.0	16.0	16.0	20.0	67.0	14.0	61.0	61.0
Total Split (%)	25.4%	25.4%	15.4%	12.3%	12.3%	15.4%	51.5%	10.8%	46.9%	46.9%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.7
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.7
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	None	C-Max	C-Max
Act Effct Green (s)	25.5	25.5	42.3	10.1	12.1	14.8	64.6	7.8	55.3	55.3
Actuated g/C Ratio	0.20	0.20	0.33	0.08	0.09	0.11	0.50	0.06	0.43	0.43
v/c Ratio	0.91	0.91	0.99	0.34	0.29	0.89	0.66	0.58	0.95	0.75
Control Delay	62.1	62.1	59.3	63.9	29.1	81.7	26.7	81.0	46.6	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	62.1	59.3	63.9	29.1	81.7	26.7	81.0	46.6	14.0
LOS	E	E	E	E	C	F	C	F	D	B
Approach Delay		60.8			39.9		36.2		39.1	
Approach LOS		E			D		D		D	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 42.3	Intersection LOS: D
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Smoke Tree Resort  
Total 2026 AM Mitigated

9: Scottsdale Rd & Lincoln Dr  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↙	↘	↙	↘	↙	↘	↙	↘	↙
Traffic Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Future Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	588	0	286	46	44	41	348	1614	31	62	2050	390
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	0	370	244	142	117	385	2547	49	79	2172	674
Arrive On Green	0.18	0.00	0.12	0.14	0.08	0.08	0.11	0.49	0.49	0.04	0.43	0.43
Sat Flow, veh/h	3563	0	1585	1781	1851	1522	3456	5158	99	1781	5106	1585
Grp Volume(v), veh/h	588	0	286	46	42	43	348	1065	580	62	2050	390
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1596	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.0	0.0	13.4	3.0	2.9	3.3	12.9	30.0	30.0	4.5	50.1	24.4
Cycle Q Clear(g_c), s	21.0	0.0	13.4	3.0	2.9	3.3	12.9	30.0	30.0	4.5	50.1	24.4
Prop In Lane	1.00		1.00	1.00		0.95	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	648	0	370	244	137	123	385	1681	915	79	2172	674
V/C Ratio(X)	0.91	0.00	0.77	0.19	0.31	0.35	0.90	0.63	0.63	0.78	0.94	0.58
Avail Cap(c_a), veh/h	754	0	512	244	142	128	385	1681	915	119	2172	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	20.0	49.7	56.7	56.9	57.1	24.2	24.2	61.5	35.9	28.5
Incr Delay (d2), s/veh	12.5	0.0	3.0	0.1	0.5	0.6	23.3	0.6	1.1	8.7	10.0	3.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.5	0.0	5.2	1.3	1.3	1.4	6.9	12.1	13.3	2.2	22.4	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.6	0.0	23.1	49.8	57.2	57.5	80.3	24.8	25.3	70.2	45.8	32.1
LnGrp LOS	E	A	C	D	E	E	F	C	C	E	D	C
Approach Vol, veh/h		874			131			1993			2502	
Approach Delay, s/veh		51.0			54.7			34.7			44.3	
Approach LOS		D			D			C			D	

Timer - Assigned Phs

	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	69.9	23.4	21.3	20.0	61.0	29.2	15.6
Change Period (Y+Rc), s	* 5.3	5.7	5.6	5.5	5.5	5.7	5.5	5.6
Max Green Setting (Gmax), s	* 8.7	61.3	10.4	27.5	14.5	55.3	27.5	10.4
Max Q Clear Time (g_c+I), s	6.5	32.0	5.0	15.4	14.9	52.1	23.0	5.3
Green Ext Time (p_c), s	0.0	2.5	0.0	0.4	0.0	1.7	0.6	0.1

Intersection Summary

HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Notes

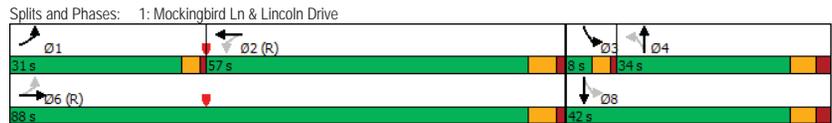
- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2026 PM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	271	961	23	1015	8	69	69	53
Future Volume (vph)	271	961	23	1015	8	69	69	53
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	100.6	98.6	74.7	74.7	12.5	12.5	21.4	18.9
Actuated g/C Ratio	0.77	0.76	0.57	0.57	0.10	0.10	0.16	0.15
v/c Ratio	0.68	0.41	0.09	0.60	0.12	0.54	0.42	0.72
Control Delay	19.6	6.5	34.0	42.4	55.6	60.9	53.3	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	6.5	34.0	42.4	55.6	60.9	53.3	38.2
LOS	B	A	C	D	E	E	D	D
Approach Delay		9.3		42.2		60.5		41.8
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 27.7	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	



Total 2026 PM  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	271	961	32	23	1015	66	8	69	20	69	53	172
Future Volume (veh/h)	271	961	32	23	1015	66	8	69	20	69	53	172
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	301	1068	25	26	1128	45	9	77	13	77	59	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	2713	64	396	2302	92	86	122	21	149	71	161
Arrive On Green	0.07	0.76	0.76	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3549	83	516	3483	139	1189	1560	263	1781	506	1157
Grp Volume(v), veh/h	301	535	558	26	575	598	9	90	77	0	194	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	516	1777	1845	1189	0	1823	1781	0	1662
Q Serve(g_s), s	6.6	13.2	13.2	0.0	0.0	0.0	1.0	0.0	6.2	4.0	0.0	14.8
Cycle Q Clear(g_c), s	6.6	13.2	13.2	0.0	0.0	0.0	7.7	0.0	6.2	4.0	0.0	14.8
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.14	1.00		0.70
Lane Grp Cap(c), veh/h	501	1358	1418	396	1174	1219	86	0	142	149	0	232
V/C Ratio(X)	0.60	0.39	0.39	0.07	0.49	0.49	0.10	0.00	0.63	0.52	0.00	0.84
Avail Cap(c_a), veh/h	741	1358	1418	396	1174	1219	245	0	386	149	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.68	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.2	5.2	0.0	0.0	0.0	62.2	0.0	58.1	54.1	0.0	54.5
Incr Delay (d2), s/veh	1.2	0.9	0.8	0.2	1.0	1.0	0.5	0.0	4.6	3.0	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.6	4.8	0.0	0.3	0.3	0.3	0.0	3.1	0.7	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	6.0	6.0	0.2	1.0	1.0	62.7	0.0	62.7	57.2	0.0	62.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1394			1199			99				271
Approach Delay, s/veh		6.0			1.0			62.7				60.8
Approach LOS		A			A			E				E

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	13.5 91.9 8.0 16.6 105.4 24.6
Change Period (Y+Rc), s	4.0 6.0 4.0 6.5 6.0 6.5
Max Green Setting (Gmax), s	27.0 51.0 4.0 27.5 82.0 35.5
Max Q Clear Time (g_c+I), s	8.6 2.0 6.0 9.7 15.2 16.8
Green Ext Time (p_c), s	0.8 11.2 0.0 0.4 9.7 1.0

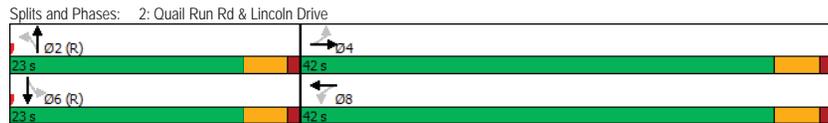
Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Total 2026 PM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↕	↔	↕	↔	↕	↔	↕
Traffic Volume (vph)	85	977	5	1003	5	0	14	0
Future Volume (vph)	85	977	5	1003	5	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	23.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	31.0	31.0	31.0	31.0	25.0	25.0	25.0	25.0
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38
v/c Ratio	0.72	0.65	0.04	0.68	0.02	0.18	0.18	0.18
Control Delay	49.2	17.9	8.0	16.7	5.2	7.6	7.6	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	17.9	8.0	16.7	5.2	7.6	7.6	7.6
LOS	D	B	A	B	A	A	A	A
Approach Delay		20.3		16.7		5.2		7.6
Approach LOS		C		B		A		A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	17.9
Intersection Capacity Utilization:	51.3%
ICU Level of Service:	A
Analysis Period (min):	15



Total 2026 PM  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕		↔	↕		↔	↕		↔	↕	
Traffic Volume (veh/h)	85	977	7	5	1003	25	5	0	7	14	0	93
Future Volume (veh/h)	85	977	7	5	1003	25	5	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1086	8	6	1114	28	6	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1498	11	280	1468	37	333	30	378	120	38	612
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	493	3616	27	515	3542	89	568	67	846	128	85	1369
Grp Volume(v), veh/h	94	534	560	6	559	583	14	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	493	1777	1866	515	1777	1854	1481	0	0	1582	0	0
Q Serve(g_s), s	7.4	8.4	8.4	0.3	9.4	9.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.7	8.4	8.4	5.8	9.4	9.4	0.3	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.43		0.57	0.13		0.87
Lane Grp Cap(c), veh/h	267	736	773	280	736	768	741	0	0	770	0	0
V/C Ratio(X)	0.35	0.72	0.72	0.02	0.76	0.76	0.02	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	347	1025	1076	364	1025	1070	741	0	0	770	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.3	4.0	4.0	4.7	4.1	4.1	10.0	0.0	0.0	10.7	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.4	1.4	0.0	2.2	2.1	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.6	1.7	0.0	1.8	1.9	0.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	5.4	5.3	4.8	6.2	6.1	10.1	0.0	0.0	11.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1188			1148			14				119
Approach Delay, s/veh		5.5			6.2			10.1				11.1
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.7		30.3		34.7		30.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		37.5		18.5		37.5				
Max Q Clear Time (g_c+I1), s		2.3		15.7		4.9		11.4				
Green Ext Time (p_c), s		0.0		9.0		0.5		8.9				

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A

Total 2026 PM  
3: Shared Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	989	9	21	1025	11	22
Future Vol, veh/h	989	9	21	1025	11	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1099	10	23	1139	12	24

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1109	0	1720
Stage 1	-	-	-	-	1104
Stage 2	-	-	-	-	616
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1019	-	*80
Stage 1	-	-	-	-	*646
Stage 2	-	-	-	-	*630
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1019	-	*78
Mov Cap-2 Maneuver	-	-	-	-	*318
Stage 1	-	-	-	-	*631
Stage 2	-	-	-	-	*630

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	494	-	-	1019	-
HCM Lane V/C Ratio	0.074	-	-	0.023	-
HCM Control Delay (s)	12.9	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

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

Total 2026 PM  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	6.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↑
Traffic Vol, veh/h	0	10	2	0	11	1
Future Vol, veh/h	0	10	2	0	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	2	0	12	1

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	27	2	0	0	2
Stage 1	2	-	-	-	-
Stage 2	25	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	988	1082	-	-	1620
Stage 1	1021	-	-	-	-
Stage 2	998	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	981	1082	-	-	1620
Mov Cap-2 Maneuver	981	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	998	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1082	1620
HCM Lane V/C Ratio	-	-	0.01	0.008
HCM Control Delay (s)	-	-	8.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Total 2026 PM  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	7	944	41	6	941	9	66	3	47	7	0	34
Future Vol, veh/h	7	944	41	6	941	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1049	46	7	1046	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1056	0	0	1095
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	18.3	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	399	*1034	-	-	*1024	-	-	308	691
HCM Lane V/C Ratio	0.323	0.008	-	-	0.007	-	-	0.025	0.055
HCM Control Delay (s)	18.3	8.5	-	-	8.5	-	-	17	10.5
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.1	0.2

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

Total 2026 PM  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	11	937	53	61	939	8	14	1	89	4	0	7
Future Vol, veh/h	11	937	53	61	939	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1041	59	68	1043	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1052	0	0	1100
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	12.8	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	576	*1034	-	-	*1024	-	-	249	691
HCM Lane V/C Ratio	0.201	0.012	-	-	0.066	-	-	0.018	0.011
HCM Control Delay (s)	12.8	8.5	-	-	8.8	-	-	19.7	10.3
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

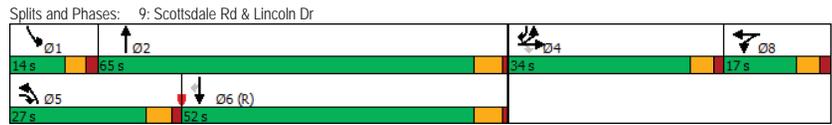
Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Total 2026 PM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	545	62	460	62	69	454	1791	67	1729	539
Future Volume (vph)	545	62	460	62	69	454	1791	67	1729	539
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	15.6	15.6	13.0	16.7	11.0	16.0	18.5
Total Split (s)	34.0	34.0	27.0	17.0	17.0	27.0	65.0	14.0	52.0	34.0
Total Split (%)	26.2%	26.2%	20.8%	13.1%	13.1%	20.8%	50.0%	10.8%	40.0%	26.2%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	27.9	27.9	49.3	10.5	10.5	21.4	63.3	8.4	47.9	81.5
Actuated g/C Ratio	0.21	0.21	0.38	0.08	0.08	0.16	0.49	0.06	0.37	0.63
v/c Ratio	0.92	0.93	0.79	0.48	0.48	0.89	0.83	0.65	1.03	0.57
Control Delay	66.2	68.3	28.7	68.8	68.8	31.7	72.3	33.4	84.6	68.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.2	68.3	28.7	68.8	68.8	31.7	72.3	33.4	84.6	68.3
LOS	E	E	C	E	E	C	E	F	E	B
Approach Delay		50.7			42.6		41.1		55.9	
Approach LOS		D			D		D		E	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	48.7
Intersection Capacity Utilization:	90.0%
ICU Level of Service:	E
Analysis Period (min):	15



Total 2026 PM  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	545	62	460	62	69	80	454	1791	50	67	1729	539
Future Volume (veh/h)	545	62	460	62	69	80	454	1791	50	67	1729	539
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	655	0	289	69	77	67	504	1990	45	74	1921	332
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	718	0	573	137	146	114	552	2389	54	94	1819	884
Arrive On Green	0.20	0.00	0.20	0.08	0.08	0.08	0.16	0.46	0.46	0.05	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1893	1487	3456	5137	116	1781	5106	1585
Grp Volume(v), veh/h	655	0	289	69	72	72	504	1318	717	74	1921	332
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1603	1728	1702	1849	1781	1702	1585
Q Serve(g_s), s	23.4	0.0	18.5	4.8	5.1	5.7	18.6	43.9	44.1	5.3	46.3	15.2
Cycle Q Clear(g_c), s	23.4	0.0	18.5	4.8	5.1	5.7	18.6	43.9	44.1	5.3	46.3	15.2
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	718	0	573	137	137	123	552	1583	860	94	1819	884
V/C Ratio(X)	0.91	0.00	0.50	0.50	0.53	0.59	0.91	0.83	0.83	0.79	1.06	0.38
Avail Cap(c_a), veh/h	781	0	601	156	156	141	572	1583	860	119	1819	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	0.0	32.4	57.6	57.7	58.0	53.7	30.4	30.4	60.9	41.8	16.1
Incr Delay (d2), s/veh	13.6	0.0	0.3	1.1	1.2	2.2	18.2	3.7	6.7	18.3	37.8	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	11.8	0.0	7.2	2.2	2.3	2.4	9.5	18.5	20.8	2.9	25.5	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.4	0.0	32.7	58.7	58.9	60.2	71.9	34.1	37.1	79.1	79.6	17.3
LnGrp LOS	E	A	C	E	E	E	E	C	D	E	F	B
Approach Vol, veh/h		944			213		2539			2327		
Approach Delay, s/veh		54.7			59.3		42.5			70.7		
Approach LOS		D			E		D			E		

Timer - Assigned Phs	
Phs Duration (G+Y+Rc), s	12.1 66.1 31.7 26.3 52.0 15.6
Change Period (Y+Rc), s	* 5.3 5.7 5.5 5.5 5.7 5.6
Max Green Setting (Gmax), s	* 8.7 59.3 28.5 21.5 46.3 11.4
Max Q Clear Time (g_c+I), s	7.3 46.1 25.4 20.6 48.3 7.7
Green Ext Time (p_c), s	0.0 3.1 0.8 0.1 0.0 0.2

Intersection Summary	
HCM 6th Ctrl Delay	55.9
HCM 6th LOS	E

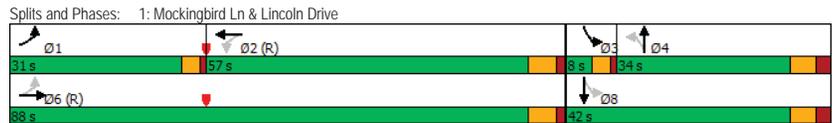
Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2026 PM Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	271	961	23	1015	8	69	69	53
Future Volume (vph)	271	961	23	1015	8	69	69	53
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	100.6	98.6	73.4	73.4	12.5	12.5	21.4	18.9
Actuated g/C Ratio	0.77	0.76	0.56	0.56	0.10	0.10	0.16	0.15
v/c Ratio	0.66	0.41	0.10	0.61	0.12	0.54	0.42	0.72
Control Delay	19.2	6.5	35.3	43.8	55.6	60.9	53.3	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	6.5	35.3	43.8	55.6	60.9	53.3	38.2
LOS	B	A	D	D	E	E	D	D
Approach Delay		9.2		43.6		60.5		41.8
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	



Total 2026 PM Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	271	961	32	23	1015	66	8	69	20	69	53	172
Future Volume (veh/h)	271	961	32	23	1015	66	8	69	20	69	53	172
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	301	1068	25	26	1128	45	9	77	13	77	59	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	2713	64	396	2302	92	86	122	21	149	71	161
Arrive On Green	0.07	0.76	0.76	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3549	83	516	3483	139	1189	1560	263	1781	506	1157
Grp Volume(v), veh/h	301	535	558	26	575	598	9	90	77	0	194	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	516	1777	1845	1189	0	1823	1781	0	1662
Q Serve(g_s), s	6.6	13.2	13.2	0.0	0.0	0.0	1.0	0.0	6.2	4.0	0.0	14.8
Cycle Q Clear(g_c), s	6.6	13.2	13.2	0.0	0.0	0.0	7.7	0.0	6.2	4.0	0.0	14.8
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.14	1.00		0.70
Lane Grp Cap(c), veh/h	501	1358	1418	396	1174	1219	86	0	142	149	0	232
V/C Ratio(X)	0.60	0.39	0.39	0.07	0.49	0.49	0.10	0.00	0.63	0.52	0.00	0.84
Avail Cap(c_a), veh/h	741	1358	1418	396	1174	1219	245	0	386	149	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.2	5.2	0.0	0.0	0.0	62.2	0.0	58.1	54.1	0.0	54.5
Incr Delay (d2), s/veh	1.2	0.9	0.8	0.2	1.0	1.0	0.5	0.0	4.6	3.0	0.0	7.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	4.6	4.8	0.0	0.3	0.3	0.3	0.0	3.1	0.7	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.1	6.0	6.0	0.2	1.0	1.0	62.7	0.0	62.7	57.2	0.0	62.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1394			1199			99			271	
Approach Delay, s/veh		6.0			1.0			62.7			60.8	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	13.5	91.9	8.0	16.6		105.4		24.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5		82.0		35.5				
Max Q Clear Time (g_c+I), s	8.6	2.0	6.0	9.7		15.2		16.8				
Green Ext Time (p_c), s	0.8	11.2	0.0	0.4		9.7						

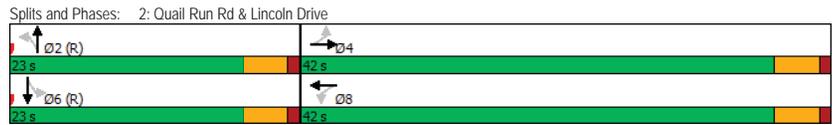
Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Total 2026 PM Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↖	↕		↕		↕
Traffic Volume (vph)	85	977	5	1003	5	0	14	0
Future Volume (vph)	85	977	5	1003	5	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	42.0	42.0	42.0	42.0	23.0	23.0	23.0	23.0
Total Split (%)	64.6%	64.6%	64.6%	64.6%	35.4%	35.4%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	31.3	31.3	31.3	31.3	24.7	24.7	24.7	24.7
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38
v/c Ratio	0.70	0.64	0.04	0.67	0.02	0.18	0.18	0.18
Control Delay	46.6	17.4	7.2	15.8	5.3	7.7	7.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	17.4	7.2	15.8	5.3	7.7	7.7	7.7
LOS	D	B	A	B	A	A	A	A
Approach Delay		19.7		15.8		5.3		7.7
Approach LOS		B		B		A		A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	17.2
Intersection Capacity Utilization:	51.3%
ICU Level of Service:	A
Intersection LOS:	B
Analysis Period (min):	15



Total 2026 PM Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕			↕	
Traffic Volume (veh/h)	85	977	7	5	1003	25	5	0	7	14	0	93
Future Volume (veh/h)	85	977	7	5	1003	25	5	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1086	8	6	1114	28	6	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1498	11	280	1468	37	333	30	378	120	38	612
Arrive On Green	0.83	0.83	0.83	0.83	0.83	0.83	0.45	0.00	0.45	0.45	0.00	0.45
Sat Flow, veh/h	493	3616	27	515	3542	89	568	67	846	128	85	1369
Grp Volume(v), veh/h	94	534	560	6	559	583	14	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	493	1777	1866	515	1777	1854	1481	0	0	1582	0	0
Q Serve(g_s), s	7.4	8.4	8.4	0.3	9.4	9.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.7	8.4	8.4	5.8	9.4	9.4	0.3	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.05	0.43		0.57	0.13		0.87
Lane Grp Cap(c), veh/h	267	736	773	280	736	768	741	0	0	770	0	0
V/C Ratio(X)	0.35	0.72	0.72	0.02	0.76	0.76	0.02	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	347	1025	1076	364	1025	1070	741	0	0	770	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.3	4.0	4.0	4.7	4.1	4.1	10.0	0.0	0.0	10.7	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.4	1.4	0.0	2.2	2.1	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.6	1.7	0.0	1.8	1.9	0.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	5.4	5.3	4.8	6.2	6.1	10.1	0.0	0.0	11.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1188			1148			14				119
Approach Delay, s/veh		5.5			6.2			10.1				11.1
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.7		30.3		34.7		30.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		37.5		18.5		37.5				
Max Q Clear Time (g_c+I1), s		2.3		15.7		4.9		11.4				
Green Ext Time (p_c), s		0.0		9.0		0.5		8.9				

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Total 2026 PM Mitigated  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗	↗	↗	↗	↗		↘	↘	↘	↘	↘
Traffic Vol, veh/h	7	944	41	6	941	9	66	3	47	7	0	34
Future Vol, veh/h	7	944	41	6	941	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1049	46	7	1046	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1056	0	0	1095
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	18.3	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	399	*1034	-	-	*1024	-	-	308	691
HCM Lane V/C Ratio	0.323	0.008	-	-	0.007	-	-	0.025	0.055
HCM Control Delay (s)	18.3	8.5	-	-	8.5	-	-	17	10.5
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.1	0.2

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

Total 2026 PM Mitigated  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗	↗	↗	↗	↗		↘	↘	↘	↘	↘
Traffic Vol, veh/h	11	937	53	61	939	8	14	1	89	4	0	7
Future Vol, veh/h	11	937	53	61	939	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1041	59	68	1043	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1052	0	0	1100
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	12.8	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	576	*1034	-	-	*1024	-	-	249	691
HCM Lane V/C Ratio	0.201	0.012	-	-	0.066	-	-	0.018	0.011
HCM Control Delay (s)	12.8	8.5	-	-	8.8	-	-	19.7	10.3
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Total 2026 PM Mitigated  
9: Scottsdale Rd & Lincoln Dr

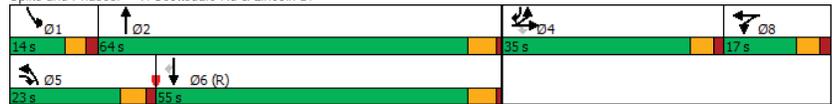
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	545	62	460	62	69	454	1791	67	1729	539
Future Volume (vph)	545	62	460	62	69	454	1791	67	1729	539
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	15.6	15.6	13.0	16.7	11.0	16.0	18.5
Total Split (s)	35.0	35.0	23.0	17.0	17.0	23.0	64.0	14.0	55.0	35.0
Total Split (%)	26.9%	26.9%	17.7%	13.1%	13.1%	17.7%	49.2%	10.8%	42.3%	26.9%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	28.6	28.6	47.9	10.5	10.5	19.3	62.7	8.4	49.3	83.6
Actuated g/C Ratio	0.22	0.22	0.37	0.08	0.08	0.15	0.48	0.06	0.38	0.64
v/c Ratio	0.90	0.91	0.81	0.48	0.48	0.99	0.84	0.65	1.00	0.56
Control Delay	61.7	63.5	30.2	68.8	31.7	92.2	34.3	84.6	59.9	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	63.5	30.2	68.8	31.7	92.2	34.3	84.6	59.9	10.7
LOS	E	E	C	E	C	F	C	F	E	B
Approach Delay		48.6			42.6		45.7		49.3	
Approach LOS		D			D		D		D	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 47.5	Intersection LOS: D
Intersection Capacity Utilization 90.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2026 PM Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	545	62	460	62	69	80	454	1791	50	67	1729	539
Future Volume (veh/h)	545	62	460	62	69	80	454	1791	50	67	1729	539
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	655	0	289	69	77	67	504	1990	45	74	1921	332
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	722	0	535	137	146	114	465	2378	54	94	1936	922
Arrive On Green	0.20	0.00	0.20	0.08	0.08	0.08	0.13	0.46	0.46	0.05	0.38	0.38
Sat Flow, veh/h	3563	0	1585	1781	1893	1487	3456	5137	116	1781	5106	1585
Grp Volume(v), veh/h	655	0	289	69	72	72	504	1318	717	74	1921	332
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1603	1728	1702	1849	1781	1702	1585
Q Serve(g_s), s	23.3	0.0	19.2	4.8	5.1	5.7	17.5	44.1	44.2	5.3	48.7	14.4
Cycle Q Clear(g_c), s	23.3	0.0	19.2	4.8	5.1	5.7	17.5	44.1	44.2	5.3	48.7	14.4
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	722	0	535	137	137	123	465	1575	856	94	1936	922
V/C Ratio(X)	0.91	0.00	0.54	0.50	0.53	0.59	1.08	0.84	0.84	0.79	0.99	0.36
Avail Cap(c_a), veh/h	808	0	573	156	156	141	465	1575	856	119	1936	922
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	0.0	34.9	57.6	57.7	58.0	56.2	30.6	30.6	60.9	40.2	14.4
Incr Delay (d2), s/veh	12.2	0.0	0.3	1.1	1.2	2.2	66.1	3.9	7.0	18.3	18.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	0.0	7.5	2.2	2.3	2.4	11.9	18.6	21.0	2.9	23.4	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	35.3	58.7	58.9	60.2	122.3	34.5	37.6	79.1	58.8	15.5
LnGrp LOS	E	A	D	E	E	E	F	C	D	E	E	B
Approach Vol, veh/h		944			213		2539			2327		
Approach Delay, s/veh		54.4			59.3		52.8			53.3		
Approach LOS		D			E		D			D		

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	12.1	65.9	31.9	23.0	55.0	15.6
Change Period (Y+Rc), s	* 5.3	5.7	5.5	5.5	5.7	5.6
Max Green Setting (Gmax), s	* 8.7	58.3	29.5	17.5	49.3	11.4
Max Q Clear Time (g_c+I), s	7.3	46.2	25.3	19.5	50.7	7.7
Green Ext Time (p_c), s	0.0	3.0	1.0	0.0	0.0	0.2

Intersection Summary

HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX J**

### **2026 PEAK HOUR ANALYSIS SCENARIO 2**

Background 2026 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	246	1044	24	973	6	38	80	100
Future Volume (vph)	246	1044	24	973	6	38	80	100
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	91.0	89.0	64.1	64.1	19.2	19.2	31.0	28.5
Actuated g/C Ratio	0.70	0.68	0.49	0.49	0.15	0.15	0.24	0.22
v/c Ratio	0.69	0.47	0.13	0.62	0.11	0.22	0.31	0.84
Control Delay	25.4	11.3	37.6	42.1	46.5	33.4	40.5	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	11.3	37.6	42.1	46.5	33.4	40.5	50.4
LOS	C	B	D	D	D	C	D	D
Approach Delay		13.9		42.0		34.7		48.6
Approach LOS		B		D		C		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 29.9	Intersection LOS: C
Intersection Capacity Utilization 76.3%	ICU Level of Service D
Analysis Period (min) 15	



Background 2026 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	246	1044	33	24	973	46	6	38	20	80	100	257
Future Volume (veh/h)	246	1044	33	24	973	46	6	38	20	80	100	257
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	273	1160	26	27	1081	34	7	42	13	89	111	175
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	2685	60	320	2255	71	86	168	52	236	128	202
Arrive On Green	0.08	0.72	0.72	1.00	1.00	1.00	0.12	0.12	0.12	0.04	0.19	0.19
Sat Flow, veh/h	1688	3740	84	448	3702	116	1036	1442	446	1688	688	1085
Grp Volume(v), veh/h	273	580	606	27	546	569	7	0	55	89	0	286
Grp Sat Flow(s),veh/h/ln	1688	1870	1954	448	1870	1948	1036	0	1888	1688	0	1773
Q Serve(g_s), s	7.5	16.5	16.5	0.3	0.0	0.0	0.9	0.0	3.4	5.0	0.0	20.3
Cycle Q Clear(g_c), s	7.5	16.5	16.5	2.6	0.0	0.0	12.2	0.0	3.4	5.0	0.0	20.3
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.24	1.00		0.61
Lane Grp Cap(c), veh/h	479	1343	1403	320	1139	1187	86	0	220	236	0	330
V/C Ratio(X)	0.57	0.43	0.43	0.08	0.48	0.48	0.08	0.00	0.25	0.38	0.00	0.87
Avail Cap(c_a), veh/h	646	1343	1403	320	1139	1187	264	0	545	236	0	634
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	7.5	7.5	0.0	0.0	0.0	61.6	0.0	52.2	48.2	0.0	51.4
Incr Delay (d2), s/veh	1.1	1.0	1.0	0.4	1.2	1.1	0.4	0.0	0.6	1.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.5	6.8	0.0	0.4	0.4	0.2	0.0	1.7	0.4	0.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	8.5	8.5	0.5	1.2	1.1	62.1	0.0	52.8	49.2	0.0	58.3
LnGrp LOS	A	A	A	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1459			1142			62				375
Approach Delay, s/veh		8.4			1.1			53.9				56.1
Approach LOS		A			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	14.1	85.2	9.0	21.7		99.3		30.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	9.5	4.6	7.0	14.2		18.5		22.3				
Green Ext Time (p_c), s	0.7	10.1	0.0	0.2		10.9		1.8				

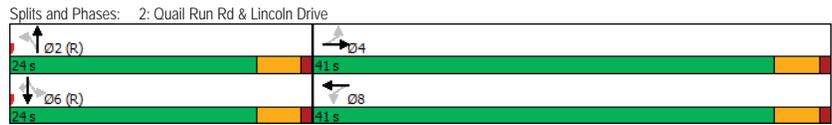
Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Background 2026 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	EBL	EBT	WBL	WBT	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖↗	↖↗	↖	↖	↖↗
Traffic Volume (vph)	115	1101	2	937	0	26	0	66
Future Volume (vph)	115	1101	2	937	0	26	0	66
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA	Perm
Protected Phases		4		8	2		6	
Permitted Phases	4		8			6		6
Detector Phase	4	4	8	8	2	6	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.6	32.6	32.6	32.6	23.4	23.4	23.4	23.4
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36
v/c Ratio	0.73	0.69	0.02	0.59	0.01	0.06	0.12	
Control Delay	47.3	20.5	9.5	14.7	0.0	16.3	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.3	20.5	9.5	14.7	0.0	16.3	5.5	
LOS	D	C	A	B	A	B	A	
Approach Delay		23.1		14.7			8.6	
Approach LOS		C		B			A	

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	18.9
Intersection Capacity Utilization:	54.1%
ICU Level of Service:	A
Analysis Period (min):	15



Background 2026 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖↗	↖↗	↖↗	↖	↖	↖↗
Traffic Volume (veh/h)	115	1101	3	2	937	12	0	0	8	26	0	66
Future Volume (veh/h)	115	1101	3	2	937	12	0	0	8	26	0	66
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1223	3	2	1041	13	0	0	9	29	0	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1556	4	242	1538	19	0	0	687	714	0	687
Arrive On Green	0.86	0.86	0.86	0.86	0.86	0.86	0.00	0.00	0.43	0.43	0.00	0.43
Sat Flow, veh/h	535	3637	9	455	3594	45	0	0	1585	1390	0	1585
Grp Volume(v), veh/h	128	598	628	2	515	539	0	0	9	29	0	73
Grp Sat Flow(s), veh/h/ln	535	1777	1869	455	1777	1862	0	0	1585	1390	0	1585
Q Serve(g_s), s	9.8	9.6	9.6	0.1	6.5	6.5	0.0	0.0	0.2	0.8	0.0	1.8
Cycle Q Clear(g_c), s	15.9	9.6	9.6	9.2	6.5	6.5	0.0	0.0	0.2	1.1	0.0	1.8
Prop In Lane	1.00		0.00	1.00		0.02	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	760	800	242	760	797	0	0	687	714	0	687
V/C Ratio(X)	0.44	0.79	0.79	0.01	0.68	0.68	0.00	0.00	0.01	0.04	0.00	0.11
Avail Cap(c_a), veh/h	362	998	1049	303	998	1046	0	0	687	714	0	687
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	3.4	3.4	5.3	3.1	3.1	0.0	0.0	10.5	10.8	0.0	10.9
Incr Delay (d2), s/veh	0.9	2.8	2.7	0.0	1.2	1.1	0.0	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	1.8	1.9	0.0	1.3	1.3	0.0	0.0	0.1	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.7	6.2	6.0	5.3	4.3	4.3	0.0	0.0	10.5	10.9	0.0	11.2
LnGrp LOS	A	A	A	A	A	A	A	A	B	B	A	B
Approach Vol, veh/h		1354			1056			9		102		
Approach Delay, s/veh		6.2			4.3			10.5		11.2		
Approach LOS		A			A			B		B		
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		32.2		32.8		32.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.2		17.9		3.8		11.2				
Green Ext Time (p_c), s		0.0		9.7		0.3		7.8				

Intersection Summary	
HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Background 2026 AM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1131	0	0	947	0	0
Future Vol, veh/h	1131	0	0	947	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1257	0	0	1052	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	629
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*636
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*636
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-

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

Background 2026 AM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↓
Traffic Vol, veh/h	0	0	8	0	0	5
Future Vol, veh/h	0	0	8	0	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	9	0	0	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	15	9	9
Stage 1	9	-	-
Stage 2	6	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1004	1073	1611
Stage 1	1014	-	-
Stage 2	1017	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1004	1073	1611
Mov Cap-2 Maneuver	1004	-	-
Stage 1	1014	-	-
Stage 2	1017	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1611	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-

Background 2026 AM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1131	4	0	943	0	3
Future Vol, veh/h	1131	4	0	943	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1257	4	0	1048	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1261	0	1783
Stage 1	-	-	-	-	1259
Stage 2	-	-	-	-	524
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	921	-	*73
Stage 1	-	-	-	-	*576
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	921	-	*73
Mov Cap-2 Maneuver	-	-	-	-	*312
Stage 1	-	-	-	-	*576
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	921	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2026 AM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1130	2	5	943	0	3
Future Vol, veh/h	1130	2	5	943	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1256	2	6	1048	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1258	0	1793
Stage 1	-	-	-	-	1257
Stage 2	-	-	-	-	536
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	925	-	*72
Stage 1	-	-	-	-	*579
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	925	-	*72
Mov Cap-2 Maneuver	-	-	-	-	*310
Stage 1	-	-	-	-	*575
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	925	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-
HCM Control Delay (s)	10.7	-	-	8.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2026 AM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	26	1067	34	18	877	10	50	0	29	5	0	12
Future Vol, veh/h	26	1067	34	18	877	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1186	38	20	974	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	985	0	0	1224
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	*952
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	*952
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.2	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	360	*1070	-	-	*952	-	-	295	715
HCM Lane V/C Ratio	0.244	0.027	-	-	0.021	-	-	0.019	0.019
HCM Control Delay (s)	18.2	8.5	-	-	8.9	-	-	17.4	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.1	0.1

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

Background 2026 AM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	3	1044	53	43	891	8	6	0	41	4	1	12
Future Vol, veh/h	3	1044	53	43	891	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1160	59	48	990	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	999	0	0	1219
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	*879
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	*879
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	11.8	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	579	*1070	-	-	879	-	-	284	715
HCM Lane V/C Ratio	0.09	0.003	-	-	0.054	-	-	0.016	0.019
HCM Control Delay (s)	11.8	8.4	-	-	9.3	-	-	17.9	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0	0.1

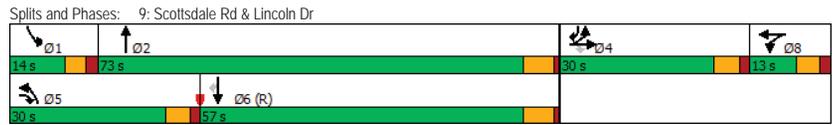
Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Background 2026 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	491	42	502	41	40	304	1453	56	1845	640
Future Volume (vph)	491	42	502	41	40	304	1453	56	1845	640
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	13.0	13.0	12.5	27.7	10.3	30.7	15.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	None	C-Max	None
Act Effct Green (s)	24.4	24.4	45.0	7.4	7.4	20.7	70.5	7.7	55.3	85.3
Actuated g/C Ratio	0.19	0.19	0.35	0.06	0.06	0.16	0.54	0.06	0.43	0.66
v/c Ratio	0.94	0.94	0.94	0.46	0.43	0.62	0.60	0.60	0.95	0.65
Control Delay	73.0	72.3	52.6	74.6	33.9	55.6	22.0	82.1	47.2	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.0	72.3	52.6	74.6	33.9	55.6	22.0	82.1	47.2	13.2
LOS	E	E	D	E	C	E	C	F	D	B
Approach Delay		63.0			46.5		27.7		39.4	
Approach LOS		E			D		C		D	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	40.2
Intersection Capacity Utilization:	86.9%
ICU Level of Service:	E
Analysis Period (min):	15



Background 2026 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	491	42	502	41	40	52	304	1453	43	56	1845	640
Future Volume (veh/h)	491	42	502	41	40	52	304	1453	43	56	1845	640
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	580	0	314	46	44	41	338	1614	31	62	2050	433
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	0	480	101	105	87	398	2407	46	79	2015	923
Arrive On Green	0.19	0.00	0.19	0.06	0.06	0.06	0.12	0.47	0.47	0.04	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1851	1522	3456	5158	99	1781	5106	1585
Grp Volume(v), veh/h	580	0	314	46	42	43	338	1065	580	62	2050	433
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1596	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	20.5	0.0	22.4	3.2	3.0	3.4	12.5	31.6	31.6	4.5	51.3	20.4
Cycle Q Clear(g_c), s	20.5	0.0	22.4	3.2	3.0	3.4	12.5	31.6	31.6	4.5	51.3	20.4
Prop In Lane	1.00		1.00	1.00		0.95	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	669	0	480	101	101	91	398	1589	865	79	2015	923
V/C Ratio(X)	0.87	0.00	0.65	0.45	0.42	0.47	0.85	0.67	0.67	0.78	1.02	0.47
Avail Cap(c_a), veh/h	671	0	481	101	101	91	651	1762	959	119	2015	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	39.4	59.3	59.2	59.4	56.4	26.9	26.9	61.5	39.3	15.6
Incr Delay (d2), s/veh	11.1	0.0	2.5	1.2	1.0	1.4	2.8	0.6	1.1	8.7	24.5	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.2	0.0	9.1	1.5	1.4	1.4	5.6	12.8	14.1	2.2	25.6	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.3	0.0	41.9	60.5	60.2	60.8	59.2	27.5	28.1	70.2	63.9	17.3
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	F	B
Approach Vol, veh/h		894			131		1983			2545		
Approach Delay, s/veh		55.1			60.5		33.1			56.1		
Approach LOS		E			E		C			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	66.4		29.9	20.5	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	6.5	33.6		24.4	14.5	53.3		5.4				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.5	0.0		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

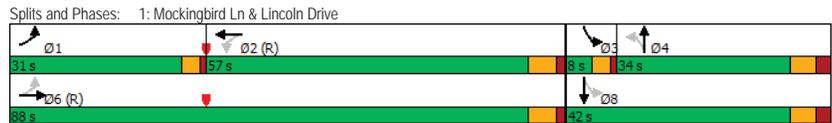
Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Background 2026 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	271	951	22	1006	8	69	66	53
Future Volume (vph)	271	951	22	1006	8	69	66	53
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	100.6	98.6	75.1	75.1	12.5	12.5	21.4	18.9
Actuated g/C Ratio	0.77	0.76	0.58	0.58	0.10	0.10	0.16	0.15
v/c Ratio	0.68	0.41	0.09	0.59	0.12	0.53	0.40	0.72
Control Delay	18.9	6.5	32.6	41.2	55.8	61.0	52.3	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	6.5	32.6	41.2	55.8	61.0	52.3	38.3
LOS	B	A	C	D	E	E	D	D
Approach Delay		9.2		41.1		60.5		41.5
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 72.0%	ICU Level of Service C
Analysis Period (min) 15	



Background 2026 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	271	951	32	22	1006	64	8	69	18	66	53	172
Future Volume (veh/h)	271	951	32	22	1006	64	8	69	18	66	53	172
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	301	1057	25	24	1118	49	9	77	11	73	59	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	503	2712	64	400	2292	100	86	125	18	151	70	161
Arrive On Green	0.07	0.76	0.76	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3548	84	521	3468	152	1189	1601	229	1781	506	1157
Grp Volume(v), veh/h	301	529	553	24	573	594	9	88	73	0	194	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	521	1777	1843	1189	0	1829	1781	0	1662
Q Serve(g_s), s	6.6	13.0	13.0	0.0	0.0	0.0	1.0	0.0	6.1	4.0	0.0	14.8
Cycle Q Clear(g_c), s	6.6	13.0	13.0	0.0	0.0	0.0	7.7	0.0	6.1	4.0	0.0	14.8
Prop In Lane	1.00		0.05	1.00		0.08	1.00		0.13	1.00		0.70
Lane Grp Cap(c), veh/h	503	1358	1418	400	1174	1218	86	0	142	151	0	232
V/C Ratio(X)	0.60	0.39	0.39	0.06	0.49	0.49	0.10	0.00	0.62	0.48	0.00	0.84
Avail Cap(c_a), veh/h	743	1358	1418	400	1174	1218	245	0	387	151	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.1	5.1	0.0	0.0	0.0	62.2	0.0	58.1	53.6	0.0	54.5
Incr Delay (d2), s/veh	1.1	0.8	0.8	0.2	1.1	1.0	0.5	0.0	4.3	2.4	0.0	7.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	4.6	4.8	0.0	0.3	0.3	0.3	0.0	3.0	0.5	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	6.0	5.9	0.2	1.1	1.0	62.7	0.0	62.4	56.0	0.0	62.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1383			1191			97				267
Approach Delay, s/veh		6.0			1.0			62.4				60.6
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	13.5	91.9	8.0	16.6		105.4		24.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5		82.0		35.5				
Max Q Clear Time (g_c+I), s	8.6	2.0	6.0	9.7		15.0		16.8				
Green Ext Time (p_c), s	0.8	11.1	0.0	0.4		9.5						

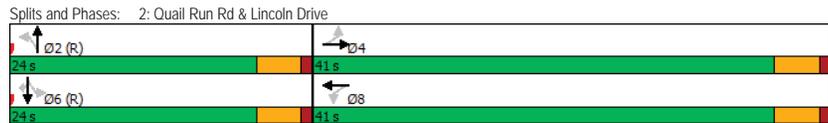
Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Background 2026 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	←	↑	↘	↓	↙
Lane Group	EBL	EBT	WBT	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖↗	↖↗	↖	↖	↖
Traffic Volume (vph)	85	968	996	0	14	0	93
Future Volume (vph)	85	968	996	0	14	0	93
Turn Type	Perm	NA	NA	NA	Perm	NA	Perm
Protected Phases		4	8	2		6	
Permitted Phases	4				6		6
Detector Phase	4	4	8	2	6	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	30.6	30.6	30.6	25.4	25.4	25.4	25.4
Actuated g/C Ratio	0.47	0.47	0.47	0.39	0.39	0.39	0.39
v/c Ratio	0.73	0.65	0.68	0.00	0.03	0.15	
Control Delay	52.3	17.9	17.9	0.0	15.4	7.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.3	17.9	17.9	0.0	15.4	7.0	
LOS	D	B	B	A	B	A	
Approach Delay		20.7	17.9			8.1	
Approach LOS		C	B			A	

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 18.8	Intersection LOS: B
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	



Background 2026 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	←	↖	↗	↑	↘	↙	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖↗		↖	↖	↖
Traffic Volume (veh/h)	85	968	1	0	996	25	0	0	2	14	0	93
Future Volume (veh/h)	85	968	1	0	996	25	0	0	2	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1076	1	0	1107	28	0	0	2	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1523	1	111	1481	37	0	0	703	729	0	703
Arrive On Green	0.84	0.84	0.84	0.00	0.84	0.84	0.00	0.00	0.44	0.44	0.00	0.44
Sat Flow, veh/h	496	3643	3	524	3542	90	0	0	1585	1394	0	1585
Grp Volume(v), veh/h	94	525	552	0	555	580	0	0	2	16	0	103
Grp Sat Flow(s),veh/h/ln	496	1777	1870	524	1777	1854	0	0	1585	1394	0	1585
Q Serve(g_s), s	7.7	7.7	7.7	0.0	8.9	8.9	0.0	0.0	0.0	0.4	0.0	2.5
Cycle Q Clear(g_c), s	14.9	7.7	7.7	0.0	8.9	8.9	0.0	0.0	0.0	0.8	0.0	2.5
Prop In Lane	1.00		0.00	1.00		0.05	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	743	782	111	743	775	0	0	703	729	0	703
V/C Ratio(X)	0.36	0.71	0.71	0.00	0.75	0.75	0.00	0.00	0.00	0.02	0.00	0.15
Avail Cap(c_a), veh/h	334	998	1050	186	998	1041	0	0	703	729	0	703
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.00	1.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.6	3.7	3.7	0.0	3.8	3.8	0.0	0.0	10.1	10.4	0.0	10.8
Incr Delay (d2), s/veh	0.8	1.4	1.3	0.0	2.1	2.1	0.0	0.0	0.0	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.0	1.8	1.8	0.0	0.0	0.0	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	5.1	5.0	0.0	6.0	5.9	0.0	0.0	10.1	10.5	0.0	11.2
LnGrp LOS	A	A	A	A	A	A	A	A	B	B	A	B
Approach Vol, veh/h		1171			1135			2				119
Approach Delay, s/veh		5.2			5.9			10.1				11.1
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.3		30.7		34.3		30.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.0		16.9		4.5		10.9				
Green Ext Time (p_c), s		0.0		8.4		0.3		8.6				

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

Background 2026 PM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	984	0	0	1020	0	0
Future Vol, veh/h	984	0	0	1020	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1093	0	0	1133	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	547
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*684
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*684
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	0	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-

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

Background 2026 PM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑		↑↑			↑
Traffic Vol, veh/h	0	0	2	0	0	1
Future Vol, veh/h	0	0	2	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	2	0	0	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	3	2	0
Stage 1	2	-	-
Stage 2	1	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1019	1082	1620
Stage 1	1021	-	-
Stage 2	1022	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1019	1082	1620
Mov Cap-2 Maneuver	1019	-	-
Stage 1	1021	-	-
Stage 2	1022	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1620	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-

Background 2026 PM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	985	0	0	1020	2	0
Future Vol, veh/h	985	0	0	1020	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1094	0	0	1133	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1094	0	1661
Stage 1	-	-	-	-	1094
Stage 2	-	-	-	-	567
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*1024	-	*88
Stage 1	-	-	-	-	*646
Stage 2	-	-	-	-	*630
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*1024	-	*88
Mov Cap-2 Maneuver	-	-	-	-	*331
Stage 1	-	-	-	-	*646
Stage 2	-	-	-	-	*630

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	331	-	-	*1024	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	16	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2026 PM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	985	0	0	1019	2	3
Future Vol, veh/h	985	0	0	1019	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1094	0	0	1132	2	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1094	0	1660
Stage 1	-	-	-	-	1094
Stage 2	-	-	-	-	566
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	*1024	-	*88
Stage 1	-	-	-	-	*646
Stage 2	-	-	-	-	*630
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	*1024	-	*88
Mov Cap-2 Maneuver	-	-	-	-	*331
Stage 1	-	-	-	-	*646
Stage 2	-	-	-	-	*630

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	479	-	-	*1024	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Control Delay (s)	12.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Background 2026 PM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	7	920	41	6	914	9	66	3	47	7	0	34
Future Vol, veh/h	7	920	41	6	914	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1022	46	7	1016	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1026	0	0	1068
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1061	-	-	972
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1061	-	-	972
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	18.3	11.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	398	1061	-	-	972	-	-	321	715
HCM Lane V/C Ratio	0.324	0.007	-	-	0.007	-	-	0.024	0.053
HCM Control Delay (s)	18.3	8.4	-	-	8.7	-	-	16.5	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.1	0.2

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

Background 2026 PM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Vol, veh/h	11	913	53	61	912	8	14	1	89	4	0	7
Future Vol, veh/h	11	913	53	61	912	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1014	59	68	1013	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1022	0	0	1073
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1066	-	-	966
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1066	-	-	966
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	12.5	13.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	598	1066	-	-	966	-	-	257	715
HCM Lane V/C Ratio	0.193	0.011	-	-	0.07	-	-	0.017	0.011
HCM Control Delay (s)	12.5	8.4	-	-	9	-	-	19.3	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Background 2026 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

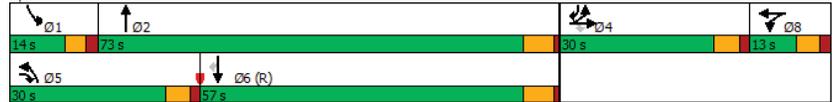
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	532	62	449	62	69	442	1791	67	1729	525
Future Volume (vph)	532	62	449	62	69	442	1791	67	1729	525
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	7.4	7.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	13.0	13.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	30.0	30.0	30.0	13.0	13.0	30.0	73.0	14.0	57.0	30.0
Total Split (%)	23.1%	23.1%	23.1%	10.0%	10.0%	23.1%	56.2%	10.8%	43.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	24.5	24.5	46.4	7.4	7.4	21.9	70.2	8.1	53.9	84.1
Actuated g/C Ratio	0.19	0.19	0.36	0.06	0.06	0.17	0.54	0.06	0.41	0.65
v/c Ratio	1.05	1.03	0.82	0.69	0.62	0.85	0.75	0.68	0.91	0.55
Control Delay	100.1	94.7	39.0	93.0	38.8	66.6	25.9	88.5	43.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.1	94.7	39.0	93.0	38.8	66.6	25.9	88.5	43.9	12.5
LOS	F	F	D	F	D	E	C	F	D	B
Approach Delay		72.3			54.7		33.8		38.0	
Approach LOS		E			D		C		D	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 43.1	Intersection LOS: D
Intersection Capacity Utilization 87.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Background 2026 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	532	62	449	62	69	80	442	1791	50	67	1729	525
Future Volume (veh/h)	532	62	449	62	69	80	442	1791	50	67	1729	525
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	640	0	277	69	77	67	491	1990	39	74	1921	316
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	671	0	550	101	108	85	548	2588	51	94	2015	924
Arrive On Green	0.19	0.00	0.19	0.06	0.06	0.06	0.16	0.50	0.50	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1893	1487	3456	5155	101	1781	5106	1585
Grp Volume(v), veh/h	640	0	277	69	72	72	491	1313	716	74	1921	316
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1603	1728	1702	1852	1781	1702	1585
Q Serve(g_s), s	23.1	0.0	18.0	4.9	5.2	5.8	18.1	40.7	40.8	5.3	47.5	13.5
Cycle Q Clear(g_c), s	23.1	0.0	18.0	4.9	5.2	5.8	18.1	40.7	40.8	5.3	47.5	13.5
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	671	0	550	101	101	91	548	1709	930	94	2015	924
V/C Ratio(X)	0.95	0.00	0.50	0.68	0.71	0.79	0.90	0.77	0.77	0.79	0.95	0.34
Avail Cap(c_a), veh/h	671	0	550	101	101	91	651	1762	959	119	2015	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	0.0	33.6	60.1	60.2	60.5	53.6	26.2	26.3	60.9	38.2	14.1
Incr Delay (d2), s/veh	23.6	0.0	0.3	14.2	17.8	34.0	12.3	1.8	3.3	18.3	11.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	0.0	7.0	2.6	2.8	3.2	8.8	16.6	18.5	2.9	21.6	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.7	0.0	33.9	74.3	78.1	94.5	65.9	28.1	29.6	79.1	49.9	15.1
LnGrp LOS	E	A	C	E	E	F	E	C	C	E	D	B
Approach Vol, veh/h		917			213			2520			2311	
Approach Delay, s/veh		63.1			82.4			35.9			46.1	
Approach LOS		E			F			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	71.0		30.0	26.1	57.0		13.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 8.7	67.3		24.5	24.5	51.3		7.4				
Max Q Clear Time (g_c+I), s	7.3	42.8		25.1	20.1	49.5		7.8				
Green Ext Time (p_c), s	0.0	3.3		0.0	0.5	1.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2026 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	246	1052	25	978	6	38	82	100
Future Volume (vph)	246	1052	25	978	6	38	82	100
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	91.0	89.0	64.1	64.1	19.2	19.2	31.0	28.5
Actuated g/C Ratio	0.70	0.68	0.49	0.49	0.15	0.15	0.24	0.22
v/c Ratio	0.69	0.48	0.14	0.62	0.11	0.22	0.32	0.84
Control Delay	25.8	11.3	38.2	42.3	46.5	32.9	40.6	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.3	38.2	42.3	46.5	32.9	40.6	50.4
LOS	C	B	D	D	D	C	D	D
Approach Delay		14.0		42.2		34.3		48.6
Approach LOS		B		D		C		D

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.84
Intersection Signal Delay:	30.0
Intersection Capacity Utilization:	76.6%
ICU Level of Service:	D
Analysis Period (min):	15



Total 2026 AM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	246	1052	33	25	978	47	6	38	21	82	100	257
Future Volume (veh/h)	246	1052	33	25	978	47	6	38	21	82	100	257
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	273	1169	26	28	1087	35	7	42	14	91	111	175
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	2686	60	317	2253	73	86	165	55	235	128	202
Arrive On Green	0.08	0.72	0.72	1.00	1.00	1.00	0.12	0.12	0.12	0.04	0.19	0.19
Sat Flow, veh/h	1688	3741	83	444	3699	119	1036	1413	471	1688	688	1085
Grp Volume(v), veh/h	273	584	611	28	550	572	7	0	56	91	0	286
Grp Sat Flow(s),veh/h/ln	1688	1870	1954	444	1870	1947	1036	0	1884	1688	0	1773
Q Serve(g_s), s	7.5	16.7	16.7	0.3	0.0	0.0	0.9	0.0	3.5	5.0	0.0	20.3
Cycle Q Clear(g_c), s	7.5	16.7	16.7	2.8	0.0	0.0	12.2	0.0	3.5	5.0	0.0	20.3
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.25	1.00		0.61
Lane Grp Cap(c), veh/h	477	1343	1403	317	1139	1186	86	0	220	235	0	330
V/C Ratio(X)	0.57	0.44	0.44	0.09	0.48	0.48	0.08	0.00	0.25	0.39	0.00	0.87
Avail Cap(c_a), veh/h	644	1343	1403	317	1139	1186	264	0	543	235	0	634
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	7.5	7.5	0.0	0.0	0.0	61.6	0.0	52.3	48.3	0.0	51.4
Incr Delay (d2), s/veh	1.1	1.0	1.0	0.4	1.2	1.1	0.4	0.0	0.6	1.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.6	6.9	0.0	0.4	0.4	0.2	0.0	1.7	0.5	0.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	8.6	8.5	0.5	1.2	1.1	62.1	0.0	52.9	49.4	0.0	58.3
LnGrp LOS	A	A	A	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1468			1150			63				377
Approach Delay, s/veh		8.4			1.1			53.9				56.1
Approach LOS		A			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	14.1	85.2	9.0	21.7		99.3		30.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	9.5	4.8	7.0	14.2		18.7		22.3				
Green Ext Time (p_c), s	0.7	10.2	0.0	0.2		11.0		1.8				

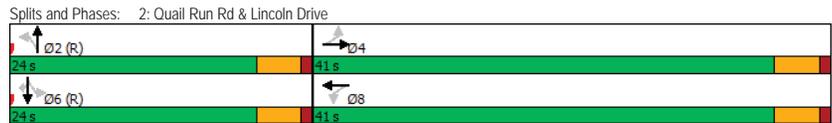
Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Total 2026 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖↗		↖	↖	↖	↖
Traffic Volume (vph)	115	1106	22	938	6	0	26	0	66
Future Volume (vph)	115	1106	22	938	6	0	26	0	66
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.7	32.7	32.7	32.7	23.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.72	0.69	0.20	0.59	0.03	0.06	0.12	0.12	0.12
Control Delay	46.8	20.5	12.3	14.2	6.5	16.4	5.5	5.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	20.5	12.3	14.2	6.5	16.4	5.5	5.5	5.5
LOS	D	C	B	B	A	B	A	A	A
Approach Delay		23.0		14.1		6.5		8.6	
Approach LOS		C		B		A		A	

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	18.6
Intersection Capacity Utilization:	52.8%
ICU Level of Service:	A
Analysis Period (min):	15



Total 2026 AM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖↗		↖	↖	↖
Traffic Volume (veh/h)	115	1106	8	22	938	12	6	0	11	26	0	66
Future Volume (veh/h)	115	1106	8	22	938	12	6	0	11	26	0	66
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1229	9	24	1042	13	7	0	12	29	0	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1550	11	239	1541	19	283	33	411	721	0	686
Arrive On Green	0.86	0.86	0.86	0.86	0.86	0.86	0.43	0.00	0.43	0.43	0.00	0.43
Sat Flow, veh/h	535	3616	26	450	3594	45	479	75	950	1409	0	1585
Grp Volume(v), veh/h	128	604	634	24	515	540	19	0	0	29	0	73
Grp Sat Flow(s),veh/h/ln	535	1777	1866	450	1777	1862	1503	0	0	1409	0	1585
Q Serve(g_s), s	9.8	9.8	9.8	1.7	6.4	6.4	0.0	0.0	0.1	0.1	0.0	1.8
Cycle Q Clear(g_c), s	15.8	9.8	9.8	11.0	6.4	6.4	0.4	0.0	0.6	0.0	0.0	1.8
Prop In Lane	1.00		0.01	1.00		0.02	0.37		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	290	762	800	239	762	798	726	0	0	721	0	686
V/C Ratio(X)	0.44	0.79	0.79	0.10	0.68	0.68	0.03	0.00	0.00	0.04	0.00	0.11
Avail Cap(c_a), veh/h	361	998	1048	299	998	1046	726	0	0	721	0	686
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	3.3	3.3	5.7	3.1	3.1	10.6	0.0	0.0	10.6	0.0	11.0
Incr Delay (d2), s/veh	0.9	2.9	2.8	0.2	1.2	1.1	0.1	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.9	0.1	1.3	1.3	0.2	0.0	0.0	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	6.3	6.2	5.9	4.3	4.2	10.6	0.0	0.0	10.7	0.0	11.3
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1366			1079			19		102		
Approach Delay, s/veh		6.3			4.3			10.6		11.1		
Approach LOS		A			A			B		B		
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		32.2		32.8		32.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I1), s		2.4		17.8		3.8		13.0				
Green Ext Time (p_c), s		0.0		9.8		0.3		8.0				

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Total 2026 AM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1134	5	0	968	0	12
Future Vol, veh/h	1134	5	0	968	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1260	6	0	1076	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	633
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*636
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*636
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	636	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Control Delay (s)	10.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2026 AM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	0	9	8	0	25	5
Future Vol, veh/h	0	9	8	0	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	9	0	28	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	71	9	9
Stage 1	9	-	-
Stage 2	62	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	933	1073	1611
Stage 1	1014	-	-
Stage 2	961	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	917	1073	1611
Mov Cap-2 Maneuver	917	-	-
Stage 1	997	-	-
Stage 2	961	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1073	1611
HCM Lane V/C Ratio	-	-	0.009	0.017
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0.1

Total 2026 AM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1146	4	0	964	0	3
Future Vol, veh/h	1146	4	0	964	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1273	4	0	1071	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1277	0	1811
Stage 1	-	-	-	-	1275
Stage 2	-	-	-	-	536
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	900	-	*70
Stage 1	-	-	-	-	*559
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	900	-	*70
Mov Cap-2 Maneuver	-	-	-	-	*306
Stage 1	-	-	-	-	*559
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	900	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 AM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1145	2	5	964	0	3
Future Vol, veh/h	1145	2	5	964	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1272	2	6	1071	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1274	0	1821
Stage 1	-	-	-	-	1273
Stage 2	-	-	-	-	548
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	904	-	*69
Stage 1	-	-	-	-	*561
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	904	-	*69
Mov Cap-2 Maneuver	-	-	-	-	*304
Stage 1	-	-	-	-	*557
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	904	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-
HCM Control Delay (s)	10.7	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 AM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	1082	34	18	898	10	50	0	29	5	0	12
Future Vol, veh/h	26	1082	34	18	898	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1202	38	20	998	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1009	0	0	1240
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	949
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	949
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.5	12.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	354	*1070	-	-	949	-	-	287	715
HCM Lane V/C Ratio	0.248	0.027	-	-	0.021	-	-	0.019	0.019
HCM Control Delay (s)	18.5	8.5	-	-	8.9	-	-	17.8	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-	-	0.1	0.1

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

Total 2026 AM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	1059	53	43	912	8	6	0	41	4	1	12
Future Vol, veh/h	3	1059	53	43	912	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1177	59	48	1013	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1022	0	0	1236
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1066	-	-	952
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1066	-	-	952
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	12.1	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	556	1066	-	-	952	-	-	266	715
HCM Lane V/C Ratio	0.094	0.003	-	-	0.05	-	-	0.017	0.019
HCM Control Delay (s)	12.1	8.4	-	-	9	-	-	18.8	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.1	0.1

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

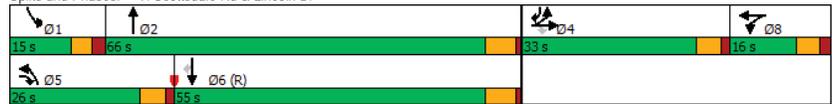
Total 2026 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	499	42	508	41	40	313	1453	56	1845	651
Future Volume (vph)	499	42	508	41	40	313	1453	56	1845	651
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	15.6	15.6	12.5	27.7	10.3	30.7	15.5
Total Split (s)	33.0	33.0	26.0	16.0	16.0	26.0	66.0	15.0	55.0	33.0
Total Split (%)	25.4%	25.4%	20.0%	12.3%	12.3%	20.0%	50.8%	11.5%	42.3%	25.4%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	C-Max	None	
Act Effct Green (s)	26.3	26.3	44.2	10.1	10.1	17.9	65.4	8.2	53.4	85.4
Actuated g/C Ratio	0.20	0.20	0.34	0.08	0.08	0.14	0.50	0.06	0.41	0.66
v/c Ratio	0.88	0.88	0.94	0.34	0.34	0.74	0.65	0.55	0.98	0.64
Control Delay	60.1	60.2	50.0	63.9	30.1	63.3	26.5	77.3	54.1	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	60.2	50.0	63.9	30.1	63.3	26.5	77.3	54.1	11.4
LOS	E	E	D	E	C	E	C	E	D	B
Approach Delay		55.2			40.6		32.9		43.7	
Approach LOS		E			D		C		D	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.98
Intersection Signal Delay:	42.3
Intersection Capacity Utilization:	89.4%
ICU Level of Service:	E
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2026 AM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Future Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	588	0	286	46	44	36	348	1614	31	62	2050	390
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	656	0	478	137	151	110	405	2338	45	79	1936	893
Arrive On Green	0.18	0.00	0.18	0.08	0.08	0.08	0.12	0.45	0.45	0.04	0.38	0.38
Sat Flow, veh/h	3563	0	1585	1781	1957	1432	3456	5158	99	1781	5106	1585
Grp Volume(v), veh/h	588	0	286	46	39	41	348	1065	580	62	2050	390
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1613	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.0	0.0	20.0	3.2	2.7	3.1	12.9	32.4	32.4	4.5	49.3	18.5
Cycle Q Clear(g_c), s	21.0	0.0	20.0	3.2	2.7	3.1	12.9	32.4	32.4	4.5	49.3	18.5
Prop In Lane	1.00		1.00	1.00		0.89	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	656	0	478	137	137	124	405	1543	840	79	1936	893
V/C Ratio(X)	0.90	0.00	0.60	0.34	0.29	0.33	0.86	0.69	0.69	0.78	1.06	0.44
Avail Cap(c_a), veh/h	754	0	521	143	142	129	545	1579	859	133	1936	893
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	38.7	56.9	56.6	56.8	56.3	28.3	28.3	61.5	40.3	16.4
Incr Delay (d2), s/veh	11.4	0.0	1.0	0.5	0.4	0.6	8.1	1.0	1.9	6.1	38.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.4	0.0	7.9	1.5	1.2	1.3	6.1	13.3	14.7	2.2	27.1	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	63.2	0.0	39.7	57.4	57.1	57.4	64.4	29.3	30.2	67.5	78.4	18.0
LnGrp LOS	E	A	D	E	E	E	E	C	C	E	F	B
Approach Vol, veh/h		874			126		1993			2502		
Approach Delay, s/veh		55.5			57.3		35.7			68.7		
Approach LOS		E			E		D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	64.6		29.4	20.7	55.0		15.6				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 9.7	60.3		27.5	20.5	49.3		10.4				
Max Q Clear Time (g_c+I), s	6.5	34.4		23.0	14.9	51.3		5.2				
Green Ext Time (p_c), s	0.0	2.5		1.0	0.4	0.0		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	54.4
HCM 6th LOS	D

Notes  
User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2026 AM Scenario 2 Mitigated  
1: Mockingbird Ln & Lincoln Drive

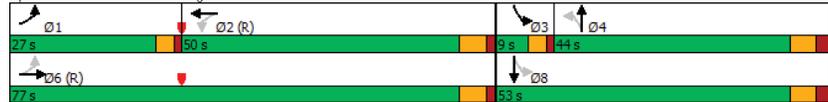
Smoke Tree Resort  
Timings

	↖	→	↗	↖	↖	↑	↗	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	246	1052	25	978	6	38	82	100
Future Volume (vph)	246	1052	25	978	6	38	82	100
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	3.5	15.0	15.0	15.0	7.0	7.0	3.5	7.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	27.0	77.0	50.0	50.0	44.0	44.0	9.0	53.0
Total Split (%)	20.8%	59.2%	38.5%	38.5%	33.8%	33.8%	6.9%	40.8%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	91.0	89.0	64.1	64.1	19.2	19.2	31.0	28.5
Actuated g/C Ratio	0.70	0.68	0.49	0.49	0.15	0.15	0.24	0.22
v/c Ratio	0.69	0.48	0.14	0.62	0.11	0.22	0.32	0.84
Control Delay	25.8	11.3	39.9	43.7	46.5	32.9	40.6	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.3	39.9	43.7	46.5	32.9	40.6	50.4
LOS	C	B	D	D	D	C	D	D
Approach Delay		14.0		43.6		34.3		48.6
Approach LOS		B		D		C		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Total 2026 AM Scenario 2 Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↗	↖	↖	↑	↗	↓	↖			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	246	1052	33	25	978	47	6	38	21	82	100	257
Future Volume (veh/h)	246	1052	33	25	978	47	6	38	21	82	100	257
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1772	1969	1772	1772	1969	1772	1772	1969	1772	1772	1969	1772
Adj Flow Rate, veh/h	273	1169	26	28	1087	35	7	42	14	91	111	175
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	2686	60	317	2253	73	86	165	55	235	128	202
Arrive On Green	0.08	0.72	0.72	1.00	1.00	1.00	0.12	0.12	0.12	0.04	0.19	0.19
Sat Flow, veh/h	1688	3741	83	444	3699	119	1036	1413	471	1688	688	1085
Grp Volume(v), veh/h	273	584	611	28	550	572	7	0	56	91	0	286
Grp Sat Flow(s),veh/h/ln	1688	1870	1954	444	1870	1947	1036	0	1884	1688	0	1773
Q Serve(g_s), s	7.5	16.7	16.7	0.3	0.0	0.0	0.9	0.0	3.5	5.0	0.0	20.3
Cycle Q Clear(g_c), s	7.5	16.7	16.7	2.8	0.0	0.0	12.2	0.0	3.5	5.0	0.0	20.3
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.25	1.00		0.61
Lane Grp Cap(c), veh/h	477	1343	1403	317	1139	1186	86	0	220	235	0	330
V/C Ratio(X)	0.57	0.44	0.44	0.09	0.48	0.48	0.08	0.00	0.25	0.39	0.00	0.87
Avail Cap(c_a), veh/h	644	1343	1403	317	1139	1186	264	0	543	235	0	634
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	7.5	7.5	0.0	0.0	0.0	61.6	0.0	52.3	48.3	0.0	51.4
Incr Delay (d2), s/veh	1.1	1.0	1.0	0.4	1.2	1.1	0.4	0.0	0.6	1.0	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.6	6.9	0.0	0.4	0.4	0.2	0.0	1.7	0.5	0.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	8.6	8.5	0.5	1.2	1.1	62.1	0.0	52.9	49.4	0.0	58.3
LnGrp LOS	A	A	A	A	A	A	E	A	D	D	A	E
Approach Vol, veh/h		1468			1150			63				377
Approach Delay, s/veh		8.4			1.1			53.9				56.1
Approach LOS		A			A			D				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	14.1	85.2	9.0	21.7		99.3		30.7				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	23.0	44.0	5.0	37.5		71.0		46.5				
Max Q Clear Time (g_c+I), s	9.5	4.8	7.0	14.2		18.7		22.3				
Green Ext Time (p_c), s	0.7	10.2	0.0	0.2		11.0		1.8				

Intersection Summary

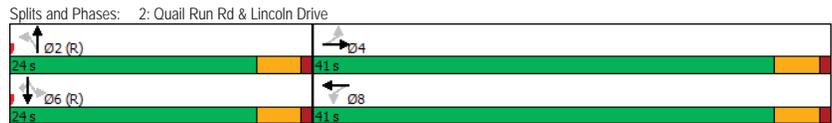
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Total 2026 AM Scenario 2 Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖	↖
Traffic Volume (vph)	115	1106	22	938	6	0	26	0	66
Future Volume (vph)	115	1106	22	938	6	0	26	0	66
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases		4		8		2		6	
Permitted Phases	4		8		2		6		6
Detector Phase	4	4	8	8	2	2	6	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	32.7	32.7	32.7	32.7	23.3	23.3	23.3	23.3	23.3
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.72	0.69	0.20	0.59	0.03	0.06	0.12	0.12	0.12
Control Delay	46.8	20.5	12.0	14.3	6.5	16.4	5.5	5.5	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	20.5	12.0	14.3	6.5	16.4	5.5	5.5	5.5
LOS	D	C	B	B	A	B	A	A	A
Approach Delay		23.0		14.3		6.5		8.6	
Approach LOS		C		B		A		A	

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	18.6
Intersection Capacity Utilization:	52.8%
ICU Level of Service:	A
Analysis Period (min):	15



Total 2026 AM Scenario 2 Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	115	1106	8	22	938	12	6	0	11	26	0	66
Future Volume (veh/h)	115	1106	8	22	938	12	6	0	11	26	0	66
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No								
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1229	9	24	1042	13	7	0	12	29	0	73
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1550	11	239	1541	19	283	33	411	721	0	686
Arrive On Green	0.86	0.86	0.86	0.86	0.86	0.86	0.43	0.00	0.43	0.43	0.00	0.43
Sat Flow, veh/h	535	3616	26	450	3594	45	479	75	950	1409	0	1585
Grp Volume(v), veh/h	128	604	634	24	515	540	19	0	0	29	0	73
Grp Sat Flow(s),veh/h/ln	535	1777	1866	450	1777	1862	1503	0	0	1409	0	1585
Q Serve(g_s), s	9.8	9.8	9.8	1.7	6.4	6.4	0.0	0.0	0.1	0.1	0.0	1.8
Cycle Q Clear(g_c), s	15.8	9.8	9.8	11.0	6.4	6.4	0.4	0.0	0.6	0.6	0.0	1.8
Prop In Lane	1.00		0.01	1.00		0.02	0.37		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	290	762	800	239	762	798	726	0	0	721	0	686
V/C Ratio(X)	0.44	0.79	0.79	0.10	0.68	0.68	0.03	0.00	0.00	0.04	0.00	0.11
Avail Cap(c_a), veh/h	361	998	1048	299	998	1046	726	0	0	721	0	686
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	3.3	3.3	5.7	3.1	3.1	10.6	0.0	0.0	10.6	0.0	11.0
Incr Delay (d2), s/veh	0.9	2.9	2.8	0.2	1.2	1.1	0.1	0.0	0.0	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.8	1.9	0.1	1.3	1.3	0.2	0.0	0.0	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	6.3	6.2	5.9	4.3	4.2	10.6	0.0	0.0	10.7	0.0	11.3
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	B
Approach Vol, veh/h		1366			1079			19		102		
Approach Delay, s/veh		6.3			4.3			10.6		11.1		
Approach LOS		A			A			B		B		
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.8		32.2		32.8		32.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I1), s		2.4		17.8		3.8		13.0				
Green Ext Time (p_c), s		0.0		9.8		0.3		8.0				

Intersection Summary	
HCM 6th Ctrl Delay	5.7
HCM 6th LOS	A

Total 2026 AM Scenario 2 Mitigated  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	1134	5	0	968	0	12
Future Vol, veh/h	1134	5	0	968	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1260	6	0	1076	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	633
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*636
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*636
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	636	-	-	-
HCM Lane V/C Ratio	0.021	-	-	-
HCM Control Delay (s)	10.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2026 AM Scenario 2 Mitigated  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	0	9	8	0	25	5
Future Vol, veh/h	0	9	8	0	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	9	0	28	6

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	71	9	9
Stage 1	9	-	-
Stage 2	62	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	933	1073	1611
Stage 1	1014	-	-
Stage 2	961	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	917	1073	1611
Mov Cap-2 Maneuver	917	-	-
Stage 1	997	-	-
Stage 2	961	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1073	1611
HCM Lane V/C Ratio	-	-	0.009	0.017
HCM Control Delay (s)	-	-	8.4	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0.1

Total 2026 AM Scenario 2 Mitigated  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1146	4	0	964	0	3
Future Vol, veh/h	1146	4	0	964	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1273	4	0	1071	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1277	0	1811
Stage 1	-	-	-	-	1275
Stage 2	-	-	-	-	536
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	900	-	*70
Stage 1	-	-	-	-	*559
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	900	-	*70
Mov Cap-2 Maneuver	-	-	-	-	*306
Stage 1	-	-	-	-	*559
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	900	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 AM Scenario 2 Mitigated  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1145	2	5	964	0	3
Future Vol, veh/h	1145	2	5	964	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1272	2	6	1071	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1274	0	1821
Stage 1	-	-	-	-	1273
Stage 2	-	-	-	-	548
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	904	-	*69
Stage 1	-	-	-	-	*561
Stage 2	-	-	-	-	*652
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	904	-	*69
Mov Cap-2 Maneuver	-	-	-	-	*304
Stage 1	-	-	-	-	*557
Stage 2	-	-	-	-	*652

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	-	-	904	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-
HCM Control Delay (s)	10.7	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 AM Scenario 2 Mitigated  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	26	1082	34	18	898	10	50	0	29	5	0	12
Future Vol, veh/h	26	1082	34	18	898	10	50	0	29	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1202	38	20	998	11	56	0	32	6	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1009	0	0	1240
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1070	-	-	949
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1070	-	-	949
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.5	12.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	354	*1070	-	-	949	-	-	287	715
HCM Lane V/C Ratio	0.248	0.027	-	-	0.021	-	-	0.019	0.019
HCM Control Delay (s)	18.5	8.5	-	-	8.9	-	-	17.8	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-	-	0.1	0.1

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

Total 2026 AM Scenario 2 Mitigated  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	3	1059	53	43	912	8	6	0	41	4	1	12
Future Vol, veh/h	3	1059	53	43	912	8	6	0	41	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1177	59	48	1013	9	7	0	46	4	1	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1022	0	0	1236
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	1066	-	-	952
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	1066	-	-	952
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	12.1	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	556	1066	-	-	952	-	-	266	715
HCM Lane V/C Ratio	0.094	0.003	-	-	0.05	-	-	0.017	0.019
HCM Control Delay (s)	12.1	8.4	-	-	9	-	-	18.8	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.1	0.1

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

Total 2026 AM Scenario 2 Mitigated  
9: Scottsdale Rd & Lincoln Dr

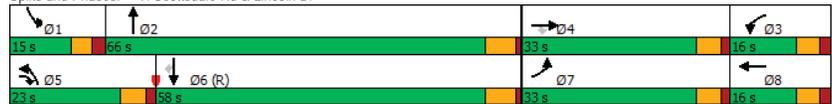
Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	499	42	508	41	40	313	1453	56	1845	651
Future Volume (vph)	499	42	508	41	40	313	1453	56	1845	651
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8	5	2	1	6	6
Permitted Phases			4							6
Detector Phase	7	4	5	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	7.0	10.0	10.0	7.0	10.0	5.0	10.0	10.0
Minimum Split (s)	15.5	15.5	12.5	15.6	15.6	12.5	27.7	10.3	30.7	30.7
Total Split (s)	33.0	33.0	23.0	16.0	16.0	23.0	66.0	15.0	58.0	58.0
Total Split (%)	25.4%	25.4%	17.7%	12.3%	12.3%	17.7%	50.8%	11.5%	44.6%	44.6%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.7
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.7
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	Min	Min	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	25.5	25.5	44.9	10.1	12.1	17.4	64.2	8.2	52.7	52.7
Actuated g/C Ratio	0.20	0.20	0.35	0.08	0.09	0.13	0.49	0.06	0.41	0.41
v/c Ratio	0.91	0.91	0.93	0.34	0.29	0.76	0.66	0.55	1.00	0.77
Control Delay	63.7	63.7	46.9	63.9	29.1	65.5	27.1	77.3	57.3	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	63.7	46.9	63.9	29.1	65.5	27.1	77.3	57.3	16.6
LOS	E	E	D	E	C	E	C	E	E	B
Approach Delay		55.6			39.9		33.8		47.4	
Approach LOS		E			D		C		D	

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 44.3	Intersection LOS: D
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2026 AM Scenario 2 Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Future Volume (veh/h)	499	42	508	41	40	52	313	1453	43	56	1845	651
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	588	0	286	46	44	36	348	1614	31	62	2050	367
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	648	0	369	253	151	110	401	2451	47	79	2054	638
Arrive On Green	0.18	0.00	0.12	0.14	0.08	0.08	0.12	0.48	0.48	0.04	0.40	0.40
Sat Flow, veh/h	3563	0	1585	1781	1957	1432	3456	5158	99	1781	5106	1585
Grp Volume(v), veh/h	588	0	286	46	39	41	348	1065	580	62	2050	367
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1613	1728	1702	1853	1781	1702	1585
Q Serve(g_s), s	21.0	0.0	12.8	3.0	2.7	3.1	12.9	31.1	31.1	4.5	52.1	23.4
Cycle Q Clear(g_c), s	21.0	0.0	12.8	3.0	2.7	3.1	12.9	31.1	31.1	4.5	52.1	23.4
Prop In Lane	1.00		1.00	1.00		0.89	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	648	0	369	253	137	124	401	1618	880	79	2054	638
V/C Ratio(X)	0.91	0.00	0.77	0.18	0.29	0.33	0.87	0.66	0.66	0.78	1.00	0.58
Avail Cap(c_a), veh/h	754	0	519	253	142	129	465	1618	880	133	2054	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.1	0.0	18.5	49.1	56.6	56.8	56.5	26.1	26.1	61.5	38.8	30.2
Incr Delay (d2), s/veh	12.5	0.0	2.8	0.1	0.4	0.6	13.0	0.8	1.5	6.1	19.4	3.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	10.5	0.0	4.9	1.3	1.2	1.3	6.3	12.6	13.9	2.2	25.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.6	0.0	21.3	49.2	57.1	57.4	69.5	26.8	27.5	67.5	58.2	34.0
LnGrp LOS	E	A	C	D	E	E	E	C	C	E	E	C
Approach Vol, veh/h		874			126		1993			2479		
Approach Delay, s/veh		50.4			54.3		34.5			54.8		
Approach LOS		D			D		C			D		

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	67.5	24.1	20.7	20.6	58.0	29.2	15.6
Change Period (Y+Rc), s	* 5.3	5.7	5.6	5.5	5.5	5.7	5.5	5.6
Max Green Setting (Gmax), s	* 9.7	60.3	10.4	27.5	17.5	52.3	27.5	10.4
Max Q Clear Time (g_c+I), s	6.5	33.1	5.0	14.8	14.9	54.1	23.0	5.1
Green Ext Time (p_c), s	0.0	2.5	0.0	0.4	0.2	0.0	0.6	0.1

Intersection Summary

HCM 6th Ctrl Delay	46.7
HCM 6th LOS	D

Notes

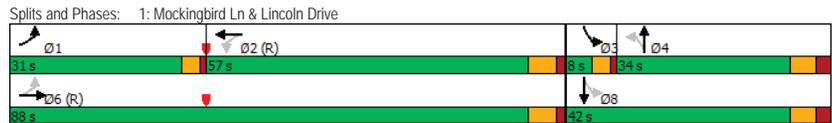
- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.
- \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2026 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	271	961	23	1015	8	69	68	53
Future Volume (vph)	271	961	23	1015	8	69	68	53
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	100.6	98.6	74.7	74.7	12.5	12.5	21.4	18.9
Actuated g/C Ratio	0.77	0.76	0.57	0.57	0.10	0.10	0.16	0.15
v/c Ratio	0.68	0.41	0.09	0.60	0.12	0.54	0.42	0.72
Control Delay	19.6	6.5	33.1	41.4	55.6	60.9	53.1	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	6.5	33.1	41.4	55.6	60.9	53.1	38.2
LOS	B	A	C	D	E	E	D	D
Approach Delay		9.3		41.2		60.5		41.7
Approach LOS		A		D		E		D

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 27.3	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	



Total 2026 PM Scenario 2  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↖		↖	↖	↖
Traffic Volume (veh/h)	271	961	32	23	1015	66	8	69	20	68	53	172
Future Volume (veh/h)	271	961	32	23	1015	66	8	69	20	68	53	172
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	301	1068	25	26	1128	51	9	77	13	76	59	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	2713	64	396	2288	103	86	122	21	149	71	161
Arrive On Green	0.07	0.76	0.76	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3549	83	516	3463	156	1189	1560	263	1781	506	1157
Grp Volume(v), veh/h	301	535	558	26	579	600	9	90	76	0	194	
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	516	1777	1842	1189	0	1823	1781	0	1662
Q Serve(g_s), s	6.6	13.2	13.2	0.0	0.0	0.0	1.0	0.0	6.2	4.0	0.0	14.8
Cycle Q Clear(g_c), s	6.6	13.2	13.2	0.0	0.0	0.0	7.7	0.0	6.2	4.0	0.0	14.8
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.14	1.00		0.70
Lane Grp Cap(c), veh/h	499	1358	1418	396	1174	1217	86	0	142	149	0	232
V/C Ratio(X)	0.60	0.39	0.39	0.07	0.49	0.49	0.10	0.00	0.63	0.51	0.00	0.84
Avail Cap(c_a), veh/h	740	1358	1418	396	1174	1217	245	0	386	149	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.67	0.67	0.67	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.2	5.2	0.0	0.0	0.0	62.2	0.0	58.1	54.0	0.0	54.5
Incr Delay (d2), s/veh	1.2	0.9	0.8	0.2	1.0	1.0	0.5	0.0	4.6	2.8	0.0	7.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.4	4.6	4.8	0.0	0.3	0.3	0.3	0.0	3.1	0.6	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	6.1	6.0	6.0	0.2	1.0	1.0	62.7	0.0	62.7	56.8	0.0	62.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1394			1205			99			270	
Approach Delay, s/veh		6.0			1.0			62.7			60.7	
Approach LOS		A			A			E			E	
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	13.5	91.9	8.0	16.6		105.4		24.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5		82.0		35.5				
Max Q Clear Time (g_c+I), s	8.6	2.0	6.0	9.7		15.2		16.8				
Green Ext Time (p_c), s	0.8	11.3	0.0	0.4		9.7						

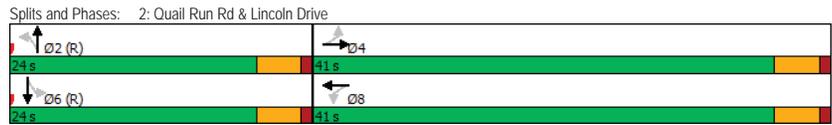
Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Total 2026 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↘	↕		↕	↕	↕
Traffic Volume (vph)	85	975	27	998	11	0	14	0
Future Volume (vph)	85	975	27	998	11	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	30.7	30.7	30.7	30.7	25.3	25.3	25.3	25.3
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.39	0.39	0.39	0.39
v/c Ratio	0.72	0.65	0.21	0.68	0.03	0.03	0.18	0.18
Control Delay	50.5	17.9	11.8	16.8	6.6	6.6	7.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	17.9	11.8	16.8	6.6	6.6	7.8	7.8
LOS	D	B	B	B	A	A	A	A
Approach Delay		20.5		16.7		6.6		7.8
Approach LOS		C		B		A		A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	18.0
Intersection Capacity Utilization:	50.8%
ICU Level of Service:	A
Analysis Period (min):	15



Total 2026 PM Scenario 2  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↘	↕			↕		↕	↕	
Traffic Volume (veh/h)	85	975	8	27	998	25	11	0	7	14	0	93
Future Volume (veh/h)	85	975	8	27	998	25	11	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1083	9	30	1109	28	12	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1514	13	276	1485	37	449	21	255	119	38	606
Arrive On Green	0.84	0.84	0.84	0.84	0.84	0.84	0.44	0.00	0.44	0.44	0.00	0.44
Sat Flow, veh/h	495	3612	30	516	3542	89	815	49	576	127	85	1369
Grp Volume(v), veh/h	94	533	559	30	556	581	20	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	495	1777	1865	516	1777	1854	1440	0	0	1582	0	0
Q Serve(g_s), s	7.7	7.9	7.9	1.5	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.0	7.9	7.9	8.0	8.8	8.8	0.4	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.60		0.40	0.13		0.87
Lane Grp Cap(c), veh/h	263	745	782	276	745	777	725	0	0	762	0	0
V/C Ratio(X)	0.36	0.72	0.72	0.11	0.75	0.75	0.03	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	333	998	1047	349	998	1041	725	0	0	762	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	3.7	3.7	5.0	3.8	3.8	10.2	0.0	0.0	10.9	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.5	1.4	0.2	2.1	2.1	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.1	1.7	1.8	0.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	5.2	5.1	5.2	5.9	5.8	10.3	0.0	0.0	11.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1186			1167		20			119		
Approach Delay, s/veh		5.3			5.8		10.3			11.3		
Approach LOS		A			A		B			B		
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.1		30.9		34.1		30.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I), s		2.4		17.0		4.9		10.8				
Green Ext Time (p_c), s		0.0		8.5		0.5		9.1				

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

Total 2026 PM Scenario 2  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	989	7	0	1049	0	21
Future Vol, veh/h	989	7	0	1049	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1099	8	0	1166	0	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	554
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*684
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*684
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	684	-	-	-
HCM Lane V/C Ratio	0.034	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2026 PM Scenario 2  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↓
Traffic Vol, veh/h	0	15	2	0	34	1
Future Vol, veh/h	0	15	2	0	34	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	2	0	38	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	79	2	2
Stage 1	2	-	-
Stage 2	77	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	924	1082	1620
Stage 1	1021	-	-
Stage 2	946	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	903	1082	1620
Mov Cap-2 Maneuver	903	-	-
Stage 1	998	-	-
Stage 2	946	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1082	1620	-
HCM Lane V/C Ratio	-	0.015	0.023	-
HCM Control Delay (s)	-	8.4	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0.1	-

Total 2026 PM Scenario 2  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1010	0	0	1049	2	0
Future Vol, veh/h	1010	0	0	1049	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1122	0	0	1166	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1122	0	1705
Stage 1	-	-	-	-	1122
Stage 2	-	-	-	-	583
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1001	-	*82 *684
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1001	-	*82 *684
Mov Cap-2 Maneuver	-	-	-	-	*319
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	1001	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	16.4	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 PM Scenario 2  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1010	0	0	1048	2	3
Future Vol, veh/h	1010	0	0	1048	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1122	0	0	1164	2	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1122	0	1704
Stage 1	-	-	-	-	1122
Stage 2	-	-	-	-	582
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1001	-	*82 *684
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1001	-	*82 *684
Mov Cap-2 Maneuver	-	-	-	-	*319
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	-	-	1001	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Control Delay (s)	12.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 PM Scenario 2  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	7	945	41	6	943	9	66	3	47	7	0	34
Future Vol, veh/h	7	945	41	6	943	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1050	46	7	1048	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1058	0	0	1096
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	18.3	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	399	*1034	-	-	*1024	-	-	308	691
HCM Lane V/C Ratio	0.323	0.008	-	-	0.007	-	-	0.025	0.055
HCM Control Delay (s)	18.3	8.5	-	-	8.5	-	-	17	10.5
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.1	0.2

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

Total 2026 PM Scenario 2  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	11	938	53	61	941	8	14	1	89	4	0	7
Future Vol, veh/h	11	938	53	61	941	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	1	-	-	1
Grade, %	-	0	-	-	0	-	-	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1042	59	68	1046	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1055	0	0	1101
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	12.8	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	576	*1034	-	-	*1024	-	-	248	691
HCM Lane V/C Ratio	0.201	0.012	-	-	0.066	-	-	0.018	0.011
HCM Control Delay (s)	12.8	8.5	-	-	8.8	-	-	19.8	10.3
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

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

Total 2026 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	546	62	460	62	69	454	1791	67	1729	539
Future Volume (vph)	546	62	460	62	69	454	1791	67	1729	539
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	13.0	13.0	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	18.6	18.6	13.0	16.7	11.0	16.0	18.5
Total Split (s)	35.0	35.0	23.0	20.0	20.0	23.0	62.0	13.0	52.0	35.0
Total Split (%)	26.9%	26.9%	17.7%	15.4%	15.4%	17.7%	47.7%	10.0%	40.0%	26.9%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	28.6	28.6	48.3	13.1	13.1	19.7	57.9	8.3	46.3	80.6
Actuated g/C Ratio	0.22	0.22	0.37	0.10	0.10	0.15	0.45	0.06	0.36	0.62
v/c Ratio	0.91	0.91	0.77	0.39	0.41	0.97	0.91	0.65	1.06	0.56
Control Delay	62.4	63.8	24.9	61.5	28.9	87.2	40.7	85.7	79.8	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	63.8	24.9	61.5	28.9	87.2	40.7	85.7	79.8	9.9
LOS	E	E	C	E	C	F	D	F	E	A
Approach Delay		46.6			38.5		49.9		63.8	
Approach LOS		D			D		D		E	

Intersection Summary	
Cycle Length:	130
Actuated Cycle Length:	130
Offset:	0 (0%), Referenced to phase 6:SBT, Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.06
Intersection Signal Delay:	54.4
Intersection Capacity Utilization:	92.5%
ICU Level of Service F	
Intersection LOS:	D
Analysis Period (min):	15

Splits and Phases: 9: Scottsdale Rd & Lincoln Dr



Total 2026 PM Scenario 2  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	546	62	460	62	69	80	454	1791	50	67	1729	539
Future Volume (veh/h)	546	62	460	62	69	80	454	1791	50	67	1729	539
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	656	0	289	69	77	67	504	1990	39	74	1921	332
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	723	0	535	178	189	149	465	2267	44	94	1819	886
Arrive On Green	0.20	0.00	0.20	0.10	0.10	0.10	0.13	0.44	0.44	0.05	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1893	1487	3456	5155	101	1781	5106	1585
Grp Volume(v), veh/h	656	0	289	69	72	72	504	1313	716	74	1921	332
Grp Sat Flow(s), veh/h/ln	1781	0	1585	1781	1777	1603	1728	1702	1852	1781	1702	1585
Q Serve(g_s), s	23.4	0.0	19.2	4.7	4.9	5.5	17.5	45.8	45.9	5.3	46.3	15.2
Cycle Q Clear(g_c), s	23.4	0.0	19.2	4.7	4.9	5.5	17.5	45.8	45.9	5.3	46.3	15.2
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	723	0	535	178	178	160	465	1497	814	94	1819	886
V/C Ratio(X)	0.91	0.00	0.54	0.39	0.40	0.45	1.08	0.88	0.88	0.79	1.06	0.37
Avail Cap(c_a), veh/h	808	0	573	197	197	178	465	1497	814	106	1819	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	0.0	34.9	54.8	54.9	55.1	56.2	33.2	33.3	60.9	41.8	16.0
Incr Delay (d2), s/veh	12.3	0.0	0.3	0.5	0.6	0.7	66.1	6.0	10.4	25.7	37.8	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	11.6	0.0	7.5	2.2	2.2	2.3	11.9	19.8	22.6	3.1	25.5	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	62.9	0.0	35.2	55.3	55.4	55.9	122.3	39.2	43.7	86.5	79.6	17.2
LnGrp LOS	E	A	D	E	E	E	F	D	D	F	F	B
Approach Vol, veh/h		945			213		2533			2327		
Approach Delay, s/veh		54.4			55.5		57.0			71.0		
Approach LOS		D			E		E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	62.9		31.9	23.0	52.0		18.6				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 7.7	56.3		29.5	17.5	46.3		14.4				
Max Q Clear Time (g_c+I), s	7.3	47.9		25.4	19.5	48.3		7.5				
Green Ext Time (p_c), s	0.0	2.6		1.0	0.0	0.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Notes  
User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.  
\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Total 2026 PM Scenario 2 Mitigated  
1: Mockingbird Ln & Lincoln Drive

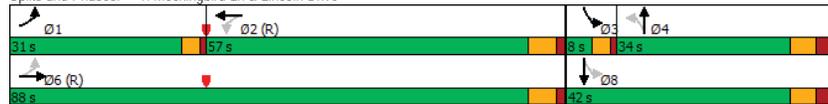
Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↗	↘	↙
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↖↗	↖	↖↗	↖	↖	↖	↖
Traffic Volume (vph)	271	961	23	1015	8	69	68	53
Future Volume (vph)	271	961	23	1015	8	69	68	53
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	1	6		2		4	3	8
Permitted Phases	6		2		4		8	
Detector Phase	1	6	2	2	4	4	3	8
Switch Phase								
Minimum Initial (s)	4.0	15.0	15.0	15.0	10.0	10.0	4.0	10.0
Minimum Split (s)	8.0	27.0	27.0	27.0	33.5	33.5	8.0	33.5
Total Split (s)	31.0	88.0	57.0	57.0	34.0	34.0	8.0	42.0
Total Split (%)	23.8%	67.7%	43.8%	43.8%	26.2%	26.2%	6.2%	32.3%
Yellow Time (s)	3.0	4.5	4.5	4.5	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	1.5	1.5	1.5	2.5	2.5	1.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.5	6.5	4.0	6.5
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	100.6	98.6	73.4	73.4	12.5	12.5	21.4	18.9
Actuated g/C Ratio	0.77	0.76	0.56	0.56	0.10	0.10	0.16	0.15
v/c Ratio	0.66	0.41	0.10	0.61	0.12	0.54	0.42	0.72
Control Delay	19.2	6.5	34.2	42.9	55.6	60.9	53.1	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	6.5	34.2	42.9	55.6	60.9	53.1	38.2
LOS	B	A	C	D	E	E	D	D
Approach Delay		9.2		42.7		60.5		41.7
Approach LOS		A		D		E		D

Intersection Summary

Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Mockingbird Ln & Lincoln Drive



Total 2026 PM Scenario 2 Mitigated  
1: Mockingbird Ln & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗	↖	↖	↖↗	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	271	961	32	23	1015	66	8	69	20	68	53	172
Future Volume (veh/h)	271	961	32	23	1015	66	8	69	20	68	53	172
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	301	1068	25	26	1128	51	9	77	13	76	59	135
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	499	2713	64	396	2288	103	86	122	21	149	71	161
Arrive On Green	0.07	0.76	0.76	1.00	1.00	1.00	0.08	0.08	0.08	0.03	0.14	0.14
Sat Flow, veh/h	1781	3549	83	516	3463	156	1189	1560	263	1781	506	1157
Grp Volume(v), veh/h	301	535	558	26	579	600	9	90	76	0	194	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1855	516	1777	1842	1189	0	1823	1781	0	1662
Q Serve(g_s), s	6.6	13.2	13.2	0.0	0.0	0.0	1.0	0.0	6.2	4.0	0.0	14.8
Cycle Q Clear(g_c), s	6.6	13.2	13.2	0.0	0.0	0.0	7.7	0.0	6.2	4.0	0.0	14.8
Prop In Lane	1.00		0.04	1.00		0.08	1.00		0.14	1.00		0.70
Lane Grp Cap(c), veh/h	499	1358	1418	396	1174	1217	86	0	142	149	0	232
V/C Ratio(X)	0.60	0.39	0.39	0.07	0.49	0.49	0.10	0.00	0.63	0.51	0.00	0.84
Avail Cap(c_a), veh/h	740	1358	1418	396	1174	1217	245	0	386	149	0	454
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.68	0.68	0.68	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.0	5.2	5.2	0.0	0.0	0.0	62.2	0.0	58.1	54.0	0.0	54.5
Incr Delay (d2), s/veh	1.2	0.9	0.8	0.2	1.0	1.0	0.5	0.0	4.6	2.8	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.6	4.8	0.0	0.3	0.3	0.3	0.0	3.1	0.6	0.0	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	6.0	6.0	0.2	1.0	1.0	62.7	0.0	62.7	56.8	0.0	62.3
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1394			1205			99				270
Approach Delay, s/veh		6.0			1.0			62.7				60.7
Approach LOS		A			A			E				E
Timer - Assigned Phs	1	2	3	4		6		8				
Phs Duration (G+Y+Rc), s	13.5	91.9	8.0	16.6		105.4		24.6				
Change Period (Y+Rc), s	4.0	6.0	4.0	6.5		6.0		6.5				
Max Green Setting (Gmax), s	27.0	51.0	4.0	27.5		82.0		35.5				
Max Q Clear Time (g_c+I), s	8.6	2.0	6.0	9.7		15.2		16.8				
Green Ext Time (p_c), s	0.8	11.3	0.0	0.4		9.7						

Intersection Summary

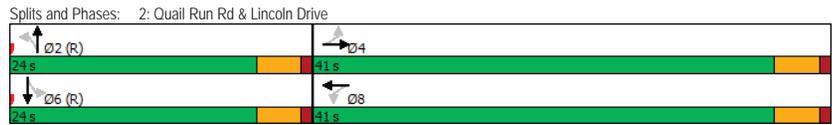
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Total 2026 PM Scenario 2 Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
Timings

	↖	→	↘	↙	↖	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↕	↘	↕		↕	↕	↕
Traffic Volume (vph)	85	975	27	998	11	0	14	0
Future Volume (vph)	85	975	27	998	11	0	14	0
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	41.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0
Total Split (%)	63.1%	63.1%	63.1%	63.1%	36.9%	36.9%	36.9%	36.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	30.9	30.9	30.9	30.9	25.1	25.1	25.1	25.1
Actuated g/C Ratio	0.48	0.48	0.48	0.48	0.39	0.39	0.39	0.39
v/c Ratio	0.71	0.65	0.21	0.68	0.03	0.18	0.18	0.18
Control Delay	48.5	17.5	11.7	16.1	6.6	7.9	7.9	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	17.5	11.7	16.1	6.6	7.9	7.9	7.9
LOS	D	B	B	B	A	A	A	A
Approach Delay		20.0		16.0		6.6		7.9
Approach LOS		B		B		A		A

Intersection Summary	
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	17.4
Intersection Capacity Utilization:	50.8%
ICU Level of Service:	A
Analysis Period (min):	15



Total 2026 PM Scenario 2 Mitigated  
2: Quail Run Rd & Lincoln Drive

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	↖	→	↘	↙	↖	↑	↘	↓	↙			
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↘	↕			↕		↕	↕	
Traffic Volume (veh/h)	85	975	8	27	998	25	11	0	7	14	0	93
Future Volume (veh/h)	85	975	8	27	998	25	11	0	7	14	0	93
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	1083	9	30	1109	28	12	0	8	16	0	103
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	1514	13	276	1485	37	449	21	255	119	38	606
Arrive On Green	0.84	0.84	0.84	0.84	0.84	0.84	0.44	0.00	0.44	0.44	0.00	0.44
Sat Flow, veh/h	495	3612	30	516	3542	89	815	49	576	127	85	1369
Grp Volume(v), veh/h	94	533	559	30	556	581	20	0	0	119	0	0
Grp Sat Flow(s), veh/h/ln	495	1777	1865	516	1777	1854	1440	0	0	1582	0	0
Q Serve(g_s), s	7.7	7.9	7.9	1.5	8.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.0	7.9	7.9	8.0	8.8	8.8	0.4	0.0	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.02	1.00		0.05	0.60		0.40	0.13		0.87
Lane Grp Cap(c), veh/h	263	745	782	276	745	777	725	0	0	762	0	0
V/C Ratio(X)	0.36	0.72	0.72	0.11	0.75	0.75	0.03	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	333	998	1047	349	998	1041	725	0	0	762	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	3.7	3.7	5.0	3.8	3.8	10.2	0.0	0.0	10.9	0.0	0.0
Incr Delay (d2), s/veh	0.7	1.5	1.4	0.2	2.1	2.1	0.1	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	1.5	1.6	0.1	1.7	1.8	0.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.3	5.2	5.1	5.2	5.9	5.8	10.3	0.0	0.0	11.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	B	A	A	B	A	A
Approach Vol, veh/h		1186			1167			20				119
Approach Delay, s/veh		5.3			5.8			10.3				11.3
Approach LOS		A			A			B				B
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.1		30.9		34.1		30.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		36.5		19.5		36.5				
Max Q Clear Time (g_c+I1), s		2.4		17.0		4.9		10.8				
Green Ext Time (p_c), s		0.0		8.5		0.5		9.1				

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

Total 2026 PM Scenario 2 Mitigated  
3: Access A & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		↑
Traffic Vol, veh/h	989	7	0	1049	0	21
Future Vol, veh/h	989	7	0	1049	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1099	8	0	1166	0	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	554
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	-	0	*684
Stage 1	-	0	0
Stage 2	-	0	0
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	*684
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	684	-	-	-
HCM Lane V/C Ratio	0.034	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

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

Total 2026 PM Scenario 2 Mitigated  
4: Quail Run Rd & Access B

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑		↑			↓
Traffic Vol, veh/h	0	15	2	0	34	1
Future Vol, veh/h	0	15	2	0	34	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	2	0	38	1

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	79	2	2
Stage 1	2	-	-
Stage 2	77	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	924	1082	1620
Stage 1	1021	-	-
Stage 2	946	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	903	1082	1620
Mov Cap-2 Maneuver	903	-	-
Stage 1	998	-	-
Stage 2	946	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	7.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	1082	1620	-
HCM Lane V/C Ratio	-	0.015	0.023	-
HCM Control Delay (s)	-	8.4	7.3	0
HCM Lane LOS	-	A	A	A
HCM 95th %tile Q(veh)	-	0	0.1	-

Total 2026 PM Scenario 2 Mitigated  
5: Lincoln Medical West & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1010	0	0	1049	2	0
Future Vol, veh/h	1010	0	0	1049	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1122	0	0	1166	2	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1122	0	1705
Stage 1	-	-	-	-	1122
Stage 2	-	-	-	-	583
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1001	-	*82 *684
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1001	-	*82 *684
Mov Cap-2 Maneuver	-	-	-	-	*319
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	1001	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	16.4	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 PM Scenario 2 Mitigated  
6: Lincoln Medical East & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1010	0	0	1048	2	3
Future Vol, veh/h	1010	0	0	1048	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1122	0	0	1164	2	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1122	0	1704
Stage 1	-	-	-	-	1122
Stage 2	-	-	-	-	582
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1001	-	*82 *684
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607
Platoon blocked, %	-	-	1	-	1
Mov Cap-1 Maneuver	-	-	1001	-	*82 *684
Mov Cap-2 Maneuver	-	-	-	-	*319
Stage 1	-	-	-	-	*626
Stage 2	-	-	-	-	*607

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	-	-	1001	-
HCM Lane V/C Ratio	0.012	-	-	-	-
HCM Control Delay (s)	12.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

Total 2026 PM Scenario 2 Mitigated  
7: Apartment Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	7	945	41	6	943	9	66	3	47	7	0	34
Future Vol, veh/h	7	945	41	6	943	9	66	3	47	7	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1050	46	7	1048	10	73	3	52	8	0	38

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1058	0	0	1096
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	18.3	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	399	*1034	-	-	*1024	-	-	308	691
HCM Lane V/C Ratio	0.323	0.008	-	-	0.007	-	-	0.025	0.055
HCM Control Delay (s)	18.3	8.5	-	-	8.5	-	-	17	10.5
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-	-	0.1	0.2

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

Total 2026 PM Scenario 2 Mitigated  
8: AJ's Drwy & Lincoln Dr

Smoke Tree Resort  
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕		↕ ↕	
Traffic Vol, veh/h	11	938	53	61	941	8	14	1	89	4	0	7
Future Vol, veh/h	11	938	53	61	941	8	14	1	89	4	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1042	59	68	1046	9	16	1	99	4	0	8

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1055	0	0	1101
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	1
Mov Cap-1 Maneuver	*1034	-	-	*1024
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	12.8	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	576	*1034	-	-	*1024	-	-	248	691
HCM Lane V/C Ratio	0.201	0.012	-	-	0.066	-	-	0.018	0.011
HCM Control Delay (s)	12.8	8.5	-	-	8.8	-	-	19.8	10.3
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.1	0

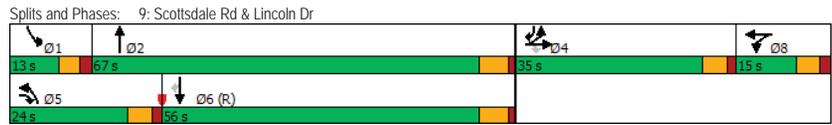
Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Total 2026 PM Scenario 2 Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
Timings

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	546	62	460	62	69	454	1791	67	1729	539
Future Volume (vph)	546	62	460	62	69	454	1791	67	1729	539
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	pm+ov
Protected Phases	4	4	5	8	8	5	2	1	6	4
Permitted Phases			4							6
Detector Phase	4	4	5	8	8	5	2	1	6	4
Switch Phase										
Minimum Initial (s)	13.0	13.0	7.0	9.4	9.4	7.0	10.0	5.0	10.0	13.0
Minimum Split (s)	18.5	18.5	13.0	15.0	15.0	13.0	16.7	11.0	16.0	18.5
Total Split (s)	35.0	35.0	24.0	15.0	15.0	24.0	67.0	13.0	56.0	35.0
Total Split (%)	26.9%	26.9%	18.5%	11.5%	11.5%	18.5%	51.5%	10.0%	43.1%	26.9%
Yellow Time (s)	4.0	4.0	4.0	3.6	3.6	4.0	4.7	3.3	4.7	4.0
All-Red Time (s)	1.5	1.5	1.5	2.0	2.0	1.5	1.0	2.0	1.0	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.6	5.6	5.5	5.7	5.3	5.7	5.5
Lead/Lag			Lead			Lead	Lag	Lead	Lag	
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None							
Act Effct Green (s)	28.6	28.6	48.0	9.4	9.4	19.4	62.5	7.4	50.3	84.6
Actuated g/C Ratio	0.22	0.22	0.37	0.07	0.07	0.15	0.48	0.06	0.39	0.65
v/c Ratio	0.91	0.91	0.81	0.54	0.52	0.98	0.84	0.74	0.98	0.56
Control Delay	62.3	63.7	33.0	74.6	33.7	91.0	33.6	99.2	54.8	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	63.7	33.0	74.6	33.7	91.0	33.6	99.2	54.8	11.8
LOS	E	E	C	E	C	F	C	F	D	B
Approach Delay		50.1			45.7		44.9		46.2	
Approach LOS		D			D		D		D	

Intersection Summary										
Cycle Length: 130										
Actuated Cycle Length: 130										
Offset: 0 (0%), Referenced to phase 6:SBT, Start of Green										
Natural Cycle: 120										
Control Type: Actuated-Coordinated										
Maximum v/c Ratio: 0.98										
Intersection Signal Delay: 46.4										
Intersection Capacity Utilization 89.5%										
ICU Level of Service E										
Analysis Period (min) 15										



Total 2026 PM Scenario 2 Mitigated  
9: Scottsdale Rd & Lincoln Dr

Smoke Tree Resort  
HCM 6th Signalized Intersection Summary

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	546	62	460	62	69	80	454	1791	50	67	1729	539
Future Volume (veh/h)	546	62	460	62	69	80	454	1791	50	67	1729	539
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	656	0	289	69	77	67	504	1990	39	74	1921	332
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	723	0	547	129	137	107	492	2465	48	94	1976	935
Arrive On Green	0.20	0.00	0.20	0.07	0.07	0.07	0.14	0.48	0.48	0.05	0.39	0.39
Sat Flow, veh/h	3563	0	1585	1781	1893	1487	3456	5155	101	1781	5106	1585
Grp Volume(v), veh/h	656	0	289	69	72	72	504	1313	716	74	1921	332
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	1777	1603	1728	1702	1852	1781	1702	1585
Q Serve(g_s), s	23.4	0.0	19.0	4.9	5.1	5.7	18.5	42.6	42.7	5.3	48.1	14.1
Cycle Q Clear(g_c), s	23.4	0.0	19.0	4.9	5.1	5.7	18.5	42.6	42.7	5.3	48.1	14.1
Prop In Lane	1.00		1.00	1.00		0.93	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	723	0	547	129	128	116	492	1628	886	94	1976	935
V/C Ratio(X)	0.91	0.00	0.53	0.54	0.56	0.62	1.02	0.81	0.81	0.79	0.97	0.36
Avail Cap(c_a), veh/h	808	0	585	129	128	116	492	1628	886	106	1976	935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	0.0	34.1	58.2	58.3	58.6	55.7	28.8	28.8	60.9	39.2	13.8
Incr Delay (d2), s/veh	12.3	0.0	0.3	2.3	3.3	7.6	47.1	2.9	5.2	25.7	14.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	0.0	7.4	2.3	2.4	2.6	11.3	17.7	19.9	3.1	22.4	8.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.9	0.0	34.4	60.5	61.6	66.2	102.8	31.7	34.1	86.5	53.9	14.9
LnGrp LOS	E	A	C	E	E	E	F	C	C	F	D	B
Approach Vol, veh/h		945			213		2533			2327		
Approach Delay, s/veh		54.2			62.8		46.5			49.3		
Approach LOS		D			E		D			D		

Timer - Assigned Phs												
Phs Duration (G+Y+Rc), s	12.1	67.9		31.9	24.0	56.0		15.0				
Change Period (Y+Rc), s	* 5.3	5.7		5.5	5.5	5.7		5.6				
Max Green Setting (Gmax), s	* 7.7	61.3		29.5	18.5	50.3		9.4				
Max Q Clear Time (g_c+I1), s	7.3	44.7		25.4	20.5	50.1		7.7				
Green Ext Time (p_c), s	0.0	3.2		1.0	0.0	0.1						

Intersection Summary										
HCM 6th Ctrl Delay 49.4										
HCM 6th LOS D										

Notes  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.  
 \* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX K**

### **QUEUE STORAGE ANALYSIS**

Signalized Intersection  
2026

Average Vehicle Length (ft): 25

Cycles: 2

Intersection Cycle Length (sec): 130

Equation Used: storage length = 2 x (vehicles/hour)/(cycles/hour) x average vehicle length

Intersection	Approach	AM Peak (veh/hr)	Midday Peak	PM Peak (veh/hr)	Max vehs per 2 cycles	Max trucks per 2 cycles	Storage Length
Mockingbird Lane & Lincoln Dr	NB Left	6	0	8	1	0	25'
	SB Left	82	0	69	6	0	150'
	EB Left	246	0	271	20	0	500'
	WB Left	25	0	23	2	0	50'
Quail Run Rd & Lincoln Dr	EB Left	115	0	85	9	0	225'
	WB Left	6	0	5	1	0	25'
Scottsdale Rd & Lincoln Dr	NB Left	313	0	454	33	0	825'
	SB Left	56	0	67	5	0	125'
	EB Left	499	0	545	40	0	1000'
	NB Right	43	0	50	4	0	100'
	SB Right	651	0	539	48	0	1200'
	EB Right	508	0	460	37	0	925'

**Unsignalized Intersection  
2026**

Average Vehicle Length (ft): 25

Equation Used:  $\text{storage length} = 2 \times (\text{vehicles/hour}) / (30 \text{ cycles/hour}) \times \text{average vehicle length}$

Intersection	Approach	AM Peak (veh/hr)	Midday Peak	PM Peak (veh/hr)	Veh per 2 minutes	Trucks per 2 minutes	Storage Length
Smoke Tree Drwy A & Lincoln Dr	WB Left	21	0	21	1	0	25'
	EB Right	12	0	9	1	0	25'

Signalized Intersection  
2026

Average Vehicle Length (ft): 25

Cycles: 2

Intersection Cycle Length (sec): 130

Equation Used: storage length = 2 x (vehicles/hour)/(cycles/hour) x average vehicle length

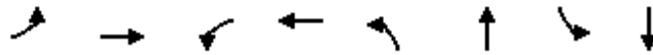
Intersection	Approach	AM Peak (veh/hr)	Midday Peak	PM Peak (veh/hr)	Max vehs per 2 cycles	Max trucks per 2 cycles	Storage Length
Mockingbird Lane & Lincoln Dr	NB Left	6	0	8	1	0	25'
	SB Left	82	0	68	6	0	150'
	EB Left	246	0	271	20	0	500'
	WB Left	25	0	23	2	0	50'
Quail Run Rd & Lincoln Dr	EB Left	115	0	85	9	0	225'
	WB Left	22	0	27	2	0	50'
Scottsdale Rd & Lincoln Dr	NB Left	313	0	454	33	0	825'
	SB Left	56	0	67	5	0	125'
	EB Left	499	0	546	40	0	1000'
	WB Left	41	0	62	5	0	125'
	SB Right	651	0	539	48	0	1200'
	EB Right	508	0	460	37	0	925'

Unsignalized Intersection  
2026

Average Vehicle Length (ft): 25

Equation Used: storage length = 2 x (vehicles/hour)/(30 cycles/hour) x average vehicle length

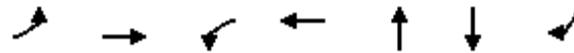
Intersection	Approach	AM Peak (veh/hr)	Midday Peak	PM Peak (veh/hr)	Veh per 2 minutes	Trucks per 2 minutes	Storage Length
Smoke Tree Drwy A & Lincoln Dr	EB Right	5	0	7	1	0	25'



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	273	1205	28	1139	7	65	91	397
v/c Ratio	0.69	0.47	0.14	0.62	0.11	0.22	0.32	0.84
Control Delay	25.8	11.3	40.7	44.0	46.5	32.9	40.6	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.3	40.7	44.0	46.5	32.9	40.6	50.4
Queue Length 50th (ft)	98	227	17	500	5	33	62	240
Queue Length 95th (ft)	211	359	m44	#625	19	69	98	325
Internal Link Dist (ft)		105		1255		475		337
Turn Bay Length (ft)	150		95		80		135	
Base Capacity (vph)	437	2538	203	1826	120	550	285	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.47	0.14	0.62	0.06	0.12	0.32	0.57

**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.



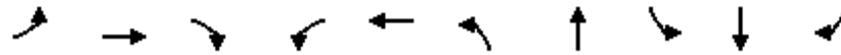
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	128	1238	7	1059	15	29	73
v/c Ratio	0.73	0.69	0.06	0.59	0.03	0.06	0.12
Control Delay	47.4	20.5	8.3	14.3	5.4	16.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	20.5	8.3	14.3	5.4	16.3	5.5
Queue Length 50th (ft)	60	295	2	270	0	8	0
Queue Length 95th (ft)	#168	511	m3	m287	9	25	25
Internal Link Dist (ft)		1255		269	287	291	
Turn Bay Length (ft)	25		25				300
Base Capacity (vph)	196	1986	135	1984	595	498	613
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	0.65	0.62	0.05	0.53	0.03	0.06	0.12

**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.

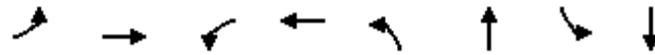


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	299	302	564	46	102	348	1662	62	2050	723
v/c Ratio	0.91	0.91	0.99	0.34	0.29	0.89	0.66	0.58	0.95	0.75
Control Delay	62.1	62.1	59.3	63.9	29.1	81.7	26.7	81.0	46.6	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	62.1	59.3	63.9	29.1	81.7	26.7	81.0	46.6	14.0
Queue Length 50th (ft)	228	231	406	37	18	151	392	51	600	148
Queue Length 95th (ft)	#405	#407	#488	79	48	#240	449	100	#716	319
Internal Link Dist (ft)		389			130		477		335	
Turn Bay Length (ft)	175			90		275		185		
Base Capacity (vph)	355	332	571	141	358	391	2518	120	2163	966
Starvation Cap Reductn	0	0	0	0	0	0	0	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	0.84	0.91	0.99	0.33	0.28	0.89	0.66	0.52	0.95	0.75

**Intersection Summary**

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

Total 2026 PM Mitigated  
1: Mockingbird Ln & Lincoln Drive



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	301	1104	26	1201	9	99	77	250
v/c Ratio	0.66	0.41	0.10	0.61	0.12	0.54	0.42	0.72
Control Delay	19.2	6.5	35.3	43.8	55.6	60.9	53.3	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	6.5	35.3	43.8	55.6	60.9	53.3	38.2
Queue Length 50th (ft)	80	153	16	544	7	73	57	102
Queue Length 95th (ft)	186	224	m36	633	25	128	100	189
Internal Link Dist (ft)		105		1255		475		337
Turn Bay Length (ft)	150		95		80		135	
Base Capacity (vph)	528	2671	271	1983	159	388	182	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.41	0.10	0.61	0.06	0.26	0.42	0.46

Intersection Summary

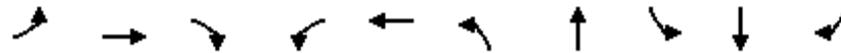
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	94	1094	6	1142	14	119
v/c Ratio	0.70	0.64	0.04	0.67	0.02	0.18
Control Delay	46.6	17.4	7.2	15.8	5.3	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	17.4	7.2	15.8	5.3	7.7
Queue Length 50th (ft)	41	240	2	332	0	9
Queue Length 95th (ft)	113	293	m3	m318	8	45
Internal Link Dist (ft)		1255		269	107	291
Turn Bay Length (ft)	25		25			
Base Capacity (vph)	160	2040	178	2036	621	661
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	0.59	0.54	0.03	0.56	0.02	0.18

**Intersection Summary**

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

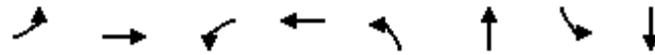


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	333	342	511	69	166	504	2046	74	1921	599
v/c Ratio	0.90	0.91	0.81	0.48	0.48	0.99	0.84	0.65	1.00	0.56
Control Delay	61.7	63.5	30.2	68.8	31.7	92.2	34.3	84.6	59.9	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	63.5	30.2	68.8	31.7	92.2	34.3	84.6	59.9	10.7
Queue Length 50th (ft)	268	281	327	57	32	~224	572	61	586	177
Queue Length 95th (ft)	#447	#462	#474	107	69	#358	645	#129	#709	271
Internal Link Dist (ft)		389			130		477		335	
Turn Bay Length (ft)	175			90		275		185		
Base Capacity (vph)	381	386	630	155	366	510	2443	123	1928	1089
Starvation Cap Reductn	0	0	0	0	0	0	0	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	0.87	0.89	0.81	0.45	0.45	0.99	0.84	0.60	1.00	0.55

**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.



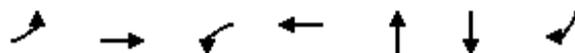
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	273	1206	28	1139	7	65	91	397
v/c Ratio	0.69	0.48	0.14	0.62	0.11	0.22	0.32	0.84
Control Delay	25.8	11.3	39.9	43.7	46.5	32.9	40.6	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	11.3	39.9	43.7	46.5	32.9	40.6	50.4
Queue Length 50th (ft)	98	227	17	494	5	33	62	240
Queue Length 95th (ft)	211	360	m44	#624	19	69	98	325
Internal Link Dist (ft)		105		1255		475		337
Turn Bay Length (ft)	150		95		80		135	
Base Capacity (vph)	437	2538	202	1826	120	550	285	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.48	0.14	0.62	0.06	0.12	0.32	0.57

**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.



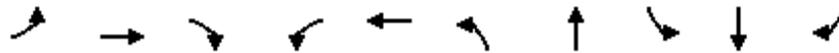
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	128	1238	24	1055	19	29	73
v/c Ratio	0.72	0.69	0.20	0.59	0.03	0.06	0.12
Control Delay	46.8	20.5	12.0	14.3	6.5	16.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.8	20.5	12.0	14.3	6.5	16.4	5.5
Queue Length 50th (ft)	60	296	9	257	0	8	0
Queue Length 95th (ft)	#167	511	m12	270	11	25	25
Internal Link Dist (ft)		1255		269	287	291	
Turn Bay Length (ft)	25		25				300
Base Capacity (vph)	197	1986	135	1984	593	496	613
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	0.65	0.62	0.18	0.53	0.03	0.06	0.12

**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.

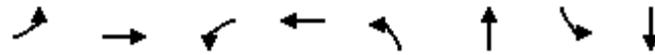


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	299	302	564	46	102	348	1662	62	2050	723
v/c Ratio	0.91	0.91	0.93	0.34	0.29	0.76	0.66	0.55	1.00	0.77
Control Delay	63.7	63.7	46.9	63.9	29.1	65.5	27.1	77.3	57.3	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	63.7	46.9	63.9	29.1	65.5	27.1	77.3	57.3	16.6
Queue Length 50th (ft)	208	210	406	37	18	146	392	51	~628	175
Queue Length 95th (ft)	#406	#409	#612	79	48	201	457	100	#753	358
Internal Link Dist (ft)		389			130		477		335	
Turn Bay Length (ft)	175			90		275		185		
Base Capacity (vph)	355	332	607	141	358	468	2502	133	2060	933
Starvation Cap Reductn	0	0	0	0	0	0	0	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	0.84	0.91	0.93	0.33	0.28	0.74	0.66	0.47	1.00	0.77

**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	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	301	1104	26	1201	9	99	76	250
v/c Ratio	0.66	0.41	0.10	0.61	0.12	0.54	0.42	0.72
Control Delay	19.2	6.5	34.2	42.9	55.6	60.9	53.1	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	6.5	34.2	42.9	55.6	60.9	53.1	38.2
Queue Length 50th (ft)	80	153	16	542	7	73	56	102
Queue Length 95th (ft)	186	224	m34	633	25	128	99	189
Internal Link Dist (ft)		105		1255		475		337
Turn Bay Length (ft)	150		95		80		135	
Base Capacity (vph)	528	2671	271	1983	159	388	182	539
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.41	0.10	0.61	0.06	0.26	0.42	0.46

**Intersection Summary**

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



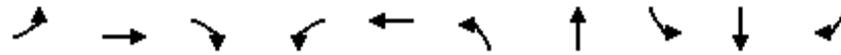
Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	94	1092	30	1137	20	119
v/c Ratio	0.71	0.65	0.21	0.68	0.03	0.18
Control Delay	48.5	17.5	11.7	16.1	6.6	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	17.5	11.7	16.1	6.6	7.9
Queue Length 50th (ft)	40	234	12	326	0	10
Queue Length 95th (ft)	#123	299	m19	m322	12	45
Internal Link Dist (ft)		1255		269	107	291
Turn Bay Length (ft)	25		25			
Base Capacity (vph)	156	1986	171	1982	616	667
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	0.60	0.55	0.18	0.57	0.03	0.18

**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	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	334	342	511	69	166	504	2046	74	1921	599
v/c Ratio	0.91	0.91	0.81	0.54	0.52	0.98	0.84	0.74	0.98	0.56
Control Delay	62.3	63.7	33.0	74.6	33.7	91.0	33.6	99.2	54.8	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.3	63.7	33.0	74.6	33.7	91.0	33.6	99.2	54.8	11.8
Queue Length 50th (ft)	275	283	346	57	33	~234	546	62	578	199
Queue Length 95th (ft)	#450	#464	#479	109	71	#346	616	#141	#696	295
Internal Link Dist (ft)		389			130		477		335	
Turn Bay Length (ft)	175			90		275		185		
Base Capacity (vph)	381	386	628	127	317	512	2438	104	1967	1081
Starvation Cap Reductn	0	0	0	0	0	0	0	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	0.88	0.89	0.81	0.54	0.52	0.98	0.84	0.71	0.98	0.55

**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.

## **APPENDIX L**

### **SIGHT DISTANCE ANALYSIS**

**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 1)**

**Sight Distance Analysis**

**Assumptions and/or Given**

<i>Elements of Design from AASHTO</i>	<i>6th Edition</i>	<i>AASHTO Ref</i>
Driver Eye Height		
Passenger Vehicle	3.50 ft	§3.2.6, p 3-14
Truck	7.60 ft	§3.2.6, p 3-14
Object Height		
Stopping Sight Distance	2.00 ft	§3.2.6, p 3-14
Passing Sight Distance	3.50 ft	§3.2.6, p 3-14
Vehicle Height	4.25 ft	§3.2.6, p 3-14
Driver Eye Location		
From Edge of Major Rd Traveled Way	14.50 ft	9.5.3, B1
Deceleration Rate (a)		
Passenger Vehicle	11.20 ft/sec <sup>2</sup>	§3.2.2, p 3-3
Truck	N/A ft	
Brake reaction time (t)	2.50 sec	§3.2.2, p 3-4

**Site Specific Data (Bike & turn lanes are outside traveled way and are not considered)**

Major Street Design Speed (V <sub>major</sub> )	40 MPH	
Grades - Approaching Minor Street from: (— = approaching downhill)		
Left (G <sub>L</sub> )	%	
Right (G <sub>R</sub> )	%	
Approach Grade Adjustment Factor	Left 1.0	Tbl 9-4, p 9-35
	Right 1.0	
Major Road Through Lanes on Each Approach	(Use 1 for RI/RO/[LI] only)	
Median Width (in "Lane Equivalents")	(Use 0 for RI/RO/[LI] only)	
Minor Road Approach Upgrade, if >3%	%	
Minor Road Access (check restricted)		
	LI	LO/Th RO

**Stopping Sight Distance = Brake Reaction Distance + Braking Distance**

Neglecting Effect of Grade  $d = 1.47Vt + 1.075 \frac{V^2}{a}$  Eq 3-2, p 3-4

Calculated d= 300.6 ft  
Design d= 305 ft

With Effect of Grade

$d = 1.47Vt + \frac{V^2}{30((\frac{a}{32.2}) \pm G)}$  Eq 3-3, p 3-5

Calculated d= 300.3 ft - left  
305 ft - right  
Design d= 300.3 ft - left  
305 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. §3.2.2, p 3-6



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 1)**

**Sight Distance Analysis**

**Intersection Sight Distances**

**Case B—Intersections with Stop Control on the Minor Road**

*AASHTO Ref*  
§9.5.3, p 9-36

Case B1—Left Turn from the Minor Road

§9.5.3, p 9-36

Design Vehicle	Time Gap (t <sub>g</sub> )	
Passenger Car	7.5 sec	Tbl 9-5, p 9-37
Single-Unit Tuck	9.5 sec	Tbl 9-5, p 9-37
Combination Truck	11.5 sec	Tbl 9-5, p 9-37

Time gap adjustments

Add'l lanes to cross (1 <sup>st</sup> is assumed)		
Passenger Car	0.5 sec	See Notes
Trucks	0.7 sec	below
Minor Approach Upgrade (Per each 1%>3%)	0.2 sec	Tbl 9-5, p 9-37

Site data

Major Road Lanes on Left Approach	0.0	§9.5.3, p 9-37
Minor Road Approach Upgrade, if >3%	0 %	§9.5.3, p 9-37

Time Gap based on site data

*Design Vehicle Gap+Adj for Approach Grade>3%+Adjs for Add'l Lanes & Median*

Passenger Car	7.0 sec
Single-Unit Tuck	8.8 sec
Combination Truck	10.8 sec

ISD to left & right along Major Road ISD=1.47V<sub>major</sub>t<sub>g</sub> (ft) Eq 9-1, p 9-37

		ISD to Left and Right
Passenger Car	calculated ISD=	411.6 ft
	design ISD=	415 ft
Single-Unit Tuck	calculated ISD=	517.4 ft
	design ISD=	520 ft
Combination Truck	calculated ISD=	635.0 ft
	design ISD=	635 ft



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 1)**

**Sight Distance Analysis**

**Intersection Sight Distances (cont'd)**

		<i>AASHTO Ref</i>	
<u>Case B2—Right Turn from the Minor Road &amp;</u>		§9.5.3, p 9-40	
<u>Case B3—Crossing Maneuver from the Minor Road</u>		§9.5.3, p 9-43	
Design Vehicle	Time Gap (t <sub>g</sub> )		
Passenger Car	6.5 sec	Tbl 9-7, p 9-40	
Single-Unit Tuck	8.5 sec	Tbl 9-7, p 9-40	
Combination Truck	10.5 sec	Tbl 9-7, p 9-40	
Time gap adjustments - Case B-3 Only*			
Add'l lanes to cross (1 <sup>st</sup> is assumed)			
Passenger Car	0.5 sec	See Notes	
Trucks	0.7 sec	below	
Minor Approach Upgrade (Per each 1%>3%)	0.1 sec	Tbl 9-7, p 9-40	
Site data			
Major Road Lanes on Left Approach	0.0	§9.5.3, p 9-40	
Minor Road Approach Upgrade, if >3%	0 %	§9.5.3, p 9-40	

Time Gap based on site data (sec)	<u>B2 &amp; B3</u>	<u>B3 Only</u>	
<i>Design Vehicle Gap+Adj for Approach Grade&gt;3%(+Adjs for Add'l Lanes &amp; Median for B3)</i>			
Passenger Car	6.0	5.5	
Single-Unit Tuck	7.8	7.1	
Combination Truck	9.8	9.1	

ISD to left (B2/B3) & right (B3) along Major RdSD=1.47V<sub>major</sub>t<sub>g</sub> (ft) Eq 9-1, p 9-37

			<u>ISD to Left</u>	<u>ISD to right</u>
			<u>(B2 &amp; B3)</u>	<u>(B3 Only)</u>
Passenger Car	calculated ISD=	352.8	323.4	
	design ISD=	355	325	
Single-Unit Tuck	calculated ISD=	458.6	417.5	
	design ISD=	460	420	
Combination Truck	calculated ISD=	576.2	535.1	
	design ISD=	580	540	

\*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. §9.5.3, p 9-43



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 1)**

**Sight Distance Analysis**

**Intersection Sight Distances (cont'd)**

		<i>AASHTO Ref</i>	
<u>Case F—Left Turns from the Major Road</u>		§9.5.3, p 9-51	
Design Vehicle	Time Gap (t <sub>g</sub> )		
Passenger Car	5.5 sec	bl 9-13, p 9-51	
Single-Unit Tuck	6.5 sec	bl 9-13, p 9-51	
Combination Truck	7.5 sec	bl 9-13, p 9-51	
Time gap adjustments			
Add'l lanes to cross (1 assumed)			
Passenger Car	0.5 sec	See Notes to	
Trucks	0.7 sec	bl 9-13, p 9-51	
Site data			
Opposing Lanes (adj'd for x-wide median)	-1.0		
Time Gap based on site data			
<i>Design Vehicle Gap+Adj for Add'l Opposing Lanes</i>			
Passenger Car	5.0 sec		
Single-Unit Tuck	5.8 sec		
Combination Truck	6.8 sec		
ISD to front along Major Road	ISD=1.47V <sub>major</sub> t <sub>g</sub> (ft)	Eq 9-1, p 9-37	
Passenger Car	calculated ISD= 294.0 ft		
	design ISD= 295 ft		
Single-Unit Tuck	calculated ISD= 341.0 ft		
	design ISD= 345 ft		
Combination Truck	calculated ISD= 399.8 ft		
	design ISD= 400 ft		

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. §9.5.3, p 9-43

**SIGHT DISTANCE SUMMARY**

Sight Distance Type	Governing		SU Truck	Combo Truck
	Case	Car		
Stopping				
Without effect of grade		305	N/A	N/A
With effect of grade on left		305	N/A	N/A
With effect of grade on right		305	N/A	N/A
Intersection				
To Right	B1	415	520	635
To Left	B2/B3	355	460	580
On Major Road	F	295	345	400



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 2)**

**Sight Distance Analysis**

**Assumptions and/or Givens**

<i>Elements of Design from AASHTO</i>	<i>6th Edition</i>	<i>AASHTO Ref</i>
Driver Eye Height		
Passenger Vehicle	3.50 ft	§3.2.6, p 3-14
Truck	7.60 ft	§3.2.6, p 3-14
Object Height		
Stopping Sight Distance	2.00 ft	§3.2.6, p 3-14
Passing Sight Distance	3.50 ft	§3.2.6, p 3-14
Vehicle Height	4.25 ft	§3.2.6, p 3-14
Driver Eye Location		
From Edge of Major Rd Traveled Way	14.50 ft	9.5.3, B1
Deceleration Rate (a)		
Passenger Vehicle	11.20 ft/sec <sup>2</sup>	§3.2.2, p 3-3
Truck	N/A ft	
Brake reaction time (t)	2.50 sec	§3.2.2, p 3-4

**Site Specific Data (Bike & turn lanes are outside traveled way and are not considered)**

Major Street Design Speed (V <sub>major</sub> )	35 MPH							
Grades - Approaching Minor Street from: (— = approaching downhill)								
Left (G <sub>L</sub> )	%							
Right (G <sub>R</sub> )	%							
Approach Grade Adjustment Factor	Left 1.0	Tbl 9-4, p 9-35						
	Right 1.0							
Major Road Through Lanes on Each Approach	(Use 1 for RI/RO/[LI] only)							
Median Width (in "Lane Equivalents")	(Use 0 for RI/RO/[LI] only)							
Minor Road Approach Upgrade, if >3%	%							
Minor Road Access (check restricted)	<table border="1"> <tr> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td>LI</td> <td>LO/Th</td> <td>RO</td> </tr> </table>		X	X		LI	LO/Th	RO
X	X							
LI	LO/Th	RO						

**Stopping Sight Distance = Brake Reaction Distance + Braking Distance**

<u>Neglecting Effect of Grade</u>	$d = 1.47Vt + 1.075 \frac{V^2}{a}$	Eq 3-2, p 3-4
Calculated d=	246.2 ft	
Design d=	250 ft	

<u>With Effect of Grade</u>	$d = 1.47Vt + \frac{V^2}{30((\frac{a}{32.2}) \pm G)}$	Eq 3-3, p 3-5
Calculated d=	246.4 ft - left 250 ft - right	
Design d=	246.4 ft - left 250 ft - right	

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. §3.2.2, p 3-6



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 2)**

**Sight Distance Analysis**

**Intersection Sight Distances**

**Case B—Intersections with Stop Control on the Minor Road** §9.5.3, p 9-36

**Case B1—Left Turn from the Minor Road** §9.5.3, p 9-36

Design Vehicle	Time Gap (t <sub>g</sub> )	AASHTO Ref
Passenger Car	7.5 sec	Tbl 9-5, p 9-37
Single-Unit Tuck	9.5 sec	Tbl 9-5, p 9-37
Combination Truck	11.5 sec	Tbl 9-5, p 9-37
Time gap adjustments		
Add'l lanes to cross (1 <sup>st</sup> is assumed)		
Passenger Car	0.5 sec	See Notes
Trucks	0.7 sec	below
Minor Approach Upgrade (Per each 1%>3%)	0.2 sec	Tbl 9-5, p 9-37

Site data		
Major Road Lanes on Left Approach	0.0	§9.5.3, p 9-37
Minor Road Approach Upgrade, if >3%	0 %	§9.5.3, p 9-37

Time Gap based on site data		
<i>Design Vehicle Gap+Adj for Approach Grade&gt;3%+Adjs for Add'l Lanes &amp; Median</i>		
Passenger Car	7.0 sec	
Single-Unit Tuck	8.8 sec	
Combination Truck	10.8 sec	

ISD to left & right along Major Road ISD=1.47V<sub>major</sub>t<sub>g</sub> (ft) Eq 9-1, p 9-37

		ISD to Left and Right
Passenger Car	calculated ISD=	360.2 ft
	design ISD=	365 ft
Single-Unit Tuck	calculated ISD=	452.8 ft
	design ISD=	455 ft
Combination Truck	calculated ISD=	555.7 ft
	design ISD=	560 ft



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 2)**

**Sight Distance Analysis**

**Intersection Sight Distances (cont'd)**

		<i>AASHTO Ref</i>	
<u>Case B2—Right Turn from the Minor Road &amp;</u>		§9.5.3, p 9-40	
<u>Case B3—Crossing Maneuver from the Minor Road</u>		§9.5.3, p 9-43	
Design Vehicle	Time Gap (t <sub>g</sub> )		
Passenger Car	6.5 sec	Tbl 9-7, p 9-40	
Single-Unit Tuck	8.5 sec	Tbl 9-7, p 9-40	
Combination Truck	10.5 sec	Tbl 9-7, p 9-40	
Time gap adjustments - Case B-3 Only*			
Add'l lanes to cross (1 <sup>st</sup> is assumed)			
Passenger Car	0.5 sec	See Notes	
Trucks	0.7 sec	below	
Minor Approach Upgrade (Per each 1%>3%)	0.1 sec	Tbl 9-7, p 9-40	
Site data			
Major Road Lanes on Left Approach	0.0	§9.5.3, p 9-40	
Minor Road Approach Upgrade, if >3%	0 %	§9.5.3, p 9-40	

Time Gap based on site data (sec)	<u>B2 &amp; B3</u>	<u>B3 Only</u>	
<i>Design Vehicle Gap+Adj for Approach Grade&gt;3%(+Adjs for Add'l Lanes &amp; Median for B3)</i>			
Passenger Car	6.0	5.5	
Single-Unit Tuck	7.8	7.1	
Combination Truck	9.8	9.1	

ISD to left (B2/B3) & right (B3) along Major RdSD=1.47V<sub>major</sub>t<sub>g</sub> (ft) Eq 9-1, p 9-37

			ISD to Left	ISD to right
			<u>(B2 &amp; B3)</u>	<u>(B3 Only)</u>
Passenger Car	calculated ISD=	308.7	283.0	
	design ISD=	310	285	
Single-Unit Tuck	calculated ISD=	401.3	365.3	
	design ISD=	405	370	
Combination Truck	calculated ISD=	504.2	468.2	
	design ISD=	505	470	

\*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. §9.5.3, p 9-43



**Smoke Tree TIA**

**Location: Access A & Lincoln Dr (Scenario 2)**

**Sight Distance Analysis**

**Intersection Sight Distances (cont'd)**

		<i>AASHTO Ref</i>	
<u>Case F—Left Turns from the Major Road</u>		§9.5.3, p 9-51	
Design Vehicle	Time Gap (t <sub>g</sub> )		
Passenger Car	5.5 sec	bl 9-13, p 9-51	
Single-Unit Tuck	6.5 sec	bl 9-13, p 9-51	
Combination Truck	7.5 sec	bl 9-13, p 9-51	
Time gap adjustments			
Add'l lanes to cross (1 assumed)			
Passenger Car	0.5 sec	See Notes to	
Trucks	0.7 sec	bl 9-13, p 9-51	
Site data			
Opposing Lanes (adj'd for x-wide median)	-1.0		
Time Gap based on site data			
<i>Design Vehicle Gap+Adj for Add'l Opposing Lanes</i>			
Passenger Car	5.0 sec		
Single-Unit Tuck	5.8 sec		
Combination Truck	6.8 sec		
ISD to front along Major Road	ISD=1.47V <sub>major</sub> t <sub>g</sub> (ft)	Eq 9-1, p 9-37	
Passenger Car	calculated ISD= 257.3 ft		
	design ISD= 260 ft		
Single-Unit Tuck	calculated ISD= 298.4 ft		
	design ISD= 300 ft		
Combination Truck	calculated ISD= 349.9 ft		
	design ISD= 350 ft		

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. §9.5.3, p 9-43

**SIGHT DISTANCE SUMMARY**

Sight Distance Type	Governing		SU Truck	Combo Truck
	Case	Car		
Stopping				
Without effect of grade		250	N/A	N/A
With effect of grade on left		250	N/A	N/A
With effect of grade on right		250	N/A	N/A
Intersection				
To Right	B3	Restricted	Restricted	Restricted
To Left	B2/B3	310	405	505
On Major Road	F	Restricted	Restricted	Restricted



**Smoke Tree TIA**

**Location: Quail Run Rd & Access B**

**Sight Distance Analysis**

**Assumptions and/or Given**

<i>Elements of Design from AASHTO</i>	<i>6th Edition</i>	<i>AASHTO Ref</i>
Driver Eye Height		
Passenger Vehicle	3.50 ft	§3.2.6, p 3-14
Truck	7.60 ft	§3.2.6, p 3-14
Object Height		
Stopping Sight Distance	2.00 ft	§3.2.6, p 3-14
Passing Sight Distance	3.50 ft	§3.2.6, p 3-14
Vehicle Height	4.25 ft	§3.2.6, p 3-14
Driver Eye Location		
From Edge of Major Rd Traveled Way	14.50 ft	9.5.3, B1
Deceleration Rate (a)		
Passenger Vehicle	11.20 ft/sec <sup>2</sup>	§3.2.2, p 3-3
Truck	N/A ft	
Brake reaction time (t)	2.50 sec	§3.2.2, p 3-4

**Site Specific Data (Bike & turn lanes are outside traveled way and are not considered)**

Major Street Design Speed (V <sub>major</sub> )	30]MPH	
Grades - Approaching Minor Street from: (— = approaching downhill)		
Left (G <sub>L</sub> )	%	
Right (G <sub>R</sub> )	%	
Approach Grade Adjustment Factor	Left 1.0	Tbl 9-4, p 9-35
	Right 1.0	
Major Road Through Lanes on Each Approach	(Use 1 for RI/RO/[LI] only)	
Median Width (in "Lane Equivalents")	(Use 0 for RI/RO/[LI] only)	
Minor Road Approach Upgrade, if >3%	%	
Minor Road Access (check restricted)		
	LI	LO/Th RO

**Stopping Sight Distance = Brake Reaction Distance + Braking Distance**

Neglecting Effect of Grade  $d=1.47Vt+1.075 \frac{V^2}{a}$  Eq 3-2, p 3-4

Calculated d= 196.7 ft  
Design d= 200 ft

With Effect of Grade  $d=1.47Vt+ \frac{V^2}{30((\frac{a}{32.2}) \pm G)}$  Eq 3-3, p 3-5

Calculated d= 196.3 ft - left  
200 ft - right  
Design d= 196.3 ft - left  
200 ft - right

SSD's do not consider design for truck operations, since better visibility is considered to offset longer braking distance. §3.2.2, p 3-6



**Smoke Tree TIA**

**Location: Quail Run Rd & Access B**

**Sight Distance Analysis**

**Intersection Sight Distances**

**Case B—Intersections with Stop Control on the Minor Road** §9.5.3, p 9-36

**Case B1—Left Turn from the Minor Road** §9.5.3, p 9-36

Design Vehicle	Time Gap (t <sub>g</sub> )	
Passenger Car	7.5 sec	Tbl 9-5, p 9-37
Single-Unit Tuck	9.5 sec	Tbl 9-5, p 9-37
Combination Truck	11.5 sec	Tbl 9-5, p 9-37

Time gap adjustments		
Add'l lanes to cross (1 <sup>st</sup> is assumed)		
Passenger Car	0.5 sec	See Notes
Trucks	0.7 sec	below
Minor Approach Upgrade (Per each 1%>3%)	0.2 sec	Tbl 9-5, p 9-37

Site data		
Major Road Lanes on Left Approach	0.0	§9.5.3, p 9-37
Minor Road Approach Upgrade, if >3%	0 %	§9.5.3, p 9-37

Time Gap based on site data		
<i>Design Vehicle Gap+Adj for Approach Grade&gt;3%+Adjs for Add'l Lanes &amp; Median</i>		
Passenger Car	7.0 sec	
Single-Unit Tuck	8.8 sec	
Combination Truck	10.8 sec	

ISD to left & right along Major Road ISD=1.47V<sub>major</sub>t<sub>g</sub> (ft) Eq 9-1, p 9-37

		ISD to Left and Right
Passenger Car	calculated ISD= 308.7 ft	
	design ISD= 310 ft	
Single-Unit Tuck	calculated ISD= 388.1 ft	
	design ISD= 390 ft	
Combination Truck	calculated ISD= 476.3 ft	
	design ISD= 480 ft	



**Smoke Tree TIA**  
**Location: Quail Run Rd & Access B**

**Sight Distance Analysis**

**Intersection Sight Distances (cont'd)**

<u>Case B2—Right Turn from the Minor Road &amp;</u>		<b>AASHTO Ref</b>	
		§9.5.3, p 9-40	
<u>Case B3—Crossing Maneuver from the Minor Road</u>		§9.5.3, p 9-43	
Design Vehicle	Time Gap (t <sub>g</sub> )		
Passenger Car	6.5 sec	Tbl 9-7, p 9-40	
Single-Unit Tuck	8.5 sec	Tbl 9-7, p 9-40	
Combination Truck	10.5 sec	Tbl 9-7, p 9-40	
Time gap adjustments - Case B-3 Only*			
Add'l lanes to cross (1 <sup>st</sup> is assumed)			
Passenger Car	0.5 sec	See Notes	
Trucks	0.7 sec	below	
Minor Approach Upgrade (Per each 1%>3%)	0.1 sec	Tbl 9-7, p 9-40	
Site data			
Major Road Lanes on Left Approach	0.0	§9.5.3, p 9-40	
Minor Road Approach Upgrade, if >3%	0 %	§9.5.3, p 9-40	

Time Gap based on site data (sec)	<u>B2 &amp; B3</u>	<u>B3 Only</u>	
<i>Design Vehicle Gap+Adj for Approach Grade&gt;3%(+Adjs for Add'l Lanes &amp; Median for B3)</i>			
Passenger Car	6.0	5.5	
Single-Unit Tuck	7.8	7.1	
Combination Truck	9.8	9.1	

ISD to left (B2/B3) & right (B3) along Major RdSD=1.47V<sub>major</sub>t<sub>g</sub> (ft) Eq 9-1, p 9-37

			<u>ISD to Left</u>	<u>ISD to right</u>
			<u>(B2 &amp; B3)</u>	<u>(B3 Only)</u>
Passenger Car	calculated	ISD=	264.6	242.6
	design	ISD=	265	245
Single-Unit Tuck	calculated	ISD=	344.0	313.1
	design	ISD=	345	315
Combination Truck	calculated	ISD=	432.2	401.3
	design	ISD=	435	405

\*Number of major road lanes is irrelevant in Case B2.

The differences between Case B1 and Cases B2 & B3 are reduced time gaps and time gap adjustment for the minor approach upgrade. §9.5.3, p 9-43

**Smoke Tree TIA**  
**Location: Quail Run Rd & Access B**

**Sight Distance Analysis**

**Intersection Sight Distances (cont'd)**

<u>Case F—Left Turns from the Major Road</u>		<b>AASHTO Ref</b>	
		§9.5.3, p 9-51	
Design Vehicle	Time Gap (t <sub>g</sub> )		
Passenger Car	5.5 sec	bl 9-13, p 9-51	
Single-Unit Tuck	6.5 sec	bl 9-13, p 9-51	
Combination Truck	7.5 sec	bl 9-13, p 9-51	
Time gap adjustments			
Add'l lanes to cross (1 assumed)			
Passenger Car	0.5 sec	See Notes to	
Trucks	0.7 sec	bl 9-13, p 9-51	
Site data			
Opposing Lanes (adj'd for x-wide median)	-1.0		
Time Gap based on site data			
<i>Design Vehicle Gap+Adj for Add'l Opposing Lanes</i>			
Passenger Car	5.0 sec		
Single-Unit Tuck	5.8 sec		
Combination Truck	6.8 sec		
ISD to front along Major Road	ISD=1.47V <sub>major</sub> t <sub>g</sub> (ft)	Eq 9-1, p 9-37	
Passenger Car	calculated ISD=	220.5 ft	
	design ISD=	225 ft	
Single-Unit Tuck	calculated ISD=	255.8 ft	
	design ISD=	260 ft	
Combination Truck	calculated ISD=	299.9 ft	
	design ISD=	300 ft	

The differences between Case F and Cases B1, B2 & B3 are reduced time gaps and no time gap adjustment for any minor approach upgrade. §9.5.3, p 9-43

**SIGHT DISTANCE SUMMARY**

Sight Distance Type	Governing		SU Truck	Combo Truck
	Case	Car		
Stopping				
Without effect of grade		200	N/A	N/A
With effect of grade on left		200	N/A	N/A
With effect of grade on right		200	N/A	N/A
Intersection				
To Right	B1	310	390	480
To Left	B2/B3	265	345	435
On Major Road	F	225	260	300