Indian Meadows, Lot 1

Independent Hotel & Holiday Inn Express

Traffic Impact Analysis

Previous Date: June 8, 2022

Updated Date: February 24, 2023

Submitted To:
Four Points Surveying and Engineering
P.O. Box 775966
Steamboat Springs, CO 80477

Submitted By:
Fox Tuttle Transportation Group, LLC
1624 Market Street, Suite 202
Denver, CO 80202

FOX TUTTLE

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDIX

Traffic Impact Study - Scope Approval Form

Level of Service Definitions

Existing Traffic Data

Historic Correspondence regarding Stone Lane Realignment

Workforce Housing Trip Rates

Intersection Capacity Worksheets

Signal Warrant Worksheet

INDIAN MEADOWS LOT 1
INDEPENDENT HOTEL & HOLIDAY INN EXPRESS
TRAFFIC IMPACT STUDY

1.0 INTRODUCTION

The Fox Tuttle Transportation Group prepared this traffic impact study for the proposed development of two hotels within Lot 1 of the Indian Meadows area in Steamboat Springs, CO. The vacant property is located east of US Highway 40 and north of Stone Lane; between the existing Homewood Suites Hotel and the old Fairfield Inn, now named Storm Peak Apartments[1]. The project proposes to construct two new hotel buildings. The existing access roadway that leads to the Storm Peak Apartments will remain and the hotels will include a new north-south access road that will be constructed along the east edge of the subject property. **Figure 1** includes a vicinity map for the proposed Independent Hotel and Holiday Inn Express development.

The purpose of this study is to assist in identifying potential traffic impacts within the study area as a result of this project. The traffic study addresses existing, short-term (Year 2026), and long-term (Year 2042) peak hour intersection conditions in the study area with and without the project generated traffic. The information contained in this study is anticipated to be used by the City of Steamboat Springs staff in identifying any intersection or roadway deficiencies and potential improvements for the future conditions. This study focused on the weekday AM and PM peak hours which are typically the highest traffic volumes for the proposed type of land use. The study includes an assessment of queue lengths and auxiliary lane needs.

The traffic impact study is consistent with the requirements of the City of Steamboat Springs' *Engineering Standards* (2015). This study has also been completed to satisfy the Colorado Department of Transportation (CDOT) Level Two Traffic Assessment requirements for Region 3 Access Permits. Copies of

[1] Fairfield Inn has recently been converted from a hotel to workforce housing, newly named Storm Peak Apartments.

the approved Traffic Impact Study Scope Approval Form, both for the City and CDOT, are attached in the **Appendix** for reference.

2.0 PROJECT DESCRIPTION

The project proposes to construct two hotels with a total of 163 guest rooms: 90 rooms in the Holiday Inn Express and 73 rooms in the Independent Hotel. In addition, the Holiday Inn will include nine (9) dormitory rooms for staff. The hotels will be located in the northeast corner of US Highway 40 and Stone Lane. Currently, there is an access road that leads from Stone Lane to Storm Peaks Apartments that will remain. This hotel project will include a new access road on the east end of the proposed development property which will be the north leg of the existing intersection on Stone Lane at the east access into the Homewood Suites. This will become the primary access for the proposed new hotels and include one lane per direction and provide full-movement, side-street stop-control at the intersection with Stone Lane. **Figure 2** includes a conceptual site plan and access for the project.

The subject property was originally studied within the *Steamboat Hotels Traffic Impact* Study (Fox Tuttle Hernandez Transportation Group, May 2016) which included the existing Homewood Suites and assumed a long-term hotel with 140-rooms and a quality restaurant. The current proposal includes two (2) hotel buildings with 163 rooms, nine (9) staff rooms, and no restaurant.

3.0 STUDY CONSIDERATIONS

3.1 Data Collection

Intersection turning movement volumes were collected in May 2021 and February 2022 and compared to historic counts from the traffic studies for the previous hotel study and Casey's Pond Multi-Family Development. This study area is located within the "summer zone"; therefore, the intersection volumes were seasonally factored. The City's monthly conversion data indicated that July volumes are a factor of 1.66 higher when compared to February volumes and July volumes are a factor of 1.53 higher when compared to May. Since counts were gathered in separate months, the volumes were balanced between the intersections along US Highway 40. This methodology provided a conservative approach to estimating the existing traffic conditions within the study area.

Daily volumes were collected on Stone Lane in February 2022 and volumes along US 40 were gathered from CDOT's Transportation Data Management System (TDMS). The adjusted existing traffic volumes are

illustrated on **Figure 3**. The existing intersection geometry and traffic control are also shown on this figure. Count data sheets are provided in the **Appendix**.

3.2 Relevant Studies

Other studies reviewed for this analysis included the following:

- *Cost Contribution Estimate for Area Roadway Improvements Memorandum*. Fox Tuttle Hernandez Transportation Group. October 2015.
- *Steamboat Hotel Traffic Impact Study*. Fox Tuttle Hernandez Transportation Group. May 2016.
- *East Steamboat Springs US Highway 40 Access Study*. City of Steamboat Springs, Routt County, Colorado Department of Transportation, Stolfus & Associates. Juen 2016.

3.3 Evaluation Methodology

The traffic operations analysis addressed the unsignalized and signalized intersection operations using the procedures and methodologies set forth by the *Highway Capacity Manual (HCM)*[2]. Existing Peak Hour Factor (PHF) were applied to the intersections for the existing and short-term scenarios. For the long-term scenario, the PHFs were set to 0.92 on US 40 or 0.88 on Stone Lane (unless the existing PHF was greater than these values) since it is assumed that the peak periods will become longer, and traffic will spread more evenly over the hour as traffic increases. Study intersections were evaluated using Synchro (v10) software.

3.4 Level of Service Definitions

A level of service analysis was conducted to determine the existing and future performance of the study intersections and to determine the most appropriate traffic control device and need for auxiliary lanes.

To measure and describe the operational status of the study intersections, transportation engineers and planners commonly use a grading system referred to as "Level of Service" (LOS) that is defined by the HCM. LOS characterizes the operational conditions of an intersections traffic flow, ranging from LOS A (indicating very good, free flow operations) and LOS F (indicating congested and sometimes oversaturated conditions). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with traveling through the intersections. The intersection LOS is represented as a

[2] Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 6th Edition (2016).

delay in seconds per vehicle for the intersection as a whole and for each turning movement. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

The City of Steamboat Springs consider LOS A through C to be good for the overall intersection operations with LOS D as acceptable in peak hours. For individual movements, LOS E and F may be acceptable for left-turns or minor streets where queuing or safety are not an issue.

4.0 EXISTING CONDITIONS

4.1 Roadways

The study area boundaries are based on the amount of traffic to be generated by the project and potential impact to the existing roadway network. The primary public roadways that serve the project site are discussed in the following text and illustrated on **Figure 1**.

US Highway 40 (Lincoln Avenue) is an east-west, principal arterial (CDOT Classification of NR-B: Non-Rural Arterial Highway) that provides the main access into Steamboat Springs, stretching across the entire community. Adjacent to the project site and north of the intersection with Dougherty Road/Stone Lane the highway has a 69-foot-wide paved section that includes 12-foot through lanes, one lane per direction; 13-foot center left-turn lane; 10-foot shoulder on the west side; 12-foot southbound deceleration lane; 12-foot northbound acceleration lane; and 4-foot shoulders.

At Walton Creek Road the roadway widens to 82 feet to accommodate a second southbound through lane (12 feet) which ends at Weiss Drive/Ingles Lane and wider shoulders (10 feet). The highway is straight and flat in the study area with excellent sight distance in both directions at both study intersections.

US Highway 40 currently services approximately 13,700 vehicles per day (vpd) just south of Walton Creek Road (Year 2022), 10,100 vpd south of Dougherty Road/Stone Lane, and 24,400 vpd north of Walton Cree Road (CDOT, Year 2021). The posted speed limit on the highway is 45 miles per hour (mph) within the study area. The highway is the western boundary of the project site.

Walton Creek Road is an east-west, two-lane collector that is the main access to many residential neighborhoods and several resorts within the Mountain area of Steamboat Springs. It also is utilized as a secondary route into the base of the ski area. Walton Creek Road services approximately 10,500 vehicles per weekday just east of US Highway 40 (Year 2022). The roadway has a posted speed limit of 30 mph and is approximately 40 feet in width.

Dougherty Road is a private east-west, two-lane roadway that provides access to the Steamboat Christian Center, a landscape/wholesale nursery facility, a small commercial business, and a small residential neighborhood. Dougherty Road is approximately 26 feet wide and extends west of US Highway 40.

Stone Lane is an east-west, two-lane roadway with the pavement width approximately 48 feet and extends east of US Highway 40. It currently serves as the access to the Storm Peaks Apartments and Homewood Suites. This roadway is also used by one of the Steamboat Springs Transit (SST) bus routes (Orange) as the southern terminus and turnaround location. The City plans to connect Stone Lane across Walton Creek with roadway and bridge construction completed in the next five years. With the new bridge, Stone Lane will provide direct access to US Highway 40 for the existing neighborhood to the east of Walton Creek.

4.2 Intersections

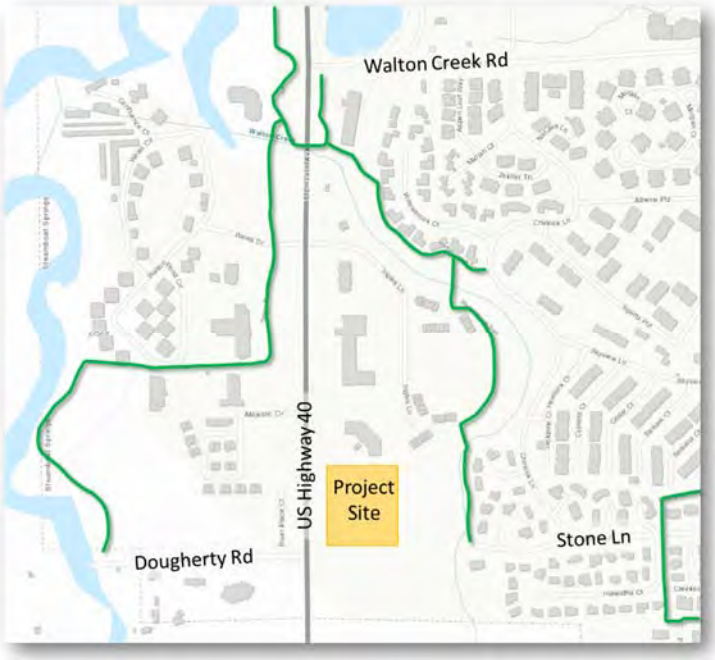
The study area includes four (4) intersections that are listed below with the current traffic control and were analyzed for existing and future background year traffic operations:

1. US Highway 40 at Walton Creek Road (signalized)
2. US Highway 40 at Dougherty Road/Stone Lane (side-street stop-controlled)
3. Stone Lane at Homestead Suites West Access/Access Road (side-street stop-controlled)
4. Stone Lane at Homestead Suites East Access (side-street stop-controlled)

The existing lane configuration at each of the study locations is illustrated on **Figure 3**.

4.3 Pedestrian and Bicycle Facilities

There is a multi-use path parallel to US Highway 40: the Yampa River Core Trail. It extends seven (7) miles between Dougherty Road and Lagoon Court (west end of town). This highly utilized trail provides access to downtown, various parks, and connects to many other trails. South of Walton Creek Road, the Yampa River Core Trail splits into two with one trail continuing on the west side of the highway to Dougherty Road and the other trail following Walton Creek to Stone Lane.



The map to the right illustrates the nearby trail system that visitors and employees of the proposed Independent Hotel and Holiday Inn Express can take advantage of.

In addition to the trail system, there are sidewalks on both sides of Stone Lane just west of US Highway 40 and a multi-use trail on the north side of Walton Creek Road.

Directional on-street bike lanes are located on Walton Creek Road which lead to the Yampa River Core Trail and to Village Drive. People that walk or bike typically utilize the trail system in this area to get to their destination. Bicyclists are permitted to ride with traffic on the collector and local streets.

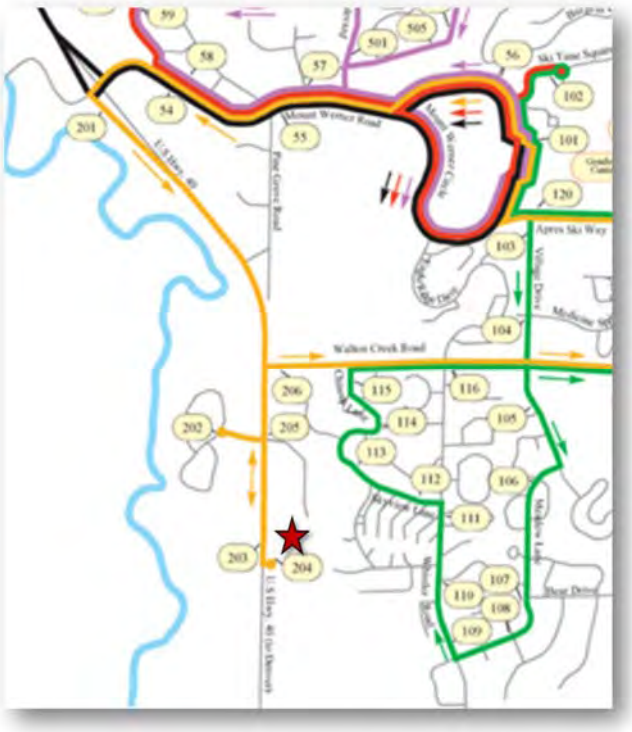
4.4 Transit

The Steamboat Springs Transit (SST) provides a free transit service throughout the City of Steamboat Springs that links downtown and the ski town area. Transit services link the residential areas to the ski resort, commercial centers, hospital, recreational areas, schools, and business offices.

The proposed Independent Hotel and Holiday Inn Express visitors and employees can take advantage of the transit service with the nearby bus stop on Stone Lane. This bus stop is served by the Orange and Main Line Condo Lines as shown to the right. The Orange Line circulate the Mountain and ski area, linking to several other bus routes via the Gondola Transit Center. The Main Line Condos circulates the multi-family area, south of the ski area, similar to the Green Line and connects to south US Highway 40 bus stops.

There is the Regional Line that connects Steamboat Springs to nearby cities of Hayden, Milner, and Craig. Patrons can transfer to this bus route at the Gondola Transit Center.

The map to the right illustrates the nearby transit system that will benefit residents of the proposed project.



4.5 Existing Intersection Capacity Analysis

The existing volumes, lane configuration, and traffic control are illustrated on **Figure 3**. The results of the LOS calculations for the study intersections are summarized in **Table 1**. The 95th percentile queues are summarized on **Table 2**. The intersection level of service worksheets and queue reports are attached in the **Appendix**. The study intersections are shown to be operating overall at LOS B or better in the AM and PM peak hours. The following intersections have one of more movements that operates at LOS E or F in one or both peak hours as described below:

- ***US Highway 40 and Walton Creek Road:*** This signalized intersection was calculated to operate at LOS D overall in the AM peak hour and LOS E in the PM peak hour. During the morning peak, the northbound through and southbound left-turn movements operate at LOS E and LOS F, respectively. During the evening peak hour, the westbound left-turn/through, northbound through, and southbound left-turn movements operate at LOS E/F. The 95th percentile queue for the northbound through movement was estimated to be up to 827 feet (about 33 vehicles). The 95th percentile queue for the southbound left-turn lane was estimated to be up to 771 feet (about 31 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 303 feet (about 12 vehicles). The high volumes and limited green time are impacting the delay and queueing of these movements.

  Recommendations: Due to the high volumes on the southbound left-turn movement, it would be beneficial to provide a second turn lane; however, accommodating a second turn lane and second receiving lane may not be feasible and would require significant intersection reconstruction. If

this were able to be accomplished, then the intersection performance would improve to LOS B overall in both peak hours and all movements operating at LOS D or better.

- ***US Highway 40 and Dougherty Road/Stone Lane:*** This side-street stop-controlled intersection was calculated to operate at LOS A overall in the AM peak hour and LOS C in the PM peak hour. The eastbound approach and westbound left-turn/through lane were calculated to operate at LOS F in both peak hours. The 95th percentile queue for the eastbound approach was estimated to be up to 130 feet (about 5 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 28 feet (about one vehicle). The high delay for side-street vehicles is caused by the heavy flow of through traffic on US Highway 40 in each peak hour.

  Recommendations: No mitigation measure is recommended. High side-street approach delays during both peak hours are typical of unsignalized approaches along a major arterial roadway. The side-street volumes are not approaching traffic signal warrant thresholds and queues are minimal. Signal warrants were evaluated and refer to **Section 8.0** for more details.

5.0 FUTURE TRAFFIC CONDITIONS

5.1 Annual Growth Factor and Future Volume Methodology

CDOT maintains a database of 20-year projected growth factors for all roadway segments that make up the state highway system in Colorado. In theory, these growth factors should include the additional traffic for developments, such as the proposed Independent Hotel and Holiday Inn Express and other nearby developments, that may be built within the next 20 years. For this project, CDOT's traffic growth factors for US Highway 40 in this area were reviewed. The resulting 20-year traffic growth factors used for this study (that ultimately include the hotel traffic) are:

US 40 north of Walton Creek Road:	1.30 = 1.3% annual growth rate
US 40 south of Walton Creek Road:	1.23 = 1.0% annual growth rate
US 40 north of Highway 131:	1.17 = 0.79% annual growth rate
Average:	**1.23 = 1.0% annual growth rate**

In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based on the CDOT 20-year factors, as well as historic traffic volumes from other studies in the area. Based on this data, it is assumed there will be an annual growth rate of 1.0% within the study area. The growth rate was not applied to the traffic to/from Dougherty Road or Stone Lane since traffic cannot grow on these roadways without further development.

Using these assumptions, the Year 2026 background traffic is summarized on **Figure 4** and the Year 2042 background traffic is summarized on **Figure 5.**

5.2 Future Roadway Improvements

It anticipated that by Year 2042 that the Stone Lane extension and bridge over Walton Creek will be completed. It is estimated that there will be a daily background volume of 2,500 vpd[3] on Stone Lane which will be displaced from Walton Creek Road. In each peak hour it was assumed that 300 vph will utilize Stone Lane instead of Walton Creek Road. The volume was distributed by direction and movement to match the traffic patterns experienced currently at Walton Creek Road. Refer to the **Appendix** for calculations.

5.3 Year 2026 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the Year 2026 background scenario and to identify any capacity constraints associated with background traffic. The short-term background volumes, lane configuration, and traffic control are illustrated on **Figure 4**.

The level of service criteria discussed previously was applied to the study intersections to determine the impacts with the short-term (Year 2026) background volumes. The results of the LOS calculations for the intersections are summarized in **Table 1.** The 95th percentile queues are summarized on **Table 2**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

The Year 2026 background analysis assumed the existing lane configuration and traffic control would remain the same at the study intersections. The following intersections are estimated to have at least one approach that will operate at LOS E or F in the short-term future:

- ***US Highway 40 and Walton Creek Road:*** This signalized intersection was calculated to operate at LOS D overall in the AM peak hour and LOS E in the PM peak hour. During the morning peak, the northbound through and southbound left-turn movements operate at LOS E and LOS F, respectively. During the evening peak hour, the westbound left-turn/through, northbound through, and southbound left-turn movements operate at LOS E/F. The 95th percentile queue for the northbound through movement was estimated to be up to 876 feet (about 35 vehicles). The

[3] Reference the memorandum dated December 29, 2014, that details the cost contribution and adjustment of traffic on Stone Lane and Walton Creek Road. The report evaluated the existing traffic within the area and determined that there will be approximately 2,500 vpd on Stone Lane that would otherwise use Walton Creek Road. This is consistent with previous studies.

95th percentile queue for the southbound left-turn lane was estimated to be up to 821 feet (about 33 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 320 feet (about 13 vehicles). The high volumes on three of the four approaches and limited green time are impacting the delay and queueing of these movements.

Recommendations: As discussed in the existing scenario, this intersection would benefit from a second southbound left-turn lane. If this were able to be accomplished, then the intersection performance would improve to LOS C overall in both peak hours and all movements operating at LOS D or better.

- ***US Highway 40 and Dougherty Road/Stone Lane:*** This side-street stop-controlled intersection was calculated to operate at LOS A overall in the AM peak hour and LOS C in the PM peak hour. The eastbound approach and westbound left-turn/through lane were calculated to continue to operate at LOS F in both peak hours. The 95th percentile queue for the eastbound approach was estimated to be up to 140 feet (about 6 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 30 feet (about one vehicle). The high delay for side-street vehicles is caused by the heavy flow of through traffic on US Highway 40 in each peak hour.

  Recommendations: Monitor the volumes and safety of this intersection as volumes increase on the highway. Since the westbound right-turn movement has a deceleration and acceleration lane, the volumes are not included in the signal warrant analysis; therefore, the side-street volumes are not exceeding the traffic signal warrant thresholds. Signal warrants were evaluated and refer to **Section 8.0** for more details. For informational purposes, if a signal was determined to be the appropriate traffic control for this intersection then the performance would improve to LOS B in AM peak hour and LOS C in the PM peak hour with all movements operating at LOS D or better in both peak hours.

5.4 Year 2042 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the Year 2042 background scenario and to identify any capacity constraints associated with background traffic. The Peak Hour Factors (PHF) were set to 0.92 on US 40 or 0.88 on Stone Lane (unless the existing PHF was greater than this value) since it is assumed that the peak periods will become longer with peak hour traffic spread more evenly over the hour as traffic increases than is experienced today. In the long-term scenario, it was assumed that the Stone Lane extension and bridge are completed.

The level of service criteria discussed previously was applied to the study area intersections to determine the impacts with the long-term (Year 2040) background volumes. The results of the LOS calculations for the intersections are summarized in **Table 1.** The 95th percentile queues are summarized on **Table 2**. The intersection level of service worksheets and queue reports are attached in the **Appendix**. The following intersection is estimated to have at least one approach that will operate at LOS E or F in the long-term future:

- ***US Highway 40 and Walton Creek Road:*** This signalized intersection was calculated to operate at LOS E overall in the AM peak hour and LOS F in the PM peak hour. The westbound left-turn/through, northbound through, and southbound left-turn movements were estimated to operate at LOS E/F in one or both peak hours. The 95th percentile queue for the northbound through movement was estimated to be up to 1,264 feet (about 51 vehicles). The 95th percentile queue for the southbound left-turn lane was estimated to be up to 768 feet (about 31 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 313 feet (about 13 vehicles). The high volumes on three of the four approaches and limited green time are impacting the delay and queueing of these movements.

  Recommendations: As discussed in the previous scenarios, this intersection would benefit from a second southbound left-turn lane. Additionally, the northbound approach warrants a second through lane. If a second southbound left-turn lane and second northbound through lane were able to be accomplished, then the intersection performance would improve to LOS B overall in both peak hours and all movements operating at LOS D or better.

- ***US Highway 40 and Dougherty Road/Stone Lane:*** This side-street stop-controlled intersection was calculated to operate at LOS F overall in both peak hours due to the significantly high volumes on the side streets. The 95th percentile queue for the eastbound approach was estimated to be up to 190 feet (about 8 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 163 feet (about 6 vehicles). The high delay for side-street vehicles is caused by the heavy flow of through traffic on US Highway 40 in each peak hour.

  Recommendations: Monitor the volumes and safety of this intersection as volumes increase on the highway. Since the westbound right-turn movement has a deceleration and acceleration lane, the volumes are not included in the signal warrant analysis; therefore, the side-street volumes are not exceeding the traffic signal warrant thresholds. Signal warrants were evaluated and refer to **Section 8.0** for more details. For informational purposes, if a signal was determined to be the appropriate traffic control for this intersection then the performance would improve to LOS B in both peak hours with all movements operating at LOS D or better in both peak hours.

6.0 PROPOSED DEVELOPMENT TRAFFIC

With the proposed development of the Independent Hotel and Holiday Inn Express, the existing access road between Stone Lane at the Homewood Suites West Access and Storm Peaks Apartments will be remain. A new access roadway will be constructed as the north leg of the intersection of Stone Lane at the Homewood Suites East Access that will be extended north to the east side of the Storm Peaks Apartments property.

6.1 Trip Generation

A trip generation estimate was performed to determine the traffic characteristics of the Independent Hotel and Holiday Inn Express development. The trip rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*[4] for land use #310 "Hotel" were applied to estimate the proposed traffic for the hotel rooms. The trip rates from *Work Force Housing Traffic Study in Steamboat Springs (Fox Tuttle, 2021)* were applied to estimate the proposed traffic for the Work Force dwelling units. The study is included in the **Appendix**. The site is expected to experience two of the four basic trip types as discussed below:

> Primary Trips. These trips are made specifically to visit the site and are considered "new" trips. Primary trips would not have been made if the proposed project did not exist. Therefore, this is the only trip type that increases the total number of trips made on a regional basis. It is expected that the proposed project will experience mostly primary trips.
>
> Non-Auto Trips. These trips are those that are completed by walking, bicycling, or riding transit. The existing transit, pedestrian, and bicycle amenities will encourage visitors and employees to make non-auto trips to/from the hotels. A non-auto reduction of 6% was applied.

The trip generation estimates using these rates are summarized on **Table 2**. It is projected that the Independent Hotel and Holiday Inn Express development will generate approximately 1,254 automobile trips per day, with 72 trips occurring in the morning peak hour and 93 trips occurring in the PM peak hour.

[4] Trip Generation 11th Edition, Institute of Transportation Engineers, 2021.

Table 3. Trip Generation Summary

Land Use	Size	Unit	Internal and Non-Auto	Average Daily Trips				AM Peak Hour Trips				PM Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
ITE 310: Hotel	163	rooms	6%	7.99	1,224	612	612	0.46	70	39	31	0.59	90	46	44
Steamboat Work Force	9	dormitory units	6%	3.90	30	15	15	0.28	2	1	1	0.39	3	2	1
Total Weekday New Trips:					***1,254***	***627***	***627***	***AM >***	***72***	***40***	***32***	***PM >***	***93***	***48***	***45***

Source : ITE Trip Generation 11th Edition, 2021.
Work Force Housing Traffic Study in Steamboat Springs (Fox Tuttle Transportation Group), 2021.

6.2 Trip Distribution and Assignment

The estimated trip volumes presented in **Table 3** were distributed onto the study roadway network based on existing traffic characteristics of the area, existing and future land uses, and the relationship of this project to the greater Steamboat Springs community. It was assumed that with construction of the future Stone Lane bridge will be completed by the long-term scenario, that some of the traffic on Walton Creek Road will be redirected to Stone Lane. The overall assumed distribution for the short-term scenario is as follows and presented on **Figure 6**A:

- 70 percent to/from north US 40
- 10 percent to/from south US 40
- 20 percent to/from east Walton Creek Road

The overall assumed distribution for the long-term scenario with the extension of Stone Lane is as follows and shown on **Figure 6B**:

- 70 percent to/from north US 40
- 10 percent to/from south US 40
- 20 percent to/from east Stone Lane

The trip assignment in Year 2026 is provided on **Figure 7A** and the redirected trip assignment for Year 2042 is shown on **Figure 7B**.

6.3 CDOT Access Permit

CDOT requires an access permit when the side-street volume increases the permitted volume by 20% or more. The current access permit for Stone Lane on US Highway 40 is dated August 7, 2017 and included the old Fairfield Inn (converted to Storm Peak Apartments) and the Homewood Suites with a permitted volume of 111 vph. The new trips on Stone Lane accessing US Highway 40 will add approximately 72 vehicles in the AM peak hour and 93 vehicles in the PM peak hour. This equates to approximately 66% increase in traffic over the permitted volumes in the AM peak hour and 84% of the PM peak hour. The additional volumes associated with the new hotels require an updated access permit, which will be included in the submittal package. It is anticipated that an additional access permit will be needed when Stone Lane is extended.

7.0 FUTURE TRAFFIC CONDITIONS WITH SITE DEVELOPMENT

This section forecasts the future traffic conditions in the Year 2026 (short-term) and Year 2042 with the Independent Hotel and Holiday Inn Express project in place.

7.1 Year 2026 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the proposed Independent Hotel and Holiday Inn Express development trips in the build out scenario with the project fully built out and occupied. The site-generated volumes were added to the projected Year 2026 background volumes and are illustrated on **Figure 8**. The results of the LOS calculations for the intersections are summarized on **Table 1**. The 95th percentile queues are summarized on **Table 2**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

As shown on the Level of Service summary table (**Table 1**), **the project trips slightly increase the delays and queuing at the study intersections and utilized movements**. The most significant impacts were estimated to be on the westbound approach of US Highway 40 at Dougherty Road/Stone Lane since this will be the only exit for hotel trips. The following summarizes the comparison of the analyses at this intersection with the project trips:

- ***US Highway 40 and Walton Creek Road:*** This signalized intersection was calculated to operate at LOS E overall in both peak hours. During both peak hours, the westbound left-turn/through, northbound through, and southbound left-turn movements operate at LOS E or LOS F. The 95th percentile queue for the northbound through movement was estimated to be up to 932 feet (about 38 vehicles). The 95th percentile queue for the southbound left-turn lane was estimated

to be up to 821 feet (about 33 vehicles). The 95th percentile queue for the westbound left-turn/through lane was estimated to be up to 341 feet (about 14 vehicles). The analysis indicates the intersection is at capacity and any additional traffic will add delay to the impacted movements.

Recommendations: As discussed in the background scenario, this intersection would benefit from a second southbound left-turn lane. If this were able to be accomplished, then the intersection performance would improve to LOS C overall in both peak hours and all movements operating at LOS D or better.

- ***US Highway 40 and Dougherty Road/Stone Lane:*** This side-street stop-controlled intersection was calculated to operate at LOS C overall in the AM peak hour and LOS F in the PM peak hour. The eastbound approach and westbound left-turn/through lane were calculated to continue to operate at LOS F in both peak hours. The 95th percentile queue for the eastbound approach was estimated to increase by approximately 13 feet (one vehicle or less). The 95th percentile queue for the westbound left-turn/through lane was estimated to increase by 33 feet (two vehicles or less).

  Recommendations: Monitor the volumes and safety of this intersection as volumes increase on the highway. The side-street volumes are not exceeding the traffic signal warrant thresholds (refer to **Section 8.0** for more details on signal warrant evaluation). For informational purposes, if a signal was determined to be the appropriate traffic control for this intersection, then the performance would improve to LOS B in AM peak hour and LOS C in the PM peak hour with all movements operating at LOS D or better in both peak hours.

The proposed access on Stone Lane were estimated to operate at LOS A overall in both peak hours with all movements operating at LOS B or better with the 95th percentile queue calculated to be one vehicle or less.

7.2 Year 2042 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the proposed Independent Hotel and Holiday Inn Express trips in the build out scenario with the project fully built out and fully occupied, as well as the Stone Lane extension over Walton Creek. The site-generated volumes were added to the projected Year 2042 background volumes and are illustrated on **Figure 9**. The results of the LOS calculations for the intersections are summarized on **Table 1**. The 95th percentile queues are summarized on **Table 2**. The intersection level of service worksheets and queue reports are attached in the **Appendix**.

As shown on the Level of Service summary table, **the project trips have little impact on the delays at the study intersections**. The side-street movements at US Highway 40 and Dougherty Road/Stone Lane are anticipated to continue to operate at LOS F in both peak hours with delays over two (2) minutes. A summary of the changes is listed below:

- ***US Highway 40 and Walton Creek Road:*** This signalized intersection was calculated to continue to operate at LOS E overall in the AM peak hour and LOS F in the PM peak hour. The westbound left-turn/through, northbound through, and southbound left-turn movements were estimated to operate at LOS E/F in one or both peak hours. The 95th percentile queue for the northbound through movement was estimated to increase by 55 feet (about 3 vehicles). The 95th percentile queue for the southbound left-turn lane and westbound left-turn/through lane were estimated to remain the same as background. The high volumes on three of the four approaches and limited green time are impacting the delay and queueing of these movements.

  Recommendations: As discussed in the previous scenarios, this intersection would benefit from a second southbound left-turn lane. Additionally, the northbound approach warrants a second through lane. If a second southbound left-turn lane and second northbound through lane were able to be accomplished, then the intersection performance would improve to LOS B overall in both peak hours and all movements operating at LOS D or better.

- ***US Highway 40 and Dougherty Road/Stone Lane:*** This side-street stop-controlled intersection was calculated to continue to operate at LOS F overall in both peak hours due to the significantly high volumes on the side street approaches. The 95th percentile queue for the eastbound approach was estimated to increase by approximately 15 feet (one vehicle or less). The 95th percentile queue for the westbound left-turn/through lane was estimated to increase by approximately 25 feet (one vehicle).

  Recommendations: Monitor the volumes and safety of this intersection as volumes increase on the highway. The side-street volumes are not exceeding the traffic signal warrant thresholds (refer to **Section 8.0** for more details on signal warrant evaluation). For informational purposes, if a signal was determined to be the appropriate traffic control for this intersection, then the performance would improve to LOS B in both peak hours with all movements operating at LOS D or better in both peak hours.

The proposed access on Stone Lane were estimated to operate at LOS A overall in both peak hours with all movements operating at LOS B or better with the 95th percentile queue calculated to be one vehicle or less.

8.0 SIGNAL WARRANT ANALYSIS

Due to the reduced level of service, a brief signal warrant analysis was conducted at the intersection of US Highway 40 at Dougherty Road/Stone Lane for all the evaluation scenarios. The peak hour volumes for AM and PM were compared to the peak hour warrant (Warrant 3) threshold set forth by the *Manual on Uniform Traffic Control Devices (FHWA, March 2009)*. Although this intersection does not meet the criteria to use the peak hour warrant, this is the most practical warrant to be evaluated at the traffic study stage and is intended to examine the general need for a future traffic signal. This warrant determines if the minor street traffic suffers excessive delay during the peak periods on an average day. It compares the major street volumes from both directions to the highest volume on one of the minor street approaches. It should be noted that the Peak Hour Signal Warrant is only one of nine warrants in the *MUTCD* when considering the installation of a traffic signal, but it is a good indicator.

In addition to the peak hour signal warrant, the four-hour signal warrant (Warrant 2) was evaluated with interpolated and forecasted hourly traffic volumes. The roadway volumes on Stone Lane and US Highway 40 were utilized to predict how much traffic is anticipated in each hour prior to and after the peak hours.

At the intersection of US Highway 40 at Dougherty Road/Stone Lane, the highest minor street volume is technically the westbound approach. Based on Section 4C.01 of the *MUTCD*, the "right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict." The westbound right-turning vehicles have a separate turn lane and a northbound acceleration lane that allows the turning vehicles to enter the highway with "minimal conflict". Therefore, the right-turn volume was removed from the minor street volume for the signal warrant analysis. Also, the MUTCD also states that if the posted speed limit on the major street exceeds 40 mph than the 70% factor of the volume thresholds can be implemented. The posted speed limit on US Highway 40 at Dougherty Road/Stone Lane is 45 mph; therefore, the 70% factor was utilized.

Figure 10A in the **Appendix** includes the peak hour warrant chart from the *MUTCD* with the volumes for the various scenarios plotted relative to the warrant thresholds. The charts for Warrant 2 (four-hour) are also provided in the Appendix. It can be seen that **the two (2) evaluated signal warrants were not met with or without the project trips in the short-term and long-term scenarios**. It should be noted that **if the westbound right-turn volume were to be included in the minor street volume, then both the peak hour warrant** (shown on **Figure 10B**) and four-hour warrant would be met in both peak periods in Year 2042 background and Year 2042 background + project. It should also be noted that the addition of just the hotel traffic (without the construction of the Stone Lane bridge) would not be enough to warrant a traffic signal in the future. A more in-depth signal warrant study should be conducted with the extension of Stone Lane be able to utilize field volumes instead of forecasted volumes.

9.0 AUXILIARY LANE EVALUATION

The purpose of the criteria is to enhance safety and access along state facilities. The impacted auxiliary lane lengths on US Highway 40 at Walton Creek Road and Dougherty Road/Stone Lane were reviewed to determine if the CDOT criteria is met. Within the study area US Highway 40 is classified as NR-B (Non-Rural Arterial) and has a posted speed limit of 45 mph. Since the speed is greater than 40 mph the auxiliary lane length requirements change from storage+taper to deceleration length (which includes taper). Per the *State Highway Access Code (March 2002)* requirements, a left-turn deceleration lane is required if the volume is greater than 10 vph and a right-turn deceleration lane is required if the volume is greater than 25 vph (this is for speed limits greater than 45 mph). The deceleration length will include the taper length and should be a total of 435 feet with the taper at 13.5 to 1, which equates to 162 feet. An acceleration lane on an NR-B needs to be 550 feet in length with an included taper of 162 feet.

Table 4 provides the existing auxiliary lane dimensions and CDOT design lengths requirements. The listed movements serve the proposed project site and the peak hour volumes for existing, and future were reviewed to determine the compliance with the required auxiliary lane lengths.

Table 4. Auxiliary Lane Evaluation

Intersection and Movement	Existing			CDOT Design Criteria			Criteria Met?
	Storage Length	Taper Length	Total Length	Lane Req'd by Vol.? (1)	Total Auxiliary Lane Length	Taper Length (2)	
US Highway 40 at Walton Creek Road							
NB Right	310'	280'	590'	Yes	435'	162'	Yes
US Highway 40 at Dougherty Road/Stone Lane							
NB Right	290'	260'	550'	Yes	435'	162'	Yes
NB Accel.	500'	190'	690'	Yes	550'	162'	Yes
SB Left	N/A	N/A	TWLTL	Yes	435'	162'	Yes

(1) The volume from 2035 Background + Project was utilized for this comparison.

(2) The taper length is included in the deceleration length.

As shown in **Table 4**, all of the existing auxiliary lanes meet the CDOT criteria.

10.0 QUEUE ANALYSIS

A queuing analysis was performed to determine if the 95th percentile queues would be accommodated by the existing storage length, to determine the storage lengths for future auxiliary lanes, and if any of the queues would impact an upstream intersection/access. **Table 2** provides the existing and proposed storage lengths, as well as the 95th percentile queues for each existing and future scenario as calculated by Synchro (assuming each vehicle utilizes 25 feet of space). It should be noted that the 95th percentile queue length is a theoretical queue that is 1.65 standard deviations above the average queue length. In theory, the 95th percentile queue would be exceeded 5% of the time based on the average queue length, but it is also possible that a queue this long may not occur.

As shown in **Table 2**, majority of the queues are shorter than the provided storage length in all scenarios, except those highlighted with blue bold font. The queuing issues exist in the existing and background conditions without the project trips. These movements do not serve the proposed hotel trips.

The project trips do not significantly increase queues at the existing study intersections, with the greatest increase on the westbound lanes at US Highway 40 and Dougherty Road/Stone Lane. The westbound left-turn/through movement at the intersection was estimated to experience a 95th percentile queue up to 188 feet, which is anticipated to block the Homewood Suites West Access during the peak of the peak hour. Vehicles exiting the Homewood Suites will be able to exit the hotel via the East Access which is approximately 210 feet to the east of the West Access. With a signal at US Highway 40 and Dougherty Road/Stone Lane, the westbound left-turn/through queue was calculated to be reduced by two (2) vehicles in the AM peak hour and by four (4) vehicles in PM peak hour. The queue would not extend to the Homewood Suites West Access.

At the proposed access road, it was determined that the queues will be one (1) vehicle or less on the side-street approaches.

11.0 COST CONTRIBUTION FOR SIGNAL AT US HIGHWAY 40 AND DOUGHERTY ROAD/STONE LANE

City staff has identified that Independent Hotel and Holiday Inn Express project will be required to contribute funds towards the future signal at the intersection of US Highway 40 and Dougherty Road/Stone Lane. The *"Cost Contribution Estimate for Area Roadway Improvements" Memorandum (Fox Tuttle Hernandez, October 2015)* associated with the previous Steamboat Hotels traffic analysis estimated costs and the contribution associated with the Homewood Suites and a future 140-room hotel and restaurant.

Independent Hotel and Holiday Inn Express project proposed to construct two hotel buildings with 163 rooms and nine (9) dormitory rooms. The cost sharing methodology being discussed is to treat this current project the same as any other development within the City and calculate the funding contribution based on the project's percentage of the total future automobile traffic that will utilize the subject location. The cost contribution calculations utilized the daily traffic volumes and the higher of the AM or PM peak hour traffic volumes.

The Independent Hotel and Holiday Inn Express was estimated to be 23.7% of the daily traffic on Stone Lane approaching US Highway 40, as shown in **Table 5** in the **Appendix**. The cost contribution percentage for the signal at this intersection should equal to the traffic percentage. It should be noted that the number of hotel trips through the intersection divided by the total intersection volume during the PM peak hour equates to 3.0%.

12.0 COST CONTRIBUTION FOR STONE LANE BRIDGE

City staff has identified that Independent Hotel and Holiday Inn Express project will be required to contribute funds towards the future Stone Lane bridge. The cost contribution calculations utilized the forecasted future daily traffic volumes on the bridge. The Independent Hotel and Holiday Inn Express was estimated to be 8.7% of the daily traffic on Stone Lane approaching US Highway 40, as shown in **Table 5** in the **Appendix**. The cost contribution percentage for the bridge at this intersection should equal to the traffic percentage.

13.0 CONCLUSION

The Independent Hotel and Holiday Inn Express proposes to construct two (2) buildings with 163 hotel rooms and nine (9) staff dorm rooms. Access to the site is planned on Stone Lane as the north leg to the intersection of the Homewood Suites East Access, with full movement and side-street stop-control.

Vehicular traffic volumes associated with the Independent Hotel and Holiday Inn Express project have been analyzed for the existing, short-term (Year 2026), and long-term (Year 2042) scenarios. Using ITE trip generation rates and Steamboat specific historic work force rates, the residential project is anticipated to generate approximately 1,254 daily, 72 AM peak hour and 93 PM peak hour trips at buildout during the weekday. **It was determined that the existing roadways and proposed intersection improvements can accommodate the estimated traffic volumes for buildout conditions.** The following recommendations should be considered for implementation:

Background Conditions (Non-Project Related):

- **Stone Lane:** Extend to the east over Walton Creek with one lane per direction and include pedestrian and bicycle accommodations.
- **US Highway 40 at Walton Creek Road:** Construct a second southbound left-turn lane in short-term and construct a second northbound through lane in the long-term. Adjust signal timing to accommodate future volumes and conditions.
- **US Highway 40 at Dougherty Road/Stone Lane:** Monitor need for a signal when Stone Lane is extended. Analysis indicates signal is not warranted; however, delays are anticipated to be significantly high on the side-streets as traffic grows on all approaches, especially on the highway.

Project Related:

- A**ccess on Stone Lane:** Construct with one inbound lane and one outbound lane. Auxiliary lanes are not warranted.

Tables and Figures:

Table 1 - Peak Hour Intersection Level of Service Summary

Intersection and Lanes Groups	2022 Existing				2026 Background				2026 Bkgrd + Project				2042 Background				2042 Bkgrd + Project			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
STOP SIGN CONTROL																				
2. US 40 at Doughtery Rd/ Stone Ln	**7**	**A**	**17**	**C**	**10**	**A**	**23**	**C**	**18**	**C**	**52**	**F**	**80**	**F**	**80**	**F**	**>120**	**F**	**114**	**F**
Eastbound Left+Through+Right	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F
Westbound Left+Through	*102*	F	*>120*	F	*117*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F
Westbound Right	*24*	C	*21*	C	*25*	D	*22*	C	*29*	D	*28*	D	*57*	F	*32*	D	*71*	F	*40*	E
Northbound Left	*9*	A	*13*	B	*9*	A	*14*	B	*9*	A	*14*	B	*9*	A	*11*	B	*9*	A	*11*	B
Southbound Left	*11*	B	*11*	B	*12*	B	*11*	B	*12*	B	*12*	B	*13*	B	*13*	B	*13*	B	*13*	B
3. Stone Ln at Homewood Suites West Access/ Frontage Rd	**3**	**A**	**3**	**A**	**3**	**A**	**3**	**A**	**1**	**A**	**1**	**A**	**1**	**A**	**1**	**A**	**1**	**A**	**1**	**A**
Eastbound Left+Through+Right	*7*	A	*7*	A	*7*	A	*7*	A	*7*	A	*8*	A	*8*	A	*8*	A	*8*	A	*8*	A
Westbound Left+Through+Right	*0*	A	*7*	A	*0*	A	*7*	A	*0*	A	*8*	A	*0*	A	*8*	A	*0*	A	*8*	A
Northbound Left+Through+Right	*9*	A	*10*	A	*9*	A	*10*	A	*10*	A	*11*	B	*12*	B	*13*	B	*13*	B	*14*	B
Southbound Left+Through+Right	*9*	A	*9*	A	*9*	A	*9*	A	*9*	A	*9*	A	*10*	A	*10*	B	*10*	A	*11*	B
4. Stone Ln at Homewood Suites East Access / Proposed Access									**7**	**A**	**7**	**A**	**0**	**A**	**1**	**A**	**3**	**A**	**3**	**A**
Eastbound Through+Right													*0*	A	*0*	A	*8*	A	*8*	A
Eastbound Left+Through+Right									*7*	A	*7*	A								
Westbound Left+Through													*8*	A	*8*	A	*0*	A	*0*	A
Westbound Left+Through+Right									*0*	A	*0*	A								
Northbound Left+Right													*11*	B	*11*	B				
Northbound Left+Through+Right									*10*	B	*11*	B					*13*	B	*15*	B
Southbound Left+Through+Right									*9*	A	*9*	A					*10*	B	*10*	B
SIGNAL CONTROL																				
1. US 40 at Walton Creek Road	**47**	**D**	**57**	**E**	**55**	**D**	**65**	**E**	**59**	**E**	**69**	**E**	**75**	**E**	**96**	**F**	**80**	**E**	**103**	**F**
Eastbound Left+Through+Right	*41*	D	*44*	D	*41*	D	*44*	D	*41*	D	*44*	D	*41*	D	*45*	D	*41*	D	*45*	D
Westbound Left+Through	*52*	D	*60*	E	*54*	D	*61*	E	*57*	E	*64*	E	*49*	D	*60*	E	*49*	D	*60*	E
Westbound Right	*0*	A	*0*	A	*0*	A	*0*	A	*0*	A	*0*	A	*0*	A	*0*	A	*0*	A	*0*	A
Northbound Left	*11*	B	*0*	A	*11*	B	*0*	A	*11*	B	*0*	A	*11*	B	*0*	A	*11*	B	*0*	A
Northbound Through	*61*	E	*82*	F	*75*	E	*95*	F	*86*	F	*113*	F	*>120*	F	*>120*	F	*>120*	F	*>120*	F
Northbound Right	*14*	B	*29*	C	*14*	B	*29*	C	*14*	B	*29*	C	*13*	B	*29*	C	*13*	B	*29*	C
Southbound Left	*86*	F	*107*	F	*99*	F	*>120*	F	*99*	F	*>120*	F	*70*	E	*95*	F	*70*	E	*95*	F
Southbound Through	*5*	A	*6*	A	*5*	A	*6*	A	*5*	A	*6*	A	*5*	A	*7*	A	*5*	A	*7*	A
Southbound Right	*4*	A	*4*	A	*4*	A	*4*	A	*4*	A	*4*	A	*4*	A	*4*	A	*4*	A	*4*	A

Note: Delay represented in average seconds per vehicle.

Table 1 (continued) - Peak Hour Intersection Level of Service Summary (WITH IMPROVEMENTS)

Intersection and Lanes Groups	Improvement	2022 Existing				2026 Background				2026 Bkgrd + Project				2042 Background				2042 Bkgrd + Project			
		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNAL CONTROL																					
1. US 40 at Walton Creek Road		**19**	**B**	**20**	**B**	**21**	**C**	**22**	**C**	**32**	**C**	**27**	**C**	**13**	**B**	**15**	**B**	**14**	**B**	**15**	**B**
Eastbound Left+Through+Right	Add 2nd SB Left-Turn; Adjust Signal Timing; Year 2042- 2nd NB Thru	*41*	*D*	*41*	*D*	*41*	*D*	*41*	*D*	*39*	*D*	*40*	*D*	*43*	*D*	*41*	*D*	*43*	*D*	*41*	*D*
Westbound Left+Through		*42*	*D*	*43*	*D*	*54*	*D*	*54*	*D*	*50*	*D*	*54*	*D*	*51*	*D*	*51*	*D*	*51*	*D*	*51*	*D*
Westbound Right		*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Northbound Left		*6*	*A*	*0*	*A*	*6*	*A*	*0*	*A*	*8*	*A*	*0*	*A*	*8*	*A*	*0*	*A*	*8*	*A*	*0*	*A*
Northbound Through		*22*	*C*	*25*	*C*	*25*	*C*	*28*	*C*	*47*	*D*	*37*	*D*	*14*	*B*	*15*	*B*	*14*	*B*	*15*	*B*
Northbound Right		*8*	*A*	*15*	*B*	*8*	*A*	*16*	*B*	*11*	*B*	*19*	*B*	*10*	*B*	*12*	*B*	*10*	*B*	*12*	*B*
Southbound Left		*23*	*C*	*22*	*C*	*27*	*C*	*26*	*C*	*37*	*D*	*34*	*C*	*13*	*B*	*16*	*B*	*13*	*B*	*18*	*B*
Southbound Through		*5*	*A*	*7*	*A*	*5*	*A*	*7*	*A*	*6*	*A*	*8*	*A*	*8*	*A*	*7*	*A*	*8*	*A*	*7*	*A*
Southbound Right		*4*	*A*	*5*	*A*	*4*	*A*	*5*	*A*	*5*	*A*	*5*	*A*	*6*	*A*	*4*	*A*	*6*	*A*	*4*	*A*
2. US 40 at Doughtery Rd/ Stone Ln						**17**	**B**	**32**	**C**	**19**	**B**	**32**	**C**	**15**	**B**	**13**	**B**	**16**	**B**	**14**	**B**
Eastbound Left+Through+Right	Signalize					*46*	*D*	*55*	*D*	*46*	*D*	*54*	*D*	*45*	*D*	*54*	*D*	*45*	*D*	*53*	*D*
Westbound Left+Through						*44*	*D*	*53*	*D*	*44*	*D*	*53*	*D*	*44*	*D*	*54*	*D*	*44*	*D*	*54*	*D*
Westbound Right						*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*	*0*	*A*
Northbound Left						*5*	*A*	*38*	*D*	*5*	*A*	*38*	*D*	*5*	*A*	*11*	*B*	*5*	*A*	*11*	*B*
Northbound Through						*22*	*C*	*12*	*B*	*25*	*C*	*13*	*B*	*19*	*B*	*11*	*B*	*19*	*B*	*12*	*B*
Northbound Right						*4*	*A*	*4*	*A*	*4*	*A*	*4*	*A*	*5*	*A*	*4*	*A*	*5*	*A*	*5*	*A*
Southbound Left						*19*	*B*	*10*	*B*	*24*	*C*	*12*	*B*	*19*	*B*	*11*	*B*	*22*	*C*	*14*	*B*
Southbound Through						*7*	*A*	*47*	*D*	*7*	*A*	*48*	*D*	*6*	*A*	*13*	*B*	*6*	*A*	*14*	*B*
Southbound Right						*3*	*A*	*3*	*A*	*3*	*A*	*3*	*A*	*3*	*A*	*3*	*A*	*3*	*A*	*3*	*A*

Note: Delay represented in average seconds per vehicle.

Table 2 - Peak Hour 95th Percentile Queue Summary and Proposed Auxiliary Lanes

Intersection and Lanes Groups	Existing Storage Length (Feet)	2022 Existing		2026 Background		2026 Bkgrd + Project		2042 Background		2042 Bkgrd + Project		Max. Queue	CDOT SHAC Requirement (NR-B)				Proposed Minimum Future Storage
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		Speed (mph)	Total (feet)	Storage (feet)	Taper (feet)	
1. US 40 at Walton Creek Road		*Signalized*		*Signalized*		*Signalized*		*Signalized*		*Signalized*							
Eastbound Left+Through+Right	-	*21'*	*37'*	*21'*	*40'*	*21'*	*40'*	*25'*	*47'*	*25'*	*47'*	-	-	-	-	-	**-**
Westbound Left+Through	-	*170'*	*303'*	*178'*	*320'*	*192'*	*341'*	*186'*	*313'*	*186'*	*313'*	-	-	-	-	-	**-**
Westbound Right	140'	***781'***	***372'***	***833'***	***404'***	***839'***	***411'***	***832'***	***418'***	***834'***	***418'***	834'	30	250	154'	96	**830'**
Northbound Left	280'	*2'*	*0'*	*2'*	*0'*	*2'*	*0'*	*1'*	*0'*	*1'*	*0'*	1'	45	435	273'	162	**273'**
Northbound Through	-	*718'*	*827'*	*767'*	*876'*	*802'*	*932'*	*1209'*	*1264'*	*1240'*	*1319'*	-	-	-	-	-	**-**
Northbound Right	280'	*24'*	*67'*	*28'*	*73'*	*30'*	*81'*	*49'*	*91'*	*50'*	*91'*	91'	45	435	273'	162	**273'**
Southbound Left	165'	***403'***	***771'***	***428'***	***821'***	***428'***	***821'***	***391'***	***768'***	***391'***	***768'***	768'	45	435	273'	162	**770'**
Southbound Through	-	*90'*	*142'*	*93'*	*150'*	*100'*	*157'*	*127'*	*215'*	*133'*	*225'*	-	-	-	-	-	**-**
Southbound Right	295'	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	0'	45	435	273'	162	**273'**
2. US 40 at Doughtery Rd/ Stone Ln		*Stop-Control*		*Stop-Control*		*Stop-Control*		*Stop-Control*		*Stop-Control*							
Eastbound Left+Through+Right	-	*100'*	*130'*	*115'*	*140'*	*135'*	*153'*	*190'*	*165'*	*203'*	*170'*	-	-	-	-	-	**-**
Westbound Left+Through	95'	*13'*	*28'*	*15'*	*30'*	*25'*	*63'*	*80'*	***163'***	*95'*	***188'***	-	-	-	-	-	**-**
Westbound Right	-	*15'*	*26'*	*18'*	*18'*	*33'*	*45'*	*145'*	*80'*	*180'*	*115'*	180'	25	180	90'	90	**180'**
Northbound Left	335'	*0'*	*3'*	*0'*	*3'*	*0'*	*3'*	*0'*	*0'*	*0'*	*0'*	0'	45	435	273'	162	**273'**
Southbound Left	300'	*5'*	*8'*	*5'*	*10'*	*13'*	*20'*	*20'*	*30'*	*25'*	*38'*	38'	45	435	273'	162	**273'**
3. Stone Ln at Homewood Suites West Access/ Frontage Rd		*Stop-Control*		*Stop-Control*		*Stop-Control*		*Stop-Control*		*Stop-Control*							
Eastbound Left+Through+Right	-	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	-	-	-	-	-	**-**
Westbound Left+Through+Right	-	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	-	-	-	-	-	**-**
Northbound Left+Through+Right	-	*3'*	*0'*	*3'*	*0'*	*3'*	*3'*	*3'*	*3'*	*3'*	*3'*	-	-	-	-	-	**-**
Southbound Left+Through+Right	-	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	*0'*	-	-	-	-	-	**-**
4. Stone Ln at Homewood Suites East Access / Proposed Access						*Stop-Control*		*Stop-Control*		*Stop-Control*							
Eastbound Through+Right	-							*0'*	*0'*			-	-	-	-	-	**-**
Eastbound Left+Through+Right	-					*3'*	*3'*			*3'*	*3'*	-	-	-	-	-	**-**
Westbound Left+Through	-							*0'*	*0'*			-	-	-	-	-	**-**
Westbound Left+Through+Right	-					*0'*	*0'*			*0'*	*0'*	-	-	-	-	-	**-**
Northbound Left+Right	-							*5'*	*5'*			-	-	-	-	-	**-**
Northbound Left+Through+Right	-					*5'*	*5'*			*8'*	*10'*	-	-	-	-	-	**-**
Southbound Left+Through+Right	-					*3'*	*5'*			*5'*	*8'*	-	-	-	-	-	**-**

Table 5. Hotel Cost Contribution to Stone Lane Bridge and Traffic Signal

Approximate Cost of New Bridge: **$2,500,000** (Year 2015 estimate)

Approximate Cost of New Traffic Signal: **$400,000** (Year 2015 estimate)

Traffic Generator	Future Daily Traffic Volume	Percent On New Bridge	Percent at New Signal	Trips on New Bridge	Trips at New US 40 and Stone/Dougherty Traffic Signal	Percent Cost Contribution to New Bridge	Percent Cost Contribution to New Traffic Signal
Year 2042 Background Traffic	4,245	100%	100%	2,500	2,500	86.8%	59.0%
Fairfield Inn/Storm Peak Apts. - existing	450	20%	80%	90	360	3.1%	8.5%
Homewood Suites - existing	415	10%	90%	40	375	1.4%	8.8%
New 167 room hotel - long term	1,255	20%	80%	250	1,005	8.7%	23.7%
~~New quality restaurant at long term hotel~~	0	20%	80%	0	0	0.0%	0.0%
				2,880	4,240	100.0%	100.0%

Notes:

1. It is estimated that no more than 10% of the hotel related traffic will utilize the new Stone Lane bridge.

2. Future background traffic on Stone lane bridge assumes that 1/3 of the Chinook Lane to US 40 traffic and 1/2 of the Whistler Road to US 40 traffic will utilize the new bridge, and existing traffic on these roadways will increase by approx. 10% by 2042. Note that this estimate of traffic on the bridge is consistent with past studies reviewed.

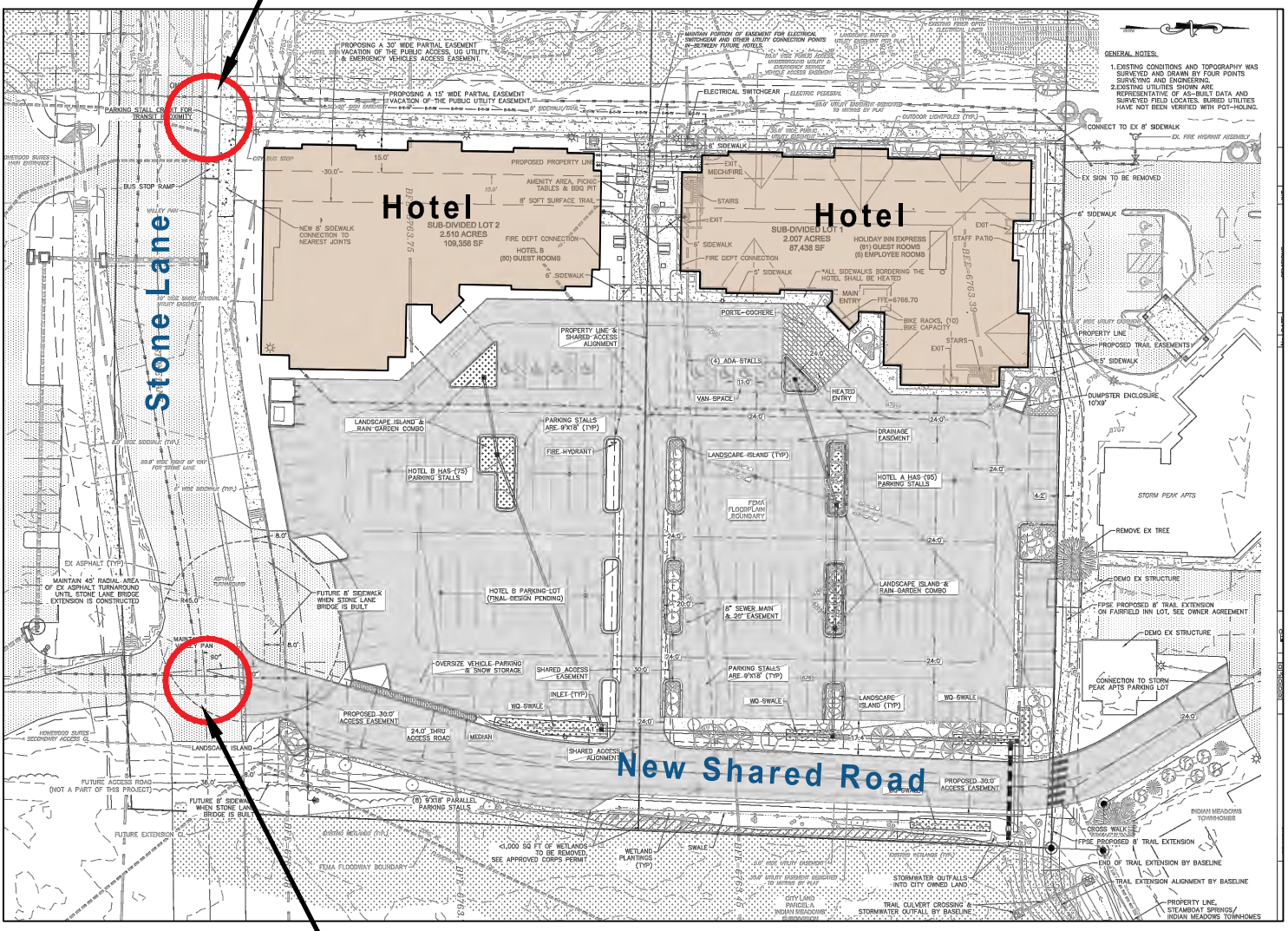
FOX TUTTLE
TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

VICINITY MAP

Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	1

Proposed to Remove existing Frontage Road and North Leg



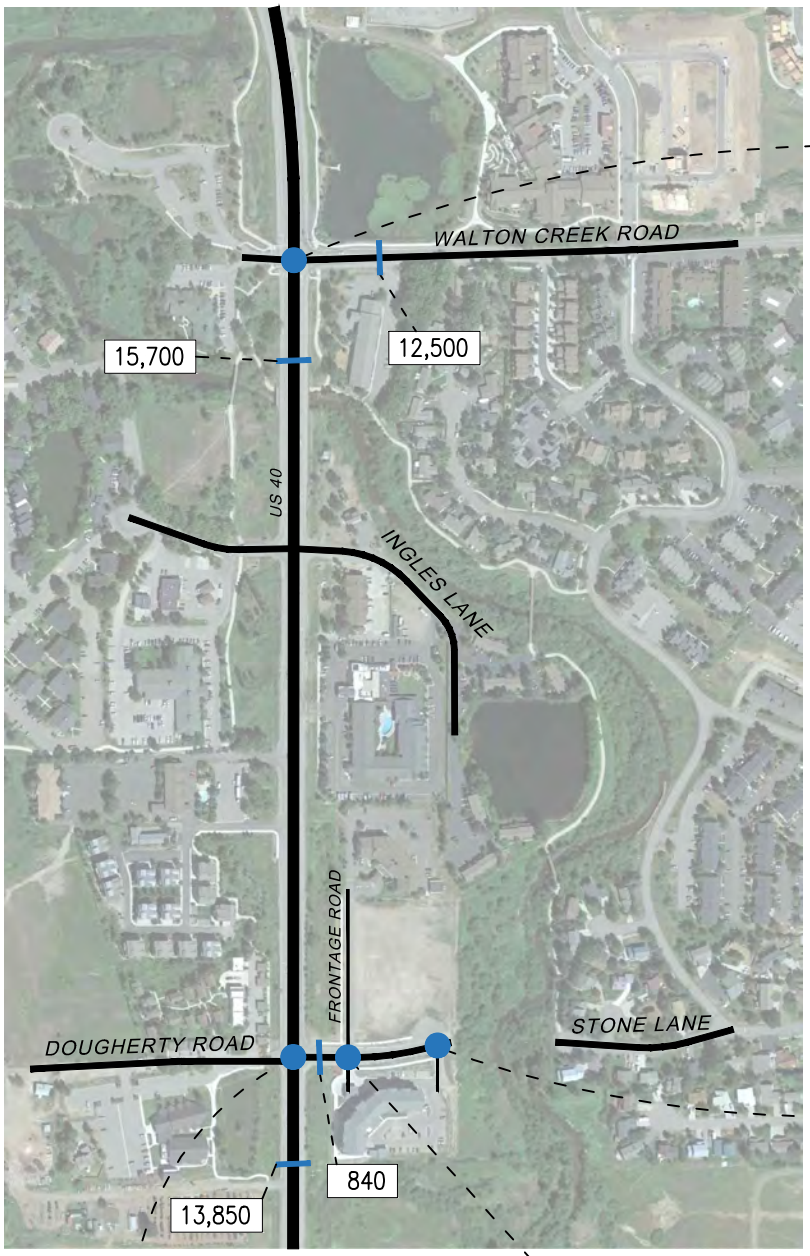
Proposed Access by adding North Leg

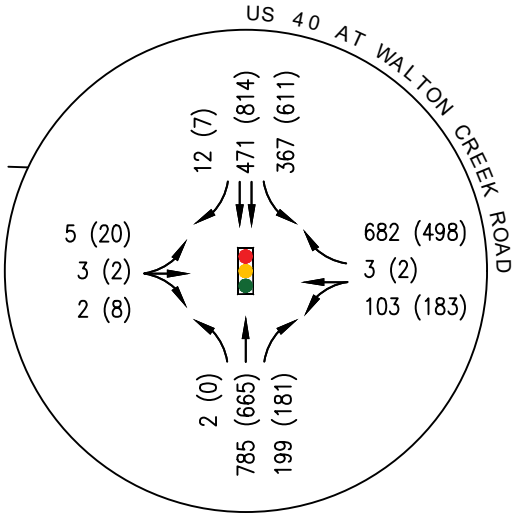
FOX TUTTLE TRANSPORTATION GROUP

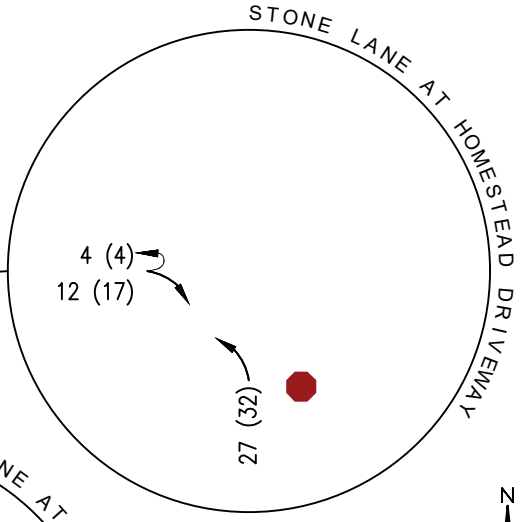
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

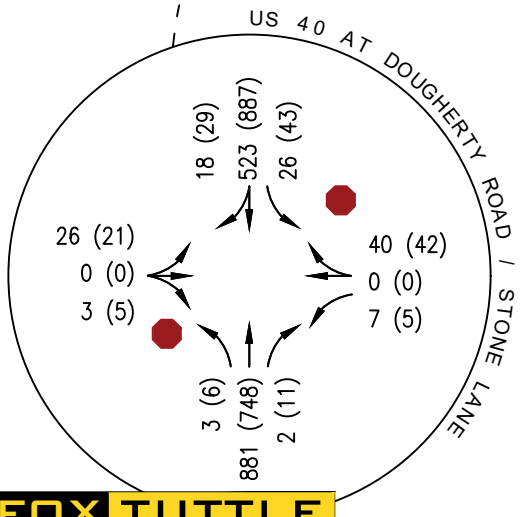
CONCEPTUAL SITE PLAN

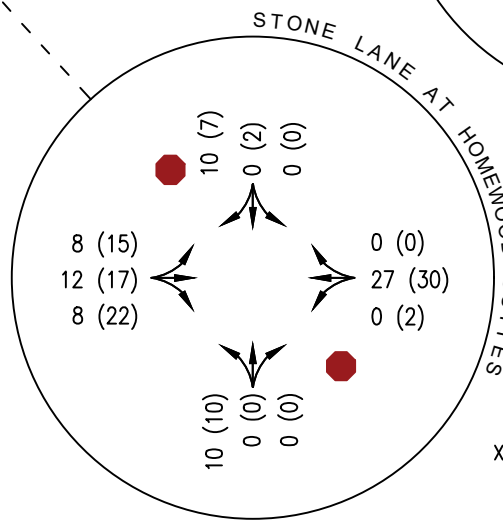
Project #	21073	Original Scale	NTS	Date	6/8/2022	Drawn by	CRS	Figure #	2











N

KEY

X,XXX DAILY TRAFFIC VOLUME

XXX (XXX) AM (PM) PEAK HOUR TRAFFIC VOLUME

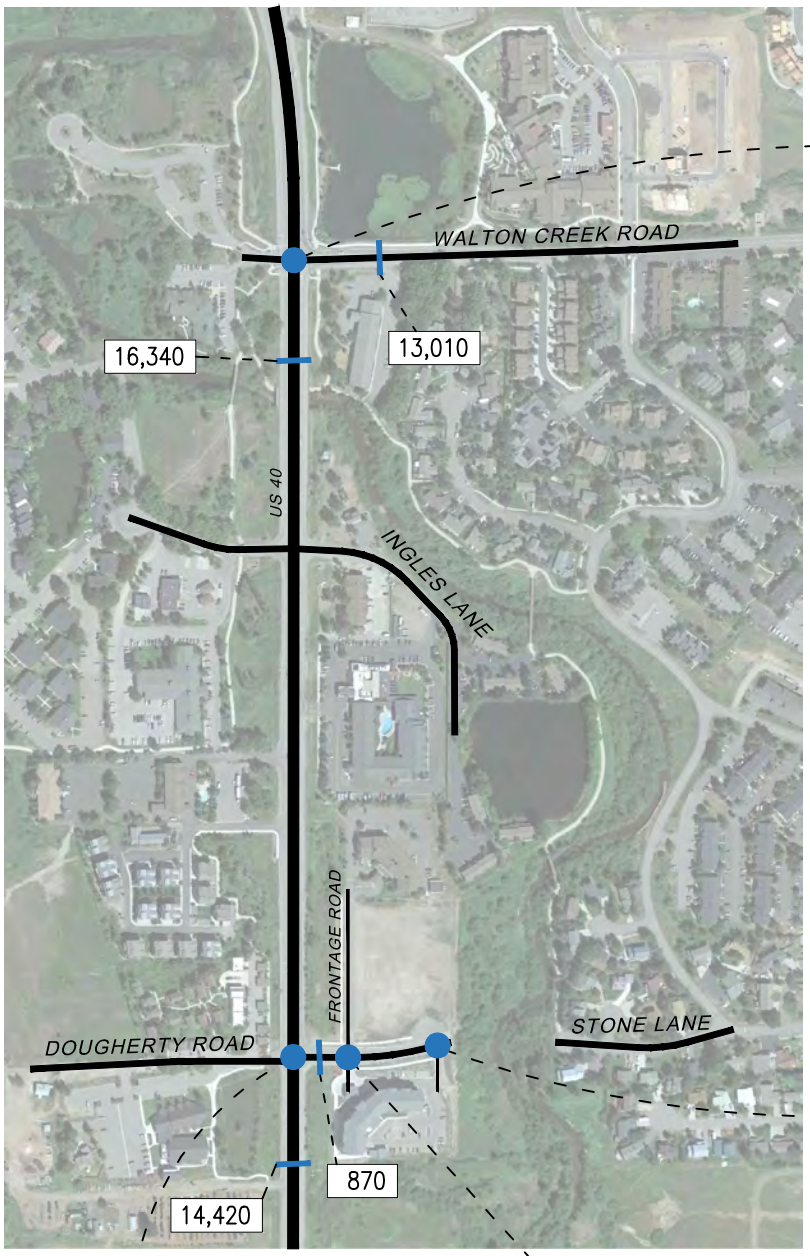
LANE CONFIGURATION

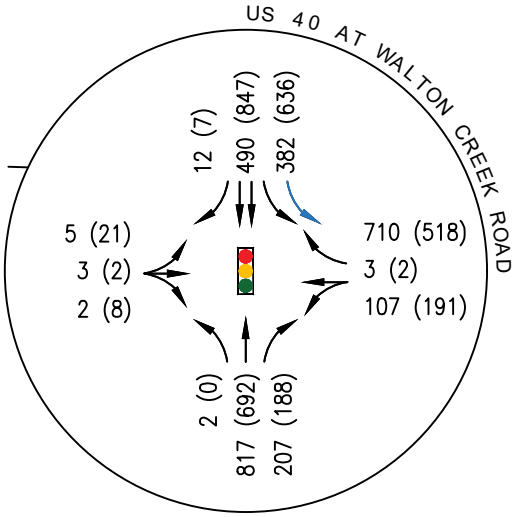
FOX TUTTLE
TRANSPORTATION GROUP

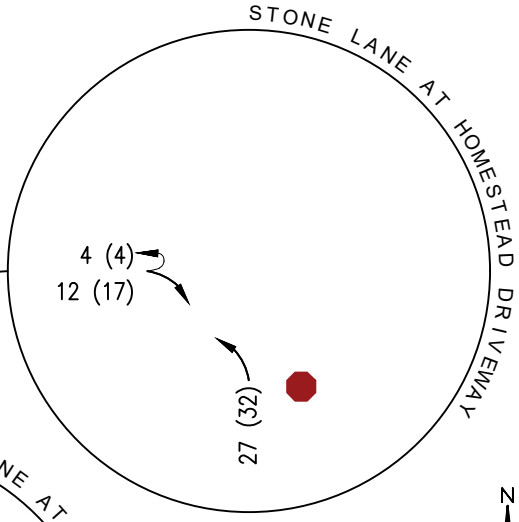
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

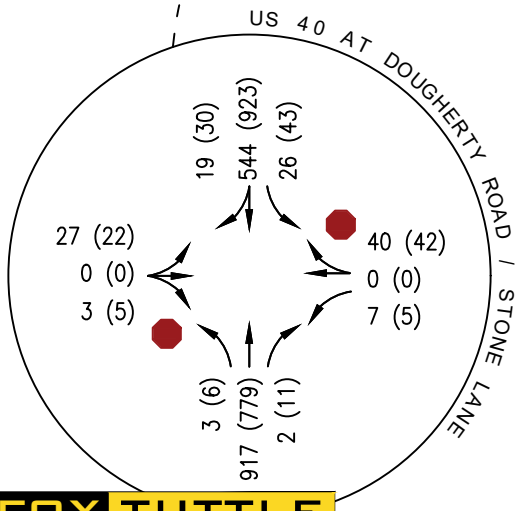
EXISTING TRAFFIC VOLUMES

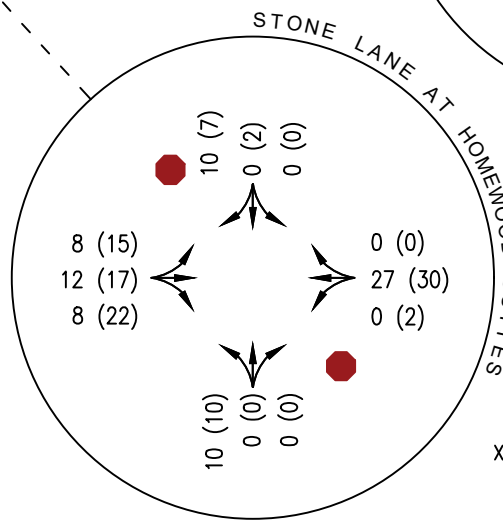
Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	3











N

KEY

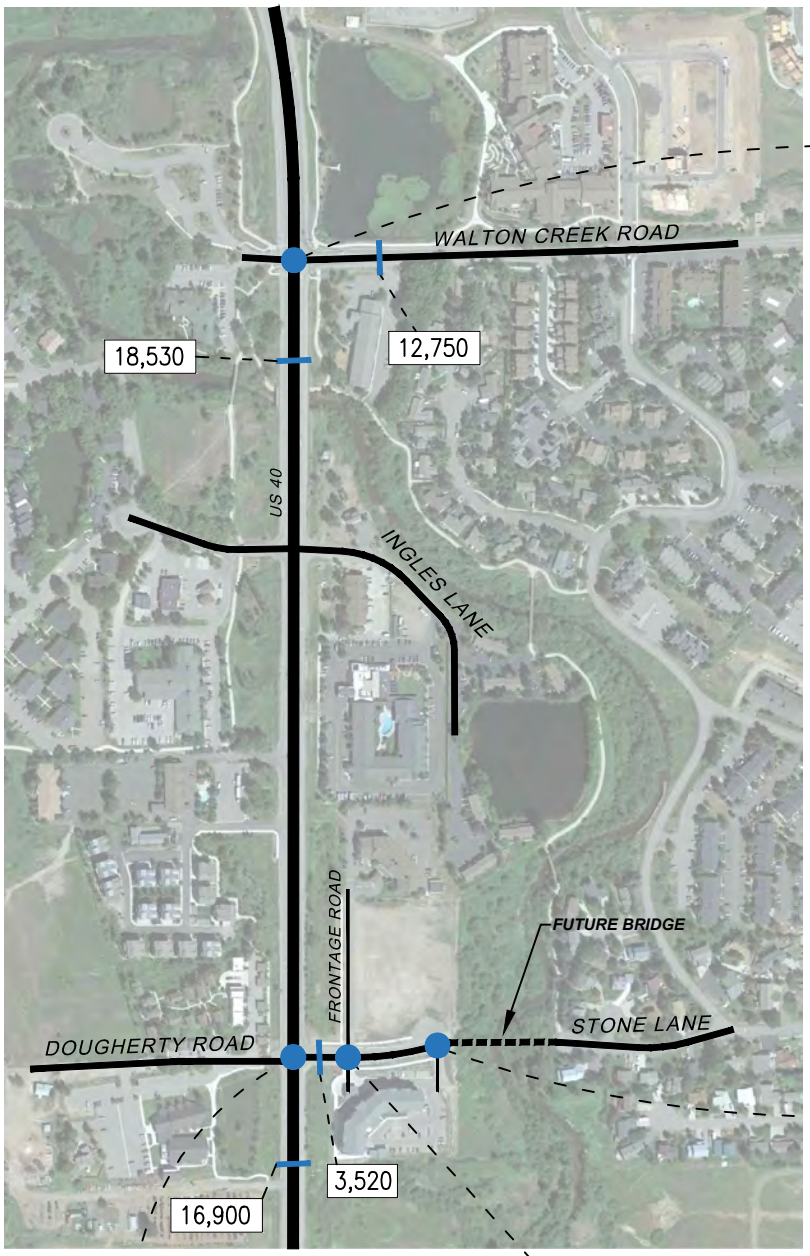
X,XXX	DAILY TRAFFIC VOLUME
XXX (XXX)	AM (PM) PEAK HOUR TRAFFIC VOLUME
→	LANE CONFIGURATION

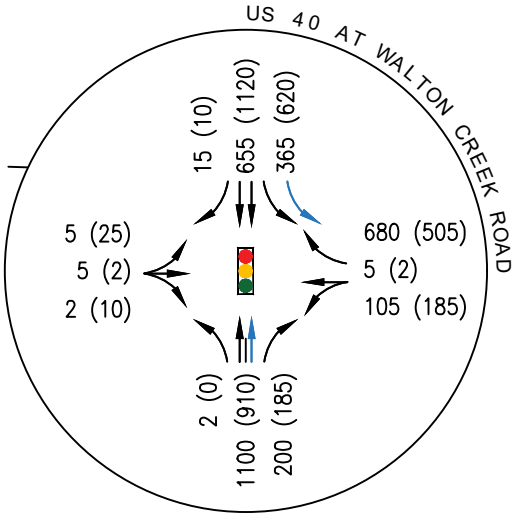
FOX TUTTLE TRANSPORTATION GROUP

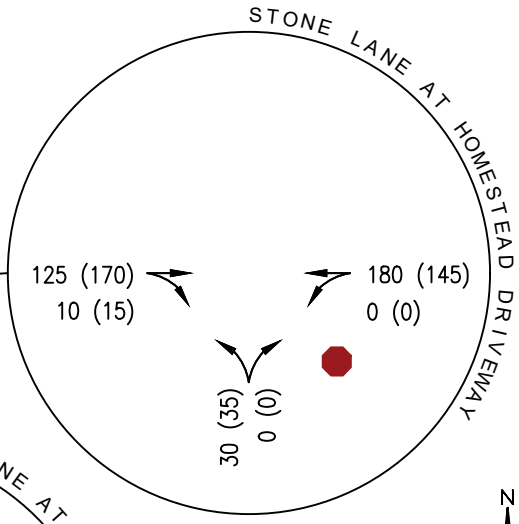
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

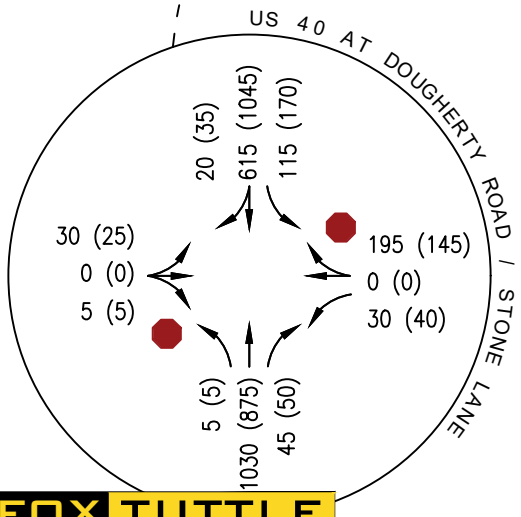
YEAR 2026 BACKGROUND TRAFFIC VOLUMES

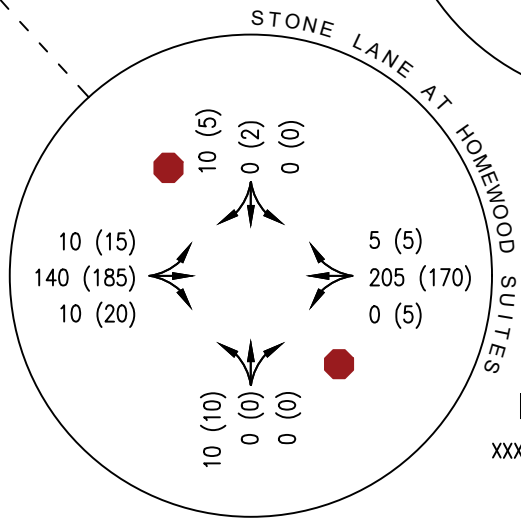
Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	4











N

KEY

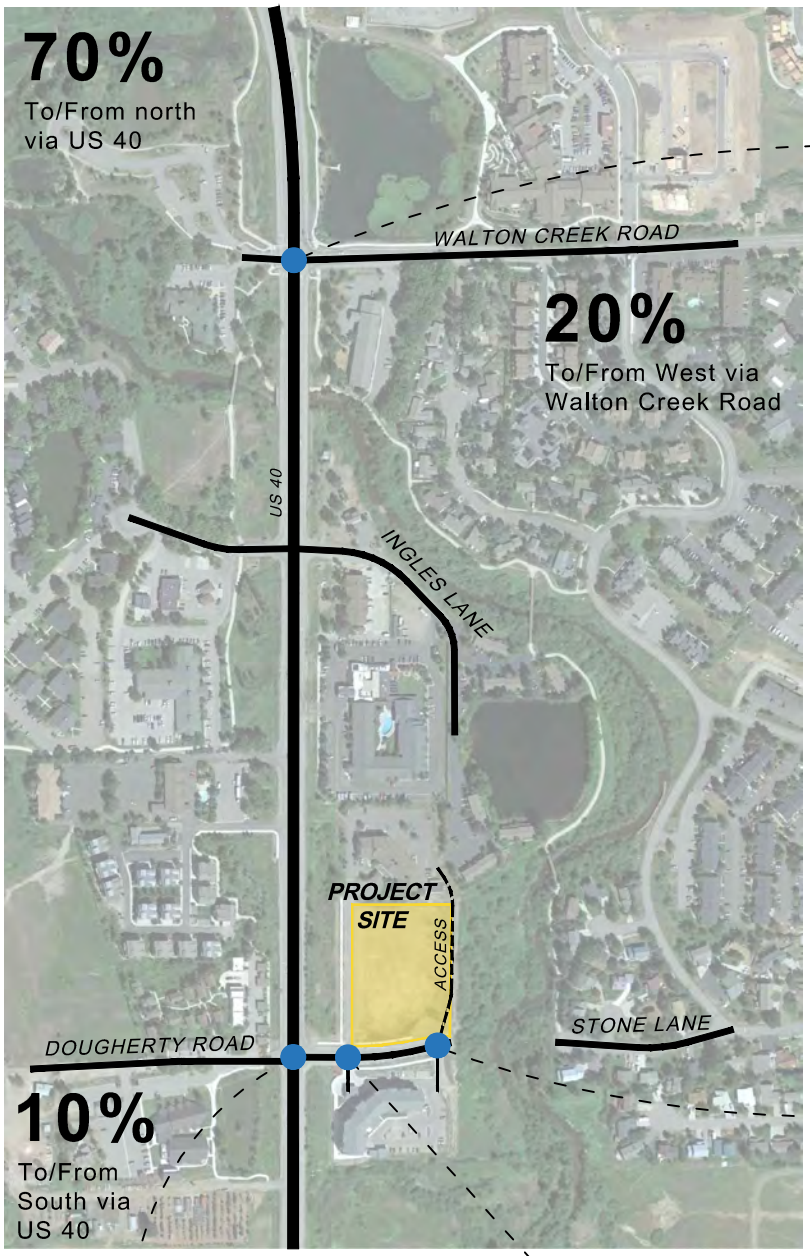
X,XXX	DAILY TRAFFIC VOLUME
XXX (XXX)	AM (PM) PEAK HOUR TRAFFIC VOLUME
→	LANE CONFIGURATION

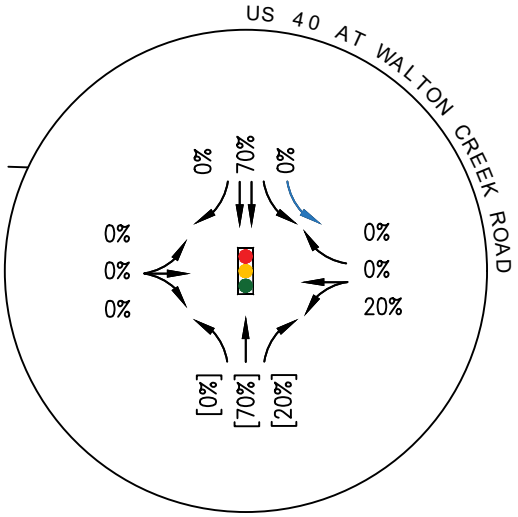
FOX TUTTLE
TRANSPORTATION GROUP

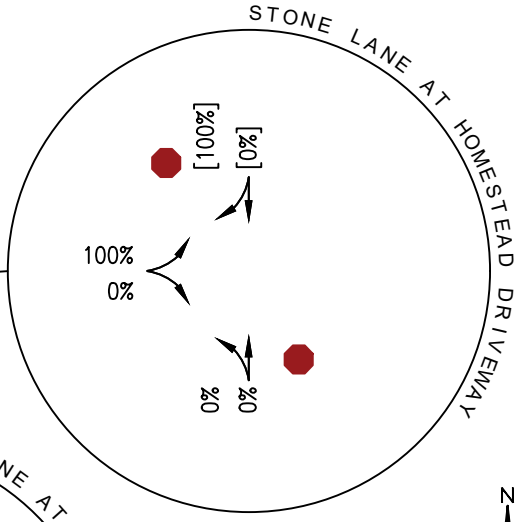
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

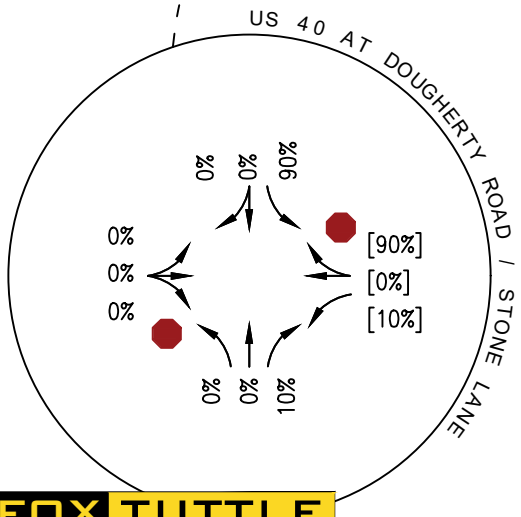
YEAR 2042 BACKGROUND TRAFFIC VOLUMES

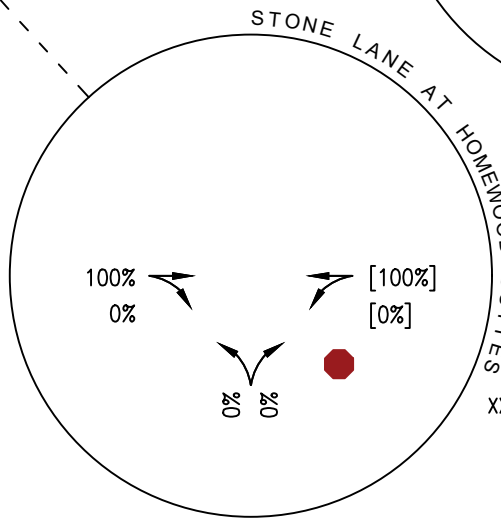
Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	5











N

KEY

XX% [XX%] ENTERING [EXITING] PERCENTAGE

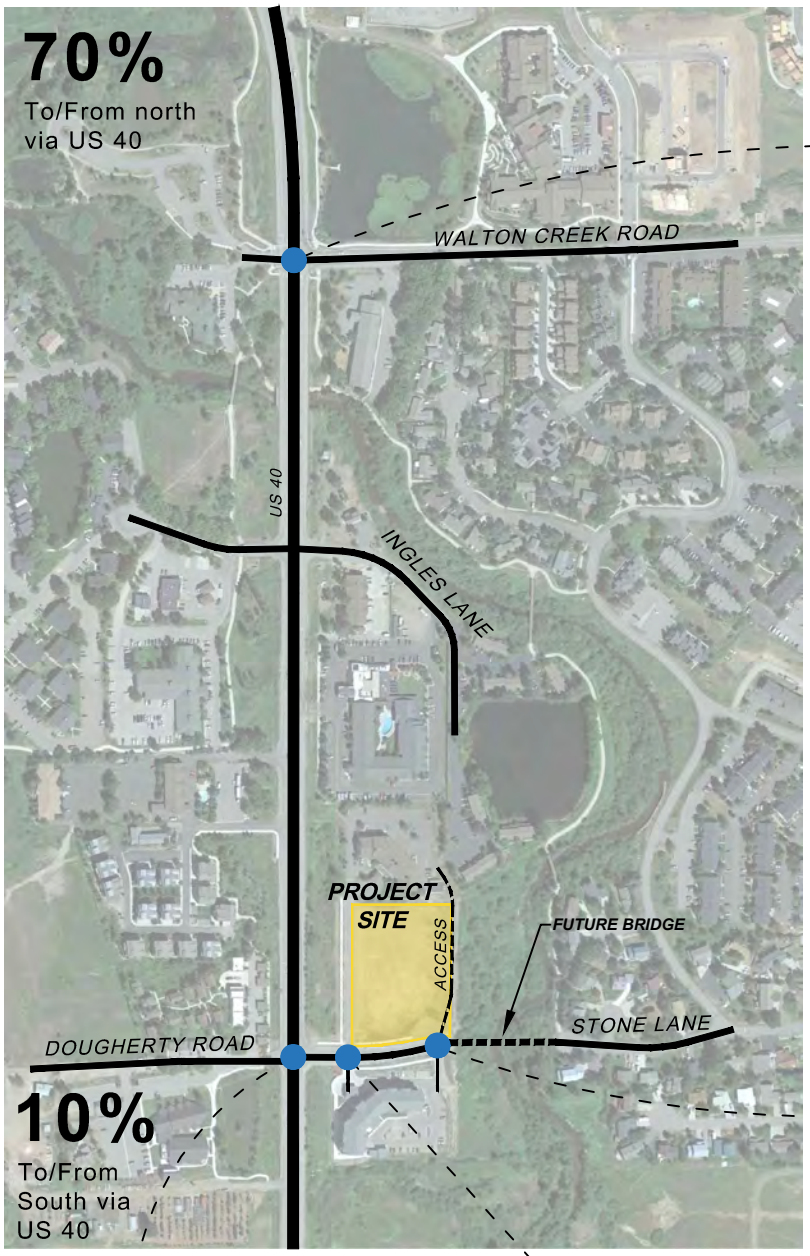
LANE CONFIGURATION

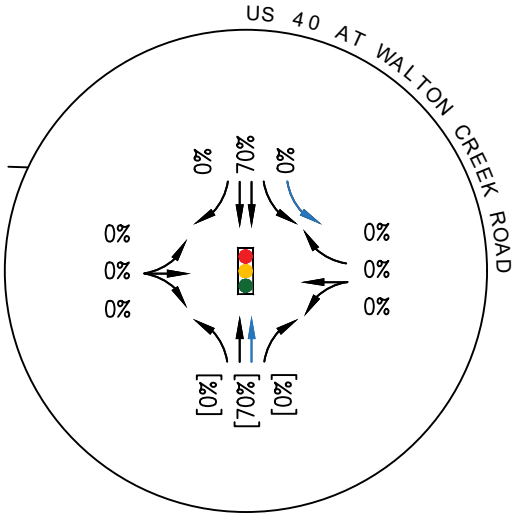
FOX TUTTLE
TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

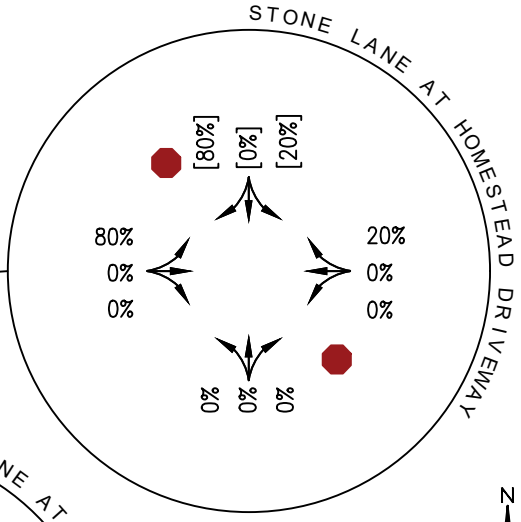
SITE TRIP DISTRIBUTION (SHORT-TERM)

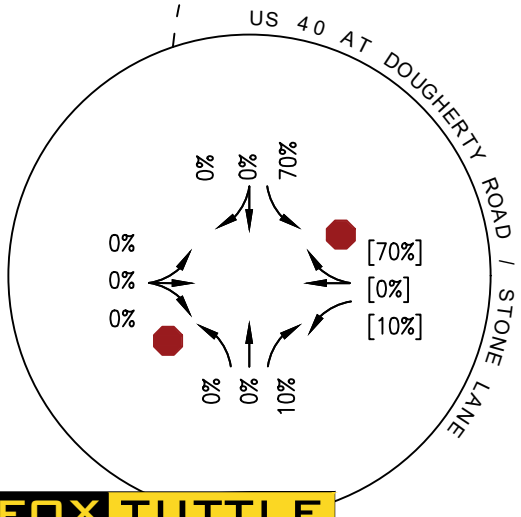
Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	6

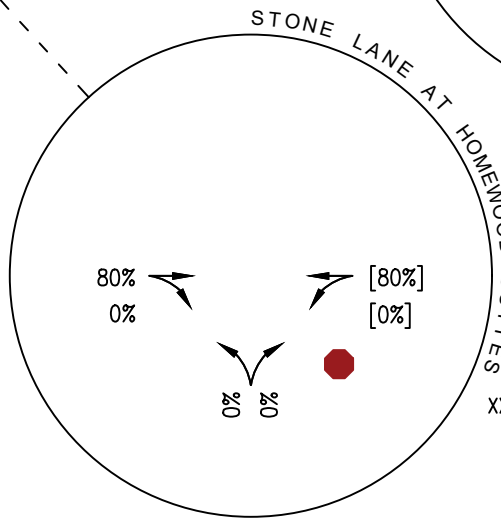




20%
To/From West via Stone Lane







KEY

XX% [XX%] ENTERING [EXITING] PERCENTAGE

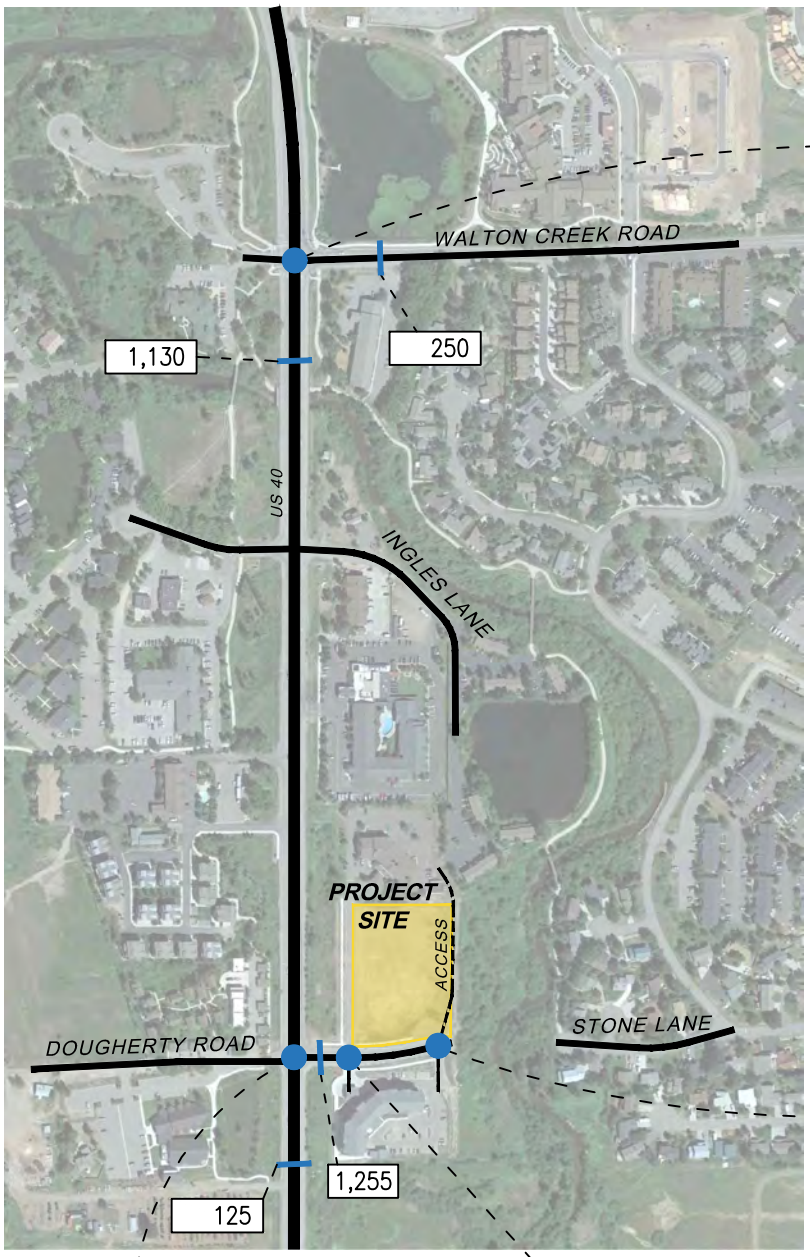
LANE CONFIGURATION

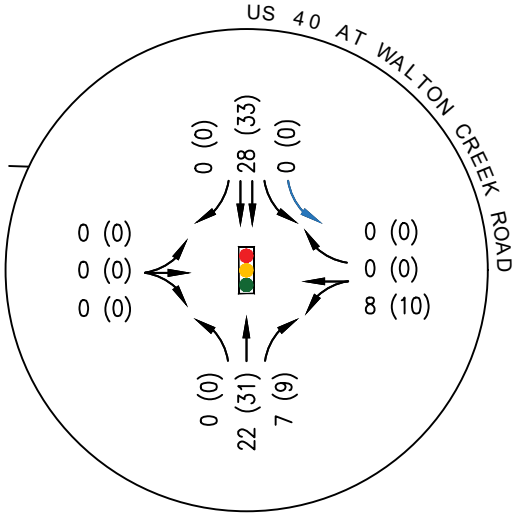
FOX TUTTLE TRANSPORTATION GROUP

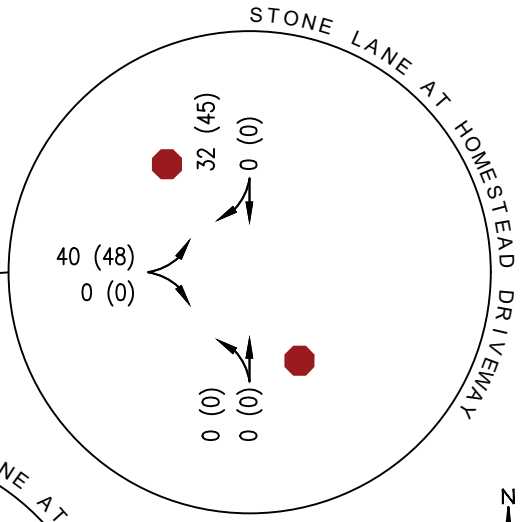
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

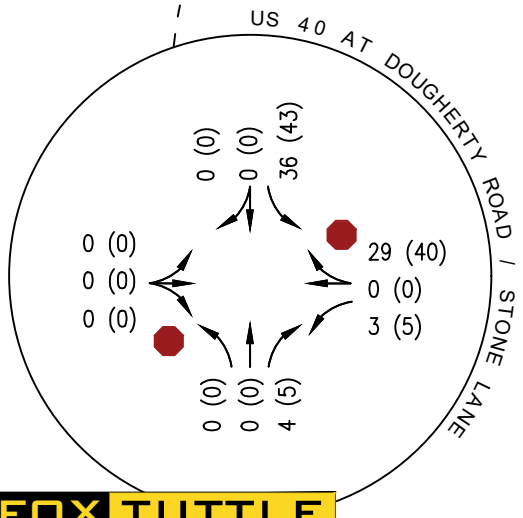
SITE TRIP DISTRIBUTION (LONG-TERM WITH STONE LANE)

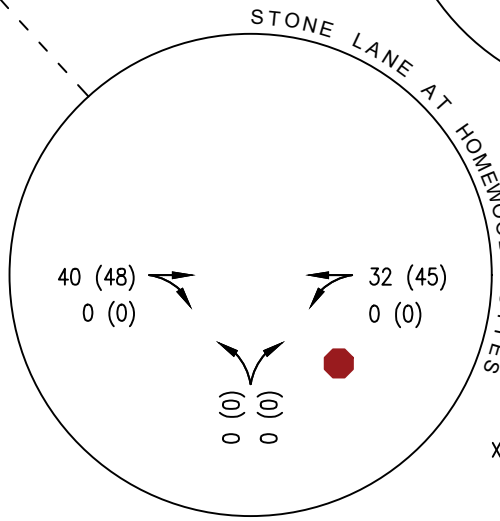
Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	6B











KEY

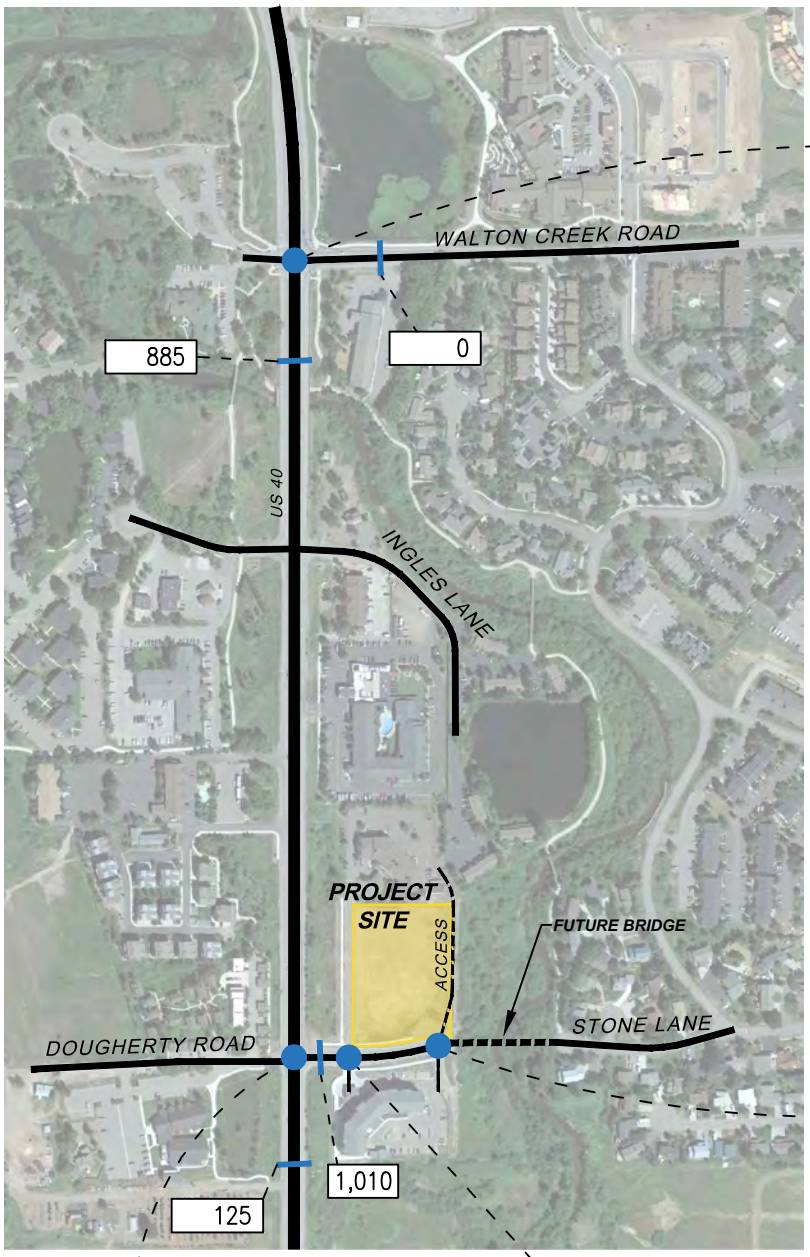
X,XXX	DAILY TRIP VOLUME
XXX (XXX)	AM (PM) PEAK HOUR TRIP VOLUME
→	LANE CONFIGURATION

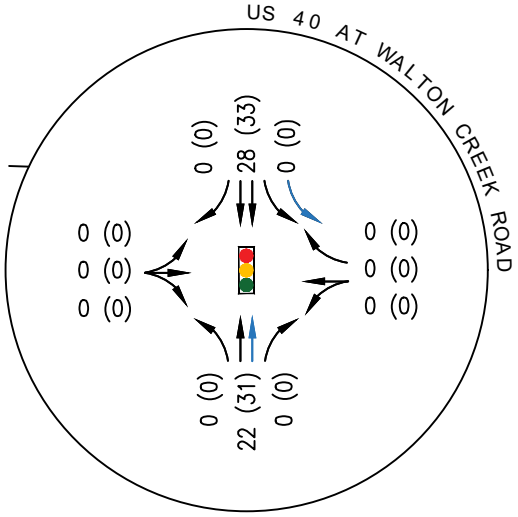
FOX TUTTLE
TRANSPORTATION GROUP

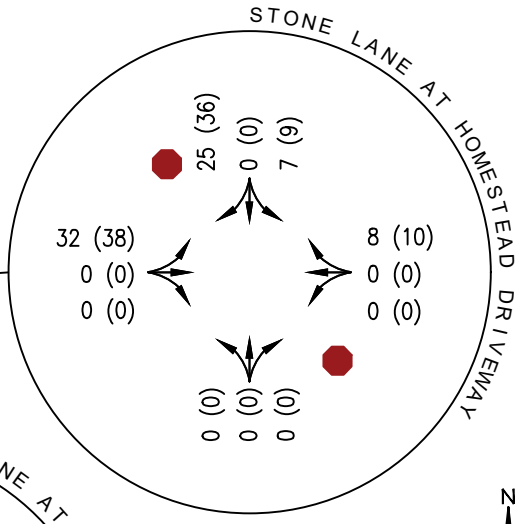
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

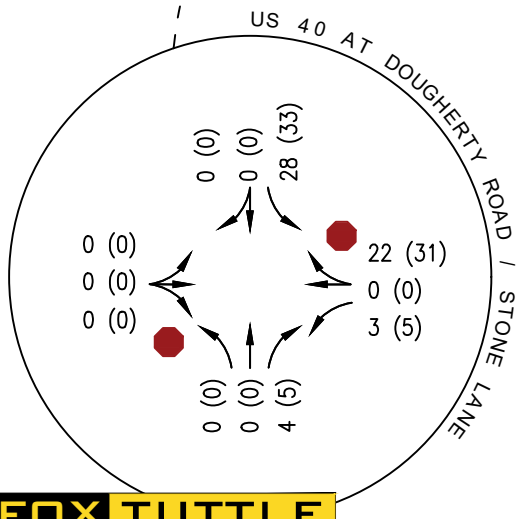
SITE-GENERATED TRIP VOLUMES (SHORT-TERM)

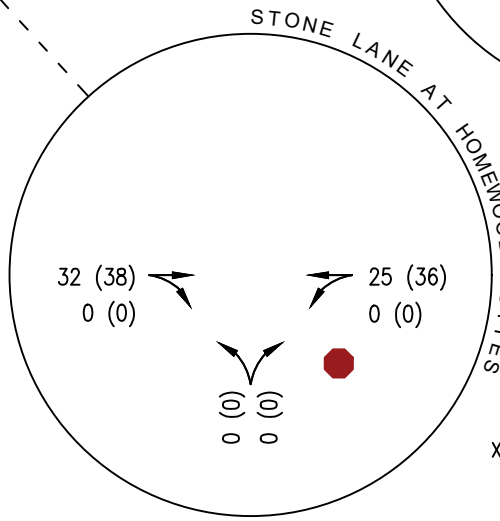
Project #	21073	Original Scale	NTS	Date	2/23/2023	Drawn by	CRS	Figure #	7A











N

KEY

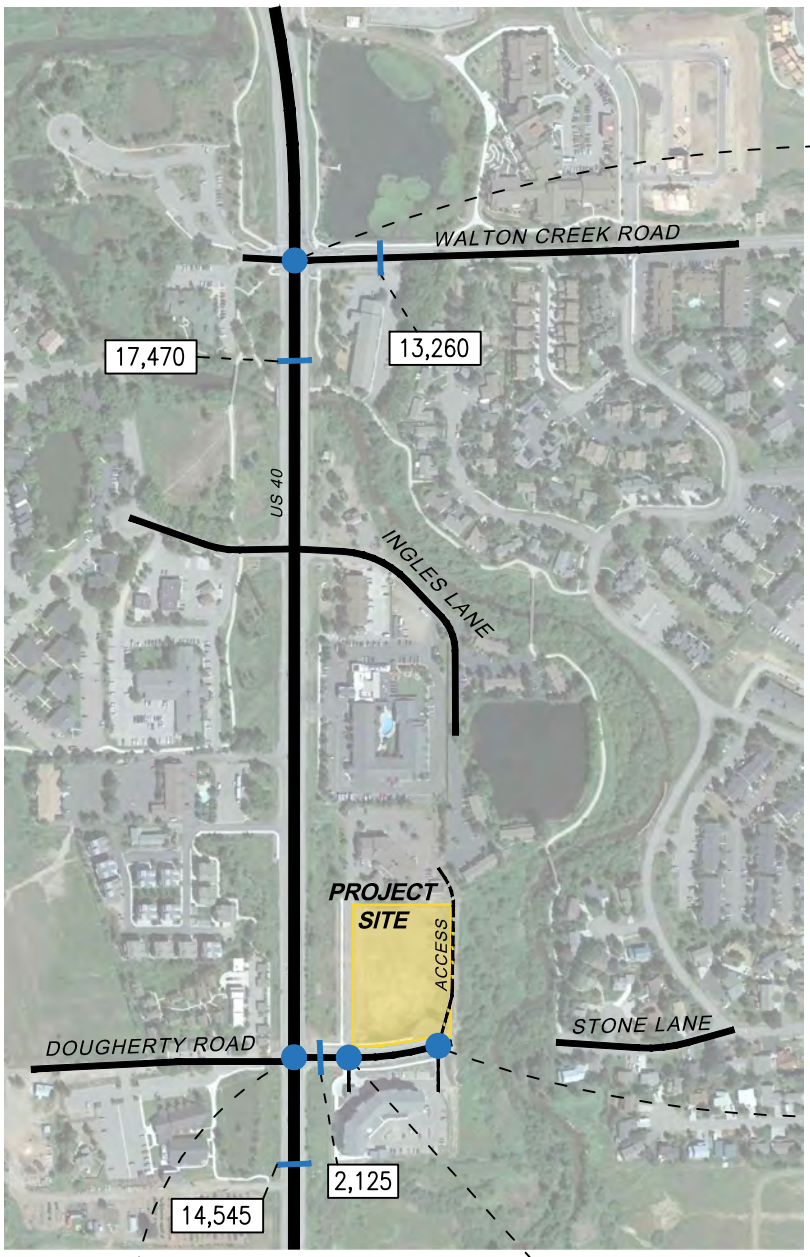
X,XXX	DAILY TRIP VOLUME
XXX (XXX)	AM (PM) PEAK HOUR TRIP VOLUME
→	LANE CONFIGURATION

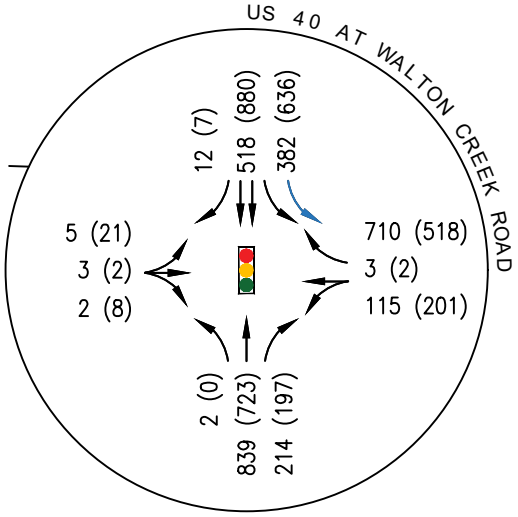
FOX TUTTLE TRANSPORTATION GROUP

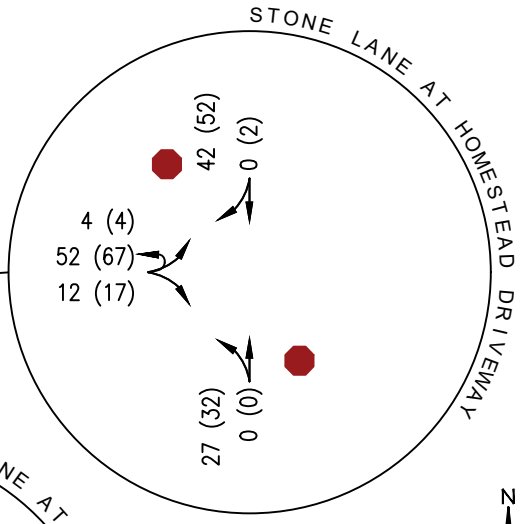
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

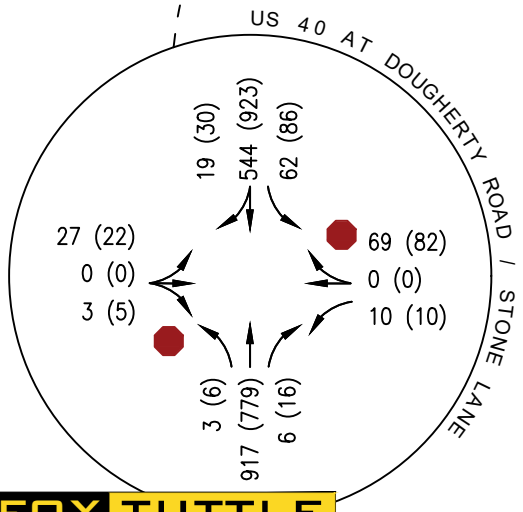
SITE-GENERATED TRIP VOLUMES (LONG-TERM WITH STONE LANE)

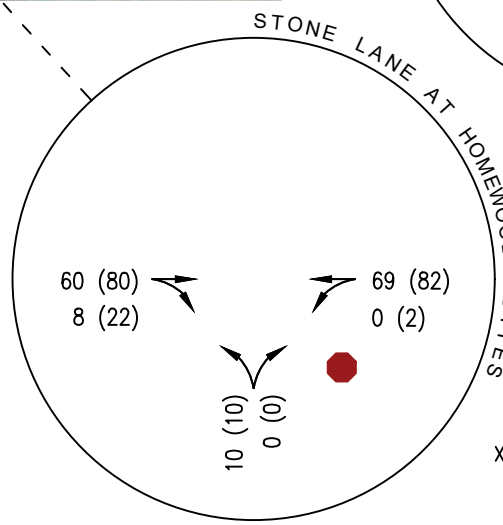
Project #	21073	Original Scale	NTS	Date	2/23/2023	Drawn by	CRS	Figure #	7B











KEY

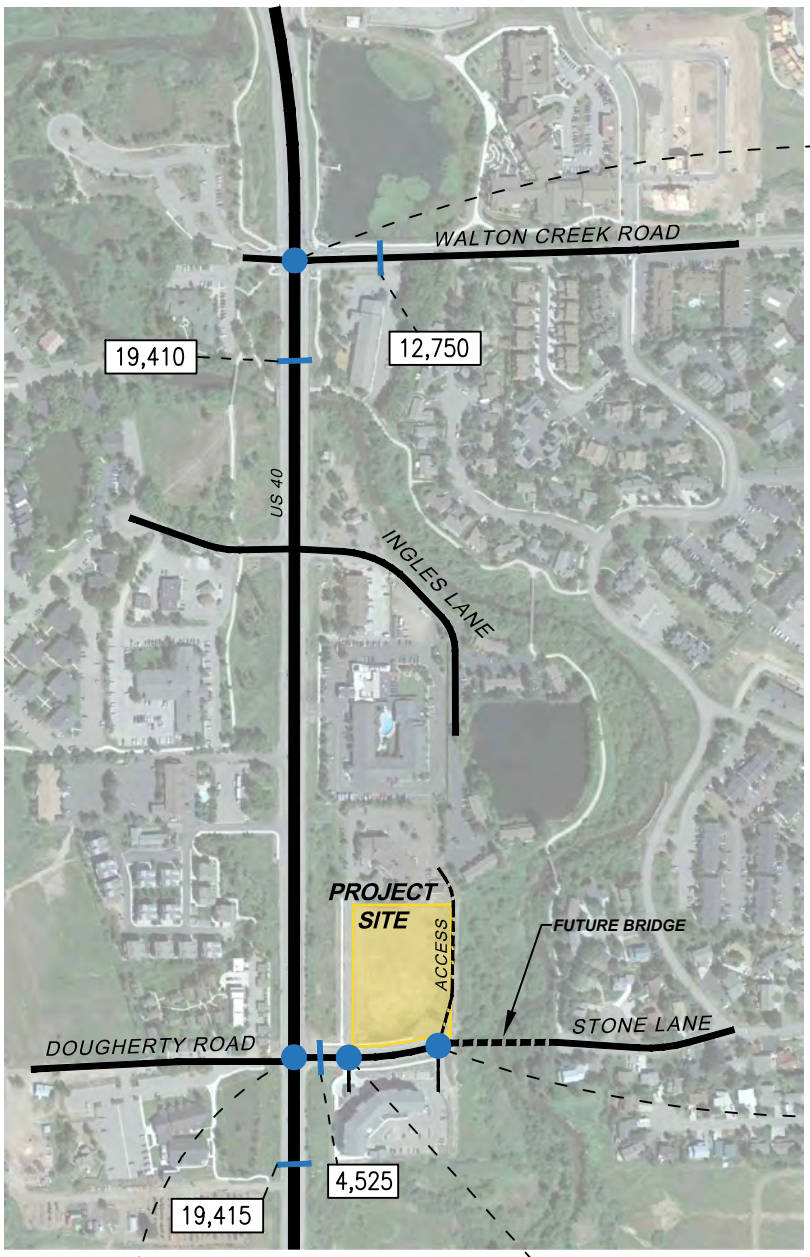
X,XXX	DAILY TRAFFIC VOLUME
XXX (XXX)	AM (PM) PEAK HOUR TRAFFIC VOLUME
→	LANE CONFIGURATION

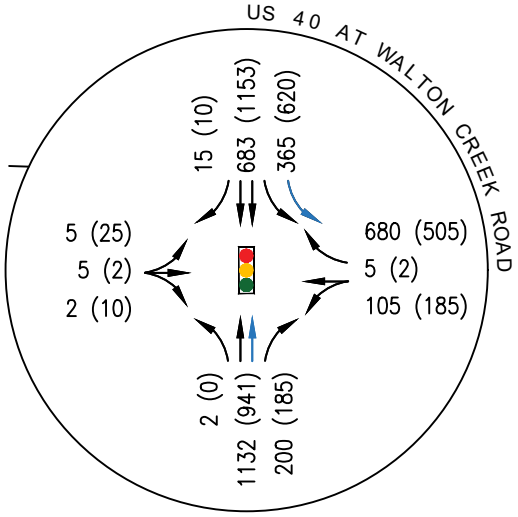
FOX TUTTLE TRANSPORTATION GROUP

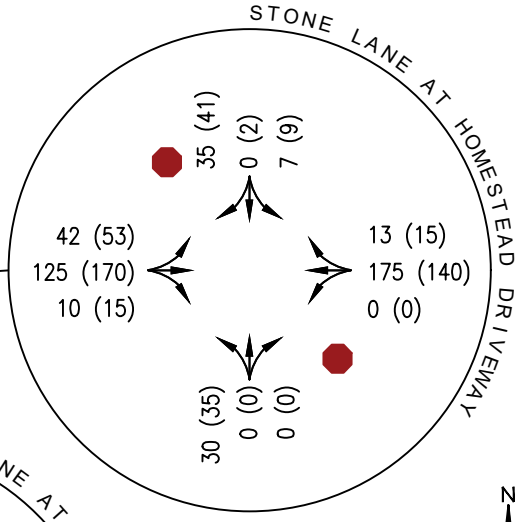
INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

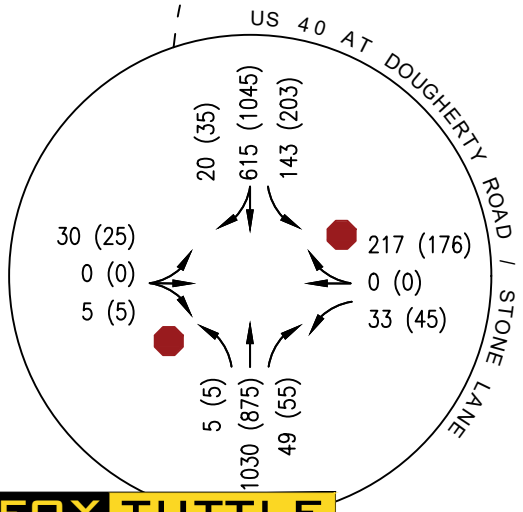
YEAR 2026 BACKGROUND + SITE-GENERATED TRAFFIC VOLUMES

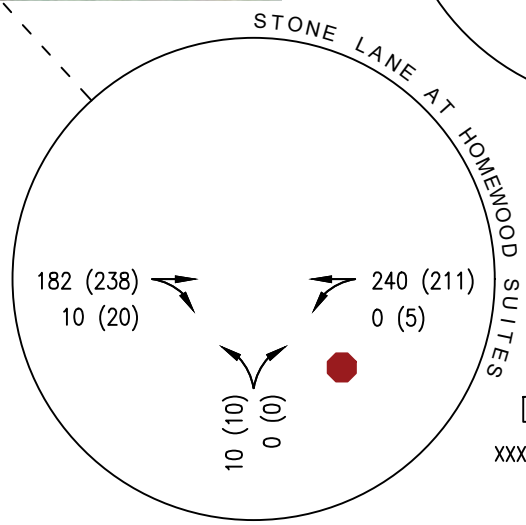
Project #	21073	Original Scale	NTS	Date	2/23/2023	Drawn by	CRS	Figure #	8











KEY

X,XXX	DAILY TRAFFIC VOLUME
XXX (XXX)	AM (PM) PEAK HOUR TRAFFIC VOLUME
→	LANE CONFIGURATION

FOX TUTTLE TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

YEAR 2042 BACKGROUND + SITE-GENERATED TRAFFIC VOLUMES

Project #	21073	Original Scale	NTS	Date	2/23/2023	Drawn by	CRS	Figure #	9

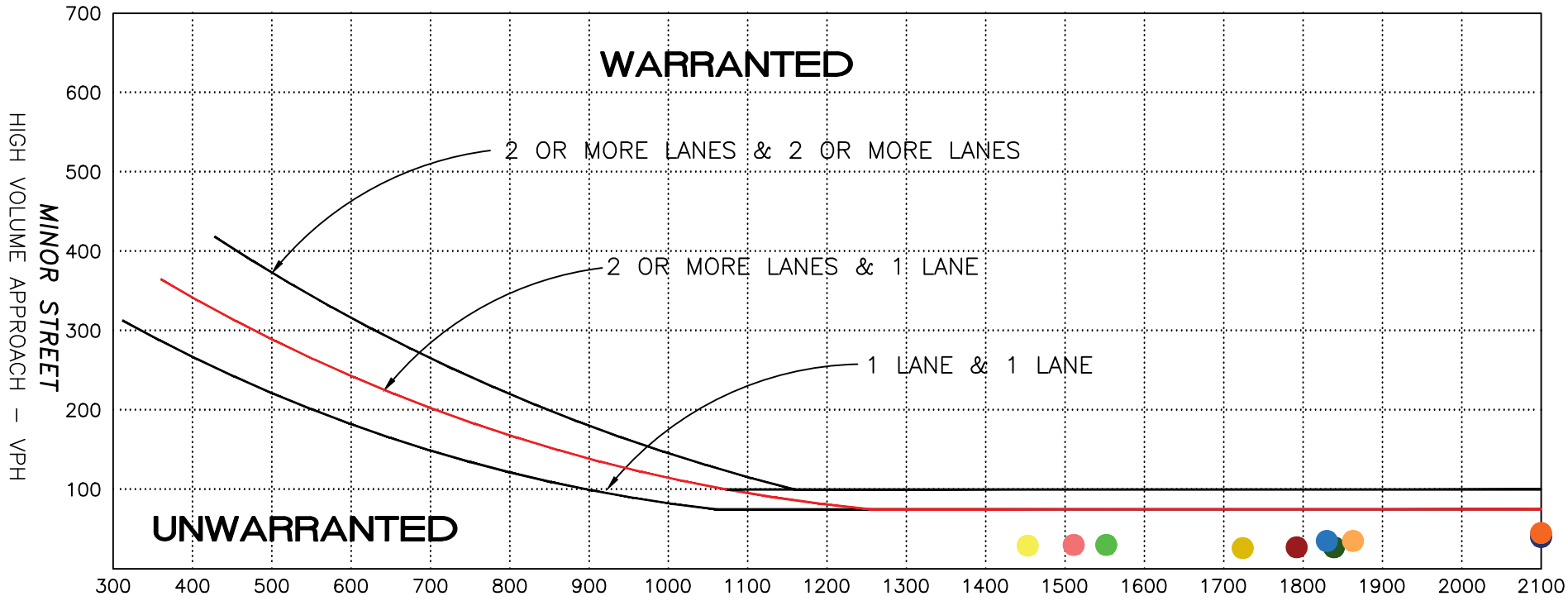
PEAK HOUR VOLUME WARRANT (70%)

APPLIED FOR PLANNING PURPOSES

ASSUMES 0% WESTBOUND RIGHT-TURNS

KEY FOR INTERSECTIONS

MET	AM	PM	
No	●	●	Year 2022 Existing
No	●	●	Year 2026 Background
No	●	●	Year 2026 Bkgrd + Project (without Stone Lane bridge)
No	●	●	Year 2042 Background
No	●	●	Year 2042 Bkgrd + Project (with Stone Lane bridge)



MAJOR STREET

TOTAL OF BOTH APPROACHES – VPH

NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FOX TUTTLE
TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

PEAK HOUR SIGNAL WARRANT - US 40 AT DOUGHTERY RD/STONE LANE

FT Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	10A

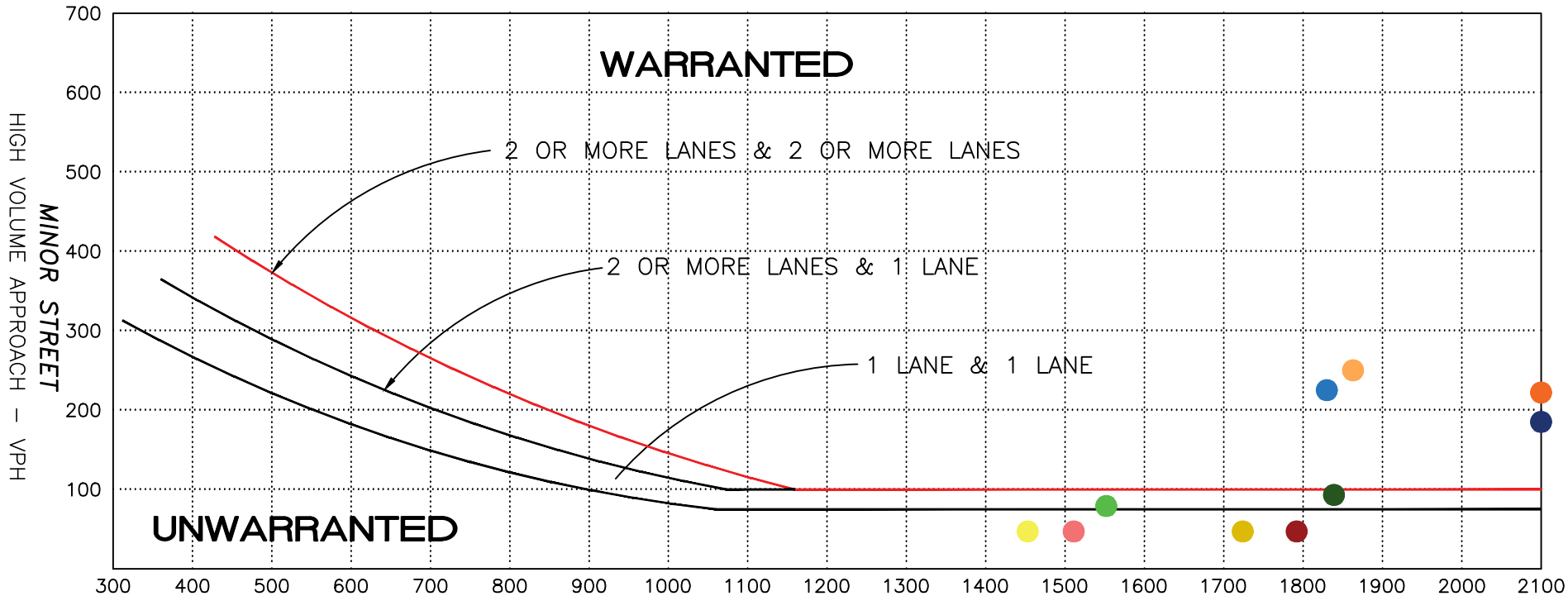
PEAK HOUR VOLUME WARRANT (70%)

APPLIED FOR PLANNING PURPOSES

ASSUMES 100% WESTBOUND RIGHT-TURNS

KEY FOR INTERSECTIONS

MET	AM	PM	
No	●	●	Year 2022 Existing
No	●	●	Year 2026 Background
No	●	●	Year 2026 Bkgrd + Project (without Stone Lane bridge)
Yes	●	●	Year 2042 Background
Yes	●	●	Year 2042 Bkgrd + Project (with Stone Lane bridge)



MAJOR STREET

TOTAL OF BOTH APPROACHES – VPH

NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FOX TUTTLE TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

PEAK HOUR SIGNAL WARRANT - US 40 AT DOUGHTERY RD/STONE LANE

FT Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	10B

Appendix:

Traffic Impact Study - Scope Approval Form

Level of Service Definitions

Existing Traffic Data

Historic Correspondence regarding Stone Lane Realignment

Workforce Housing Trip Rates

Intersection Capacity Worksheets

Signal Warrant Worksheets

Traffic Impact Study – Scope Approval Forms

Attachment A
TRAFFIC IMPACT STUDY – SCOPE APPROVAL FORM

Prior to starting a traffic impact study, a Scope Approval Form must be submitted for review and signed by the City Public Works Director. It shall be included in every traffic study submittal as Attachment A. This Scope Approval Form is for City requirements only. Consultants must contact CDOT to determine requirements related to access permits and work in CDOT right-of-way.

Project Information

Project Name:	Indian Meadows Lot 1 Hotel Development
Project Location:	US 40 and Dougherty Rd/Stone Lane (east side)
Developer Name/ Contact Number:	Four Points Surveying and Engineering Joe Wiedemier, PE 515-451-5377
Traffic Engineer Name/ Contact Number:	Fox Tuttle Transportation Group Cassie Slade, PE, PTOE 303-652-3571

Study Parameters

Type of Study Required:

☐ Trip Generation Letter ■ Long-term Traffic Study

☐ Short-term Traffic Study ☐ Trip Evaluation Letter

Traffic Counts

☐ Winter Zone ■ Summer Zone

■ Counts w/in last 2 years are available US 40/Dougherty - May 2021

■ New counts will be collected on January 2022 Factored to Summer

☐ Existing counts will be estimated based on:

■ Future counts will be estimated based on a 1% growth rate.

Peak Hours Analyzed

■ AM Peak Hour ■ PM peak hour ☐ Other _____

Trip Generation Rates

■ From ITE ☐ Other (cite)_____-

☐ No passby or mode split (typical)

■ Passby or mode split (describe)_6% trip reduction for internal and alt. mode_____

Trip Distribution – Attach sketch A-1 10% south US 40, 70% north US 40, 20% east Walton Creek (and future Stone Lane bridge)

Study Parameters

List of Study Area Intersections

1.	US 40 at Dougherty Road	
2.	US 40 at Walton Creek Rd	
3.	Site Accesses (including configuration	and layout)
4.		
5.		
6.		
7.		

Key Analysis items

- ■ Peak Hour LOS at study intersections
- ■ % Site contribution to signal at US 40 at Dougherty Rd/Stone Ln & Stone Ln Bridge
- ■ Auxiliary lane evaluation at 2 study area intersections #1,#2 listed above
- ■ Traffic signal warrants at US 40 at Dougherty Rd/Stone Ln
- ■ Queuing Analysis at All Study intersections
- ■ Other_ped, bike, and transit facility analysis CDOT Access Permit: Review and compare existing permit for inclusion in trips. Permit from Homestead development may have included these trips.

Approvals

Cassie Slade, Fox Tuttle	12/9/2021	303-652-3571
Prepared By: (insert traffic engineer name, firm)	Date	Phone

Approved By:

APPROVED
to be generally in
accordance with
CITY ENGINEERING
STANDARDS
12/22/2021

Ben Beall City Engineer	Date	Phone

COLORADO
Department of Transportation
Region 3

Transportation Impact Study Methodology Form

Prior to starting a traffic impact study, a Methodology Form must be submitted for review and signed by the Region 3 Access Engineer. It shall be included as part of the study.

CONTACT INFORMATION	
Consultant: Name:	Cassie Slade
Telephone:	303-652-3571
Email:	cassie.slade@foxtuttle.com
Developer/Owner Name:	Four Points Surveying and Engineering / 1780 Lincoln Redevelopment

PROJECT INFORMATION	
Project Name	Indian Meadows Lot 1 Hotel Development
Project Location	US 40 and Dougherty Rd/Stone Lane (east side)
Project Description *(Attached proposed site plan)*	Site Plan in-progress. Construct two new hotels between Homestead and Fairfield.
State Highway	US Highway 40
County	Routt
Mile Post	MP 135.5
Posted Speed Limit	40 mph

TIS ASSUMPTIONS			
Study Years	Current Year: 2021	Buildout Year: 2026	Long Term Year: 2042
Traffic Assessment Level *(Provide justification)*	Full Study		
Study Intersections	1. US 40 at Dougherty Rd/Stone Lane	6.	
	2. US 40 at Walton Creek Rd	7.	
	3. Site Accesses	8.	
	4.	9.	
	5.	10.	
Future Growth Rate	■ OTIS 1%	☐ Regional TDM	☐ Other
Seasonal Adjustment Factor	Adjusted for summer factor.		

COLORADO
Department of Transportation
Region 3

ASSUMPTIONS CONTINUED				
Project Trip Distribution *(State assumptions and attach sketch that shows individual movements.)*	10% south US 40, 70% north US 40, 20% east Walton Creek (and future Stone Lane bridge) (see attached)			
Trip Reduction Percentage	Internal Capture:	0%	Pass By:	0%
	Multi-Modal:	6% (per City)	Other:	
Study Time Periods *(Check all that apply)*	■ AM (7-9)	■ PM (4-6)	☐ Weekday	
	☐ SAT (Midday)	☐ Other		
Existing and Proposed ITE Trip Generation Land Use	#310 "hotel"			
Analysis Methods *(Check all that apply)*	■ Synchro or ☐ HCS *(isolated intersections only)*		☐ SimTraffic or ☐ Other *(closely spaced intersections or when known/expected queuing issue)*	
	■ Signal Warrants		■ Pedestrian/Transit/Bicycle	
	☐ Safety/Sight Distance		■ Queuing and Storage	
	☐ Other			
Notes and Other Assumptions	Evaluate the scenarios without and with the Stone Lane bridge.			
Crash Data	CDOT will perform a crash data analysis for the highway in the vicinity of the proposed access and provide to the consultant. As a part of the study consultant shall recommend mitigation measures for any identified safety issues.			
Simulation Input Files	Consultant to provide computer files used for analysis with a signed and sealed copy of the study.			

CDOT INTERNAL USE ONLY	
Review Comments Analysis of Intersection 2 is not required per CDOT standards. ☐ Revise and Resubmit	
Engineer Signature/Date	☑ Approved

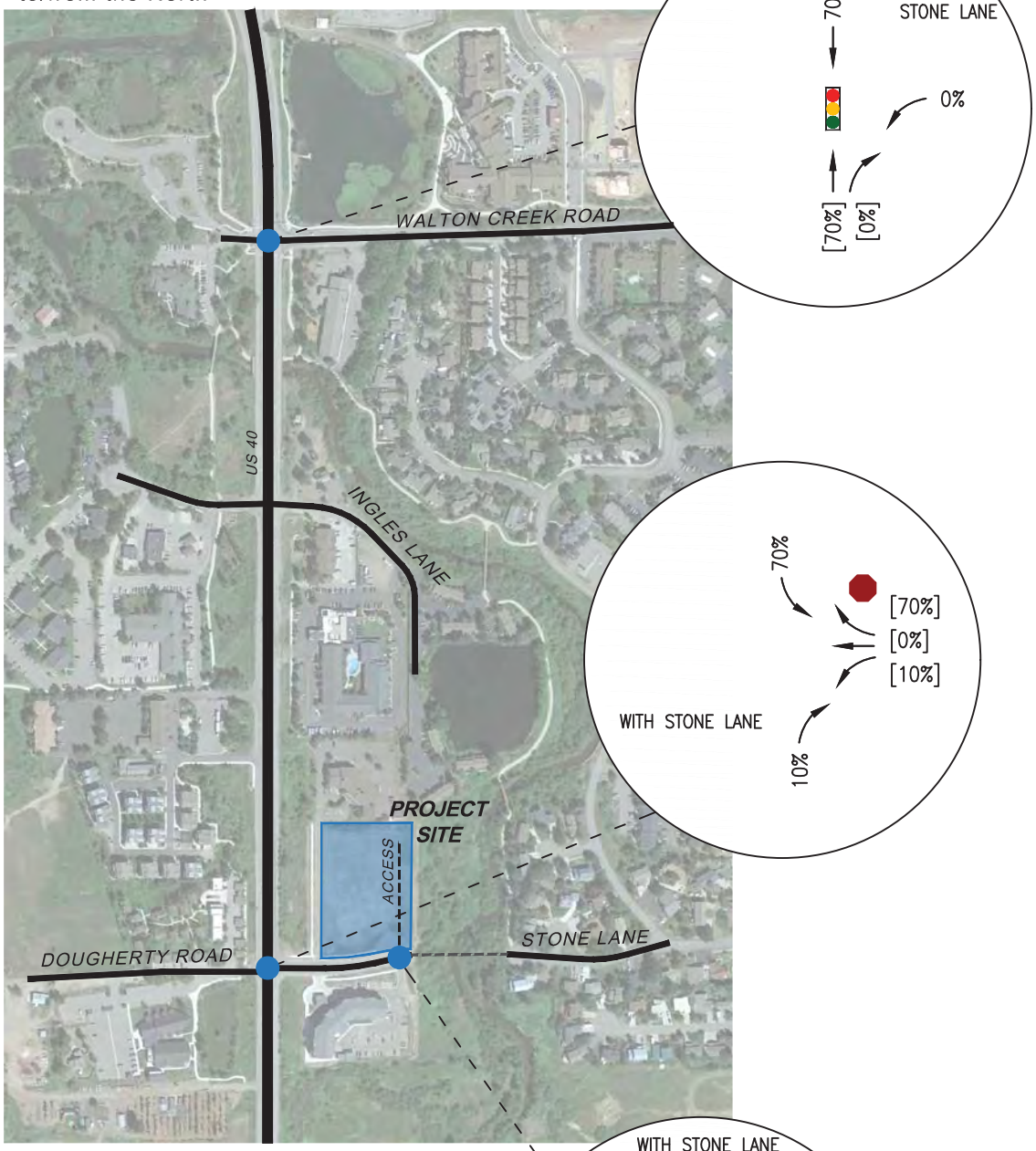
Indian Meadows Lot 1 Hotel Development - Steamboat Springs, CO
Traffic Scope Form

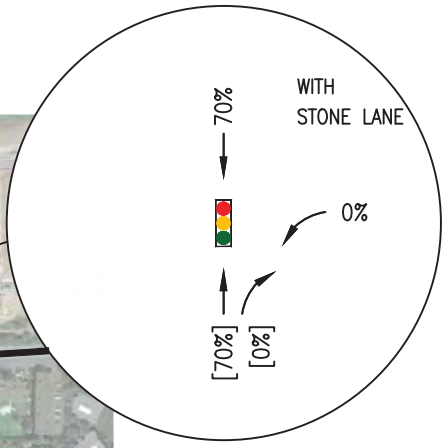
Table 1 - Trip Generation Summary

Land Use	Size	Unit	Non-Auto Factor	Average Daily Trips				AM Peak Hour Trips				PM Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
ITE 310: Hotel	152	rooms	0.90	7.99	1093	547	546	0.46	63	35	28	0.59	81	41	40

Source : ITE Trip Generation 11th Edition, 2021.

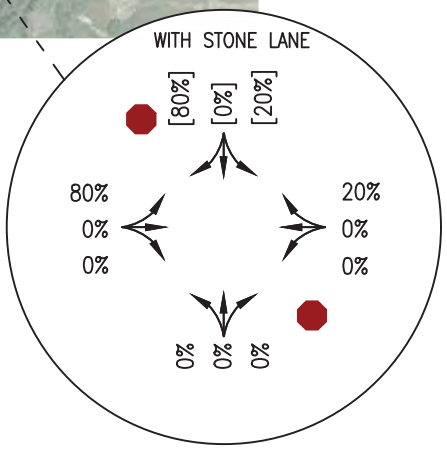
70%
To/From US 40
to/from the North





20%
To/From Walton
Creek/ Stone Lane
to/from the East

10%
To/From US 40
to/from the South



N

KEY

XXX [XXX] ENTERING [EXITING] TRIP PERCENTAGE

TRIP DIRECTION

FOX TUTTLE
TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

SITE TRIP DISTRIBUTION - WITH STONE LANE

Project #	21073	Original Scale	NTS	Date	12/9/2021	Drawn by	CRS	Figure #	A

Level of Service Definitions

LEVEL OF SERVICE DEFINITIONS

In rating roadway and intersection operating conditions with existing or future traffic volumes, "Levels of Service" (LOS) A through F are used, with LOS A indicating very good operation and LOS F indicating poor operation. Levels of service at signalized and unsignalized intersections are closely associated with vehicle delays experienced in seconds per vehicle. More complete level of service definitions and delay data for signal and stop sign controlled intersections are contained in the following table for reference.

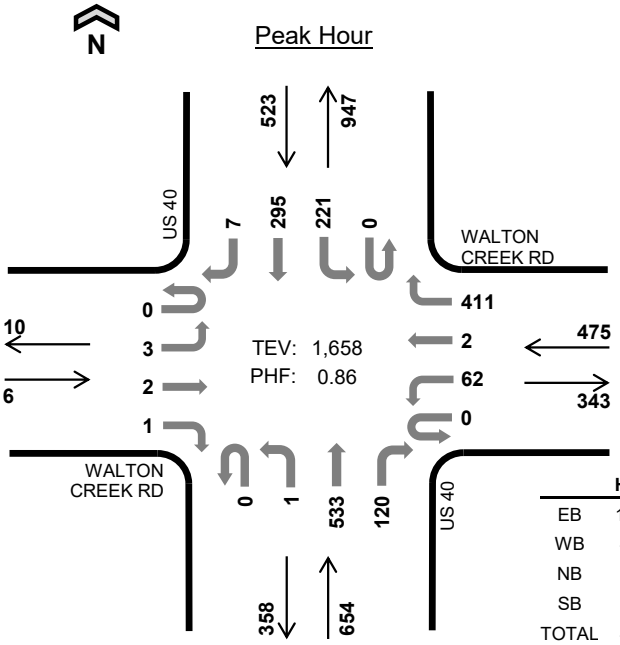
Level of Service Rating	Delay in seconds per vehicle *(a)*		Definition
	Signalized	Unsignalized	
A	0.0 to 10.0	0.0 to 10.0	Low vehicular traffic volumes; primarily free flow operations. Density is low and vehicles can freely maneuver within the traffic stream. Drivers are able to maintain their desired speeds with little or no delay.
B	10.1 to 20.0	10.1 to 15.0	Stable vehicular traffic volume flow with potential for some restriction of operating speeds due to traffic conditions. Vehicle maneuvering is only slightly restricted. The stopped delays are not bothersome and drivers are not subject to appreciable tension.
C	20.1 to 35.0	15.1 to 25.0	Stable traffic operations, however the ability for vehicles to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer vehicle queues cause delays along the corridor.
D	35.1 to 55.0	25.1 to 35.0	Approaching unstable vehicular traffic flow where small increases in volume could cause substantial delays. Most drivers are restricted in ability to maneuver and selection of travel speeds due to congestion. Driver comfort and convenience are low, but tolerable.
E	55.1 to 80.0	35.1 to 50.0	Traffic operations characterized by significant approach delays and average travel speeds of one-half to one-third the free flow speed. Vehicular flow is unstable and there is potential for stoppages of brief duration. High signal density, extensive vehicle queuing, or corridor signal progression/timing are the typical causes of vehicle delays at signalized corridors.
F	> 80.0	> 50.0	Forced vehicular traffic flow and operations with high approach delays at critical intersections. Vehicle speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.

(a) Delay ranges based on Highway Capacity Manual (6th Edition, 2016) criteria.

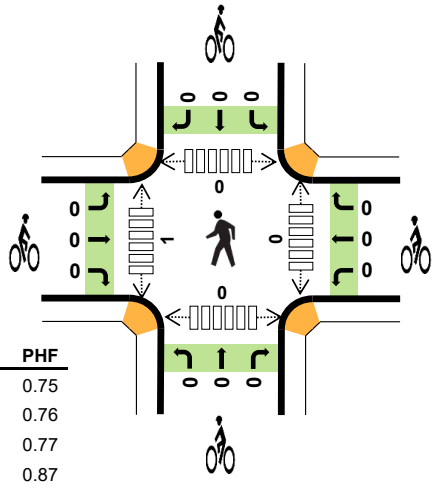
Existing Traffic Data

US 40
WALTON CREEK RD

Date: 02/17/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	16.7%	0.75
WB	4.2%	0.76
NB	3.7%	0.77
SB	5.5%	0.87
TOTAL	4.5%	0.86



Two-Hour Count Summaries

Interval Start	WALTON CREEK RD Eastbound				WALTON CREEK RD Westbound				US 40 Northbound				US 40 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	12	1	68	0	0	64	13	0	26	39	1	224	0
7:15 AM	0	2	0	0	0	14	0	44	0	0	94	17	0	32	47	1	251	0
7:30 AM	0	0	0	1	0	14	2	84	0	1	124	22	0	29	54	1	332	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**10**	**0**	**147**	**0**	**1**	**181**	**29**	**0**	**46**	**63**	**2**	**480**	1,287
8:00 AM	**0**	**0**	**1**	**1**	**0**	**20**	**0**	**123**	**0**	**0**	**158**	**32**	**0**	**43**	**72**	**2**	**452**	1,515
8:15 AM	**0**	**1**	**0**	**0**	**0**	**17**	**1**	**77**	**0**	**0**	**110**	**30**	**0**	**56**	**85**	**3**	**380**	1,644
8:30 AM	**0**	**2**	**0**	**0**	**0**	**15**	**1**	**64**	**0**	**0**	**84**	**29**	**0**	**76**	**75**	**0**	**346**	**1,658**
8:45 AM	0	1	1	1	0	16	0	77	0	0	95	26	0	39	70	3	329	1,507
Count Total	0	6	3	3	0	118	5	684	0	2	910	198	0	347	505	13	2,794	0
Peak Hour All	**0**	**3**	**2**	**1**	**0**	**62**	**2**	**411**	**0**	**1**	**533**	**120**	**0**	**221**	**295**	**7**	**1,658**	**0**
Peak Hour HV	**0**	**1**	**0**	**0**	**0**	**8**	**1**	**11**	**0**	**0**	**12**	**12**	**0**	**8**	**21**	**0**	**74**	**0**
Peak Hour HV%	**-**	**33%**	**0%**	**0%**	**-**	**13%**	**50%**	**3%**	**-**	**0%**	**2%**	**10%**	**-**	**4%**	**7%**	**0%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	5	2	5	*12*	0	0	0	0	*0*	2	0	0	0	*2*
7:15 AM	0	0	9	2	*11*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	3	5	9	*17*	0	0	1	0	*1*	0	0	0	0	*0*
7:45 AM	**0**	**4**	**7**	**9**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**7**	**9**	**6**	***22***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**5**	**2**	**8**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**1**	**4**	**6**	**6**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
8:45 AM	0	3	8	5	*16*	0	1	0	0	*1*	0	0	0	0	*0*
Count Total	1	31	48	50	*130*	0	1	1	0	*2*	2	1	0	0	*3*
Peak Hour	**1**	**20**	**24**	**29**	***74***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	WALTON CREEK RD				WALTON CREEK RD				US 40				US 40				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	4	0	1	0	0	2	0	0	2	3	0	12	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	7	2	0	0	2	0	11	0
7:30 AM	0	0	0	0	0	2	0	1	0	0	2	3	0	2	7	0	17	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**6**	**1**	**0**	**3**	**6**	**0**	**20**	60
8:00 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**5**	**0**	**0**	**3**	**6**	**0**	**1**	**5**	**0**	**22**	70
8:15 AM	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**1**	**0**	**0**	**0**	**2**	**0**	**1**	**7**	**0**	**15**	74
8:30 AM	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**3**	**3**	**0**	**3**	**3**	**0**	**17**	**74**
8:45 AM	0	0	0	0	0	1	0	2	0	0	4	4	0	0	5	0	16	70
Count Total	0	1	0	0	0	15	1	15	0	0	27	21	0	12	38	0	130	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**8**	**1**	**11**	**0**	**0**	**12**	**12**	**0**	**8**	**21**	**0**	**74**	**0**

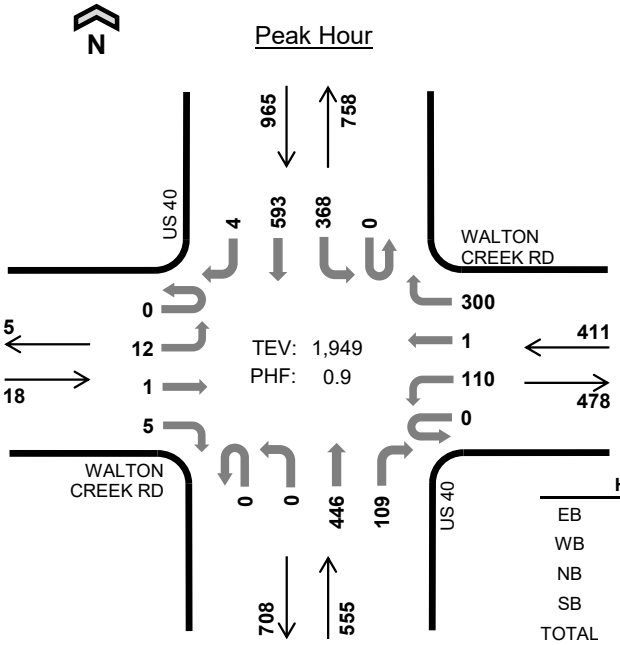
Two-Hour Count Summaries - Bikes

Interval Start	WALTON CREEK RD			WALTON CREEK RD			US 40			US 40			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Count Total	0	0	0	0	1	0	0	0	1	0	0	0	2	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

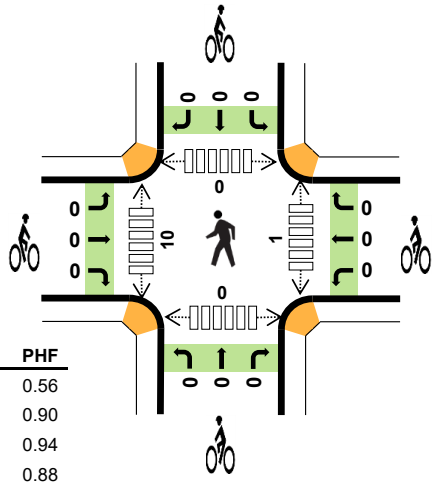
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

US 40
WALTON CREEK RD

Date: 02/17/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.0%	0.56
WB	2.7%	0.90
NB	2.2%	0.94
SB	2.7%	0.88
TOTAL	2.5%	0.90



Two-Hour Count Summaries

Interval Start	WALTON CREEK RD Eastbound				WALTON CREEK RD Westbound				US 40 Northbound				US 40 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	2	2	0	28	0	81	0	1	95	34	0	85	134	3	467	0
4:15 PM	0	1	0	0	0	19	2	87	0	1	111	26	0	69	148	2	466	0
4:30 PM	**0**	**3**	**0**	**2**	**0**	**27**	**1**	**72**	**0**	**0**	**97**	**33**	**0**	**87**	**149**	**2**	**473**	0
4:45 PM	**0**	**3**	**0**	**0**	**0**	**24**	**0**	**70**	**0**	**0**	**115**	**28**	**0**	**82**	**131**	**0**	**453**	1,859
5:00 PM	**0**	**5**	**1**	**2**	**0**	**20**	**0**	**94**	**0**	**0**	**128**	**19**	**0**	**100**	**175**	**0**	**544**	1,936
5:15 PM	**0**	**1**	**0**	**1**	**0**	**39**	**0**	**64**	**0**	**0**	**106**	**29**	**0**	**99**	**138**	**2**	**479**	**1,949**
5:30 PM	0	3	1	1	0	16	3	75	0	1	94	17	0	109	101	0	421	1,897
5:45 PM	0	2	3	0	0	29	0	84	0	0	74	29	0	105	128	2	456	1,900
Count Total	0	20	7	8	0	202	6	627	0	3	820	215	0	736	1,104	11	3,759	0
Peak Hour All	**0**	**12**	**1**	**5**	**0**	**110**	**1**	**300**	**0**	**0**	**446**	**109**	**0**	**368**	**593**	**4**	**1,949**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**6**	**0**	**0**	**7**	**5**	**0**	**3**	**23**	**0**	**49**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**5%**	**0%**	**2%**	**-**	**-**	**2%**	**5%**	**-**	**1%**	**4%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	6	4	7	*17*	0	1	0	0	*1*	2	0	0	0	*2*
4:15 PM	0	4	3	6	*13*	0	0	0	0	*0*	2	0	0	0	*2*
4:30 PM	**0**	**3**	**3**	**7**	***13***	**0**	**0**	**0**	**0**	***0***	**1**	**5**	**0**	**0**	*6*
4:45 PM	**0**	**4**	**3**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**1**	**5**	**9**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**0**	**3**	**1**	**9**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**0**	**0**	***4***
5:30 PM	0	4	3	2	*9*	0	0	0	0	*0*	0	5	1	0	*6*
5:45 PM	0	3	6	7	*16*	0	0	0	0	*0*	1	1	0	0	*2*
Count Total	0	28	28	48	*104*	0	1	0	0	*1*	6	16	1	0	*23*
Peak Hour	**0**	**11**	**12**	**26**	***49***	**0**	**0**	**0**	**0**	***0***	**1**	**10**	**0**	**0**	***11***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	WALTON CREEK RD				WALTON CREEK RD				US 40				US 40				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	3	0	3	0	0	2	2	0	0	7	0	17	0
4:15 PM	0	0	0	0	0	0	0	4	0	0	1	2	0	2	4	0	13	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**1**	**2**	**0**	**1**	**6**	**0**	**13**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**8**	51
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**2**	**0**	**0**	**9**	**0**	**15**	49
5:15 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	**7**	**0**	**13**	**49**
5:30 PM	0	0	0	0	0	1	0	3	0	0	1	2	0	0	2	0	9	45
5:45 PM	0	0	0	0	0	2	0	1	0	0	1	5	0	4	3	0	16	53
Count Total	0	0	0	0	0	11	0	17	0	0	12	16	0	9	39	0	104	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**6**	**0**	**0**	**7**	**5**	**0**	**3**	**23**	**0**	**49**	**0**

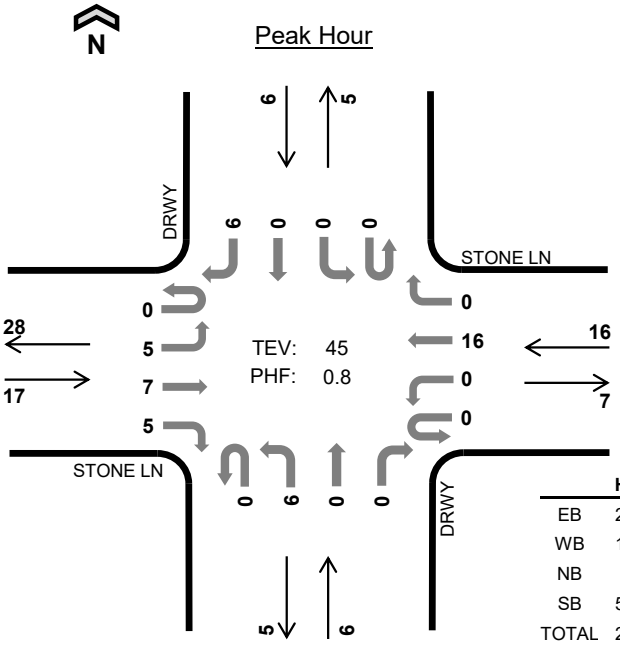
Two-Hour Count Summaries - Bikes

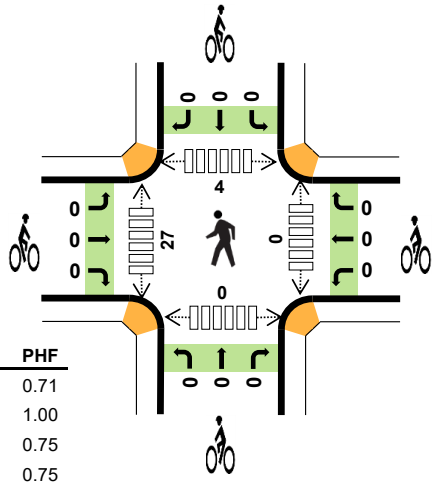
Interval Start	WALTON CREEK RD			WALTON CREEK RD			US 40			US 40			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

DRWY
STONE LN

Date: 02/17/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	29.4%	0.71
WB	18.8%	1.00
NB	0.0%	0.75
SB	50.0%	0.75
TOTAL	24.4%	0.80

Two-Hour Count Summaries

Interval Start	STONE LN Eastbound				STONE LN Westbound				DRWY Northbound				DRWY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	3	0	0	2	0	0	0	0	0	1	7	0
7:15 AM	0	2	1	1	0	0	2	0	0	0	0	0	0	0	0	2	8	0
7:30 AM	0	0	3	0	0	0	2	0	0	1	0	0	0	0	0	0	6	0
7:45 AM	**0**	**1**	**2**	**0**	**0**	**0**	**4**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**11**	32
8:00 AM	**0**	**2**	**2**	**2**	**0**	**0**	**4**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	39
8:15 AM	**0**	**1**	**2**	**1**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**10**	41
8:30 AM	**0**	**1**	**1**	**2**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**10**	**45**
8:45 AM	0	1	3	0	0	0	2	0	0	2	0	0	0	0	0	0	8	42
Count Total	0	8	15	6	0	0	25	0	0	11	0	0	0	0	0	9	74	0
Peak Hour All	**0**	**5**	**7**	**5**	**0**	**0**	**16**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**6**	**45**	**0**
Peak Hour HV	**0**	**3**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**11**	**0**
Peak Hour HV%	**-**	**60%**	**29%**	**0%**	**-**	**-**	**19%**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**50%**	**24%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	1	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	2	0	0	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	1	1	0	0	*2*	0	0	0	0	*0*	0	5	0	0	*5*
7:45 AM	**1**	**1**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**4**	**4**	**0**	*8*
8:15 AM	**2**	**1**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**13**	**0**	**0**	*13*
8:30 AM	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**10**	**0**	**0**	***10***
8:45 AM	2	1	0	0	*3*	0	0	0	0	*0*	0	2	0	0	*2*
Count Total	11	6	0	4	*21*	0	0	0	0	*0*	0	34	4	0	*38*
Peak Hour	**5**	**3**	**0**	**3**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**27**	**4**	**0**	***31***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	STONE LN Eastbound				STONE LN Westbound				DRWY Northbound				DRWY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0
7:30 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	10
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	10
8:15 AM	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	11
8:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**11**
8:45 AM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	11
Count Total	0	5	6	0	0	0	6	0	0	0	0	0	0	0	0	4	21	0
Peak Hour	**0**	**3**	**2**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**11**	**0**

Two-Hour Count Summaries - Bikes

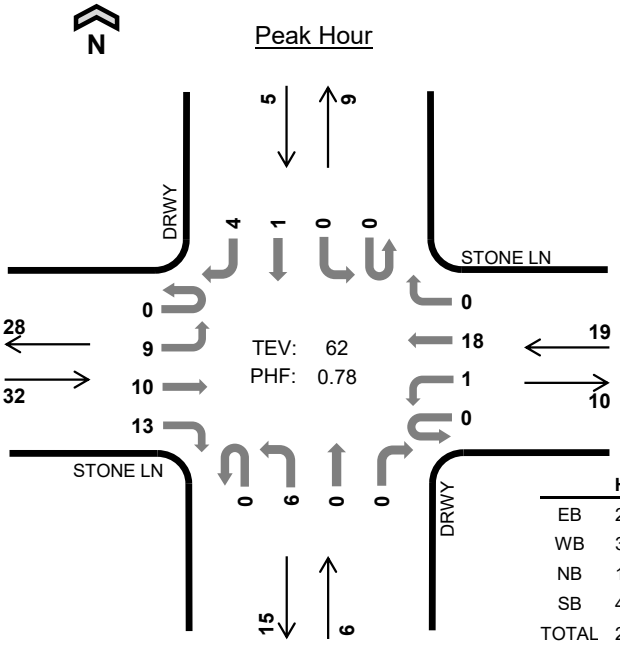
Interval Start	STONE LN Eastbound			STONE LN Westbound			DRWY Northbound			DRWY Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

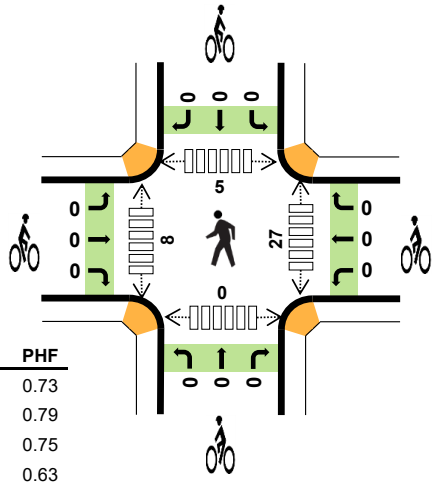
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

DRWY
STONE LN

Date: 02/17/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	21.9%	0.73
WB	31.6%	0.79
NB	16.7%	0.75
SB	40.0%	0.63
TOTAL	25.8%	0.78

Two-Hour Count Summaries

Interval Start	STONE LN Eastbound				STONE LN Westbound				DRWY Northbound				DRWY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	4	0	0	5	0	0	1	1	0	0	0	0	0	13	0
4:15 PM	1	1	2	2	0	0	3	0	0	2	0	0	0	0	1	0	12	0
4:30 PM	**0**	**3**	**5**	**3**	**0**	**0**	**6**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**20**	0
4:45 PM	**0**	**1**	**2**	**3**	**0**	**0**	**5**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**14**	59
5:00 PM	**0**	**5**	**1**	**4**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	60
5:15 PM	**0**	**0**	**2**	**3**	**0**	**1**	**5**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**14**	**62**
5:30 PM	0	0	2	5	0	0	4	0	0	1	0	0	0	0	0	0	12	54
5:45 PM	0	1	2	3	0	0	6	0	0	2	0	0	0	0	0	1	15	55
Count Total	1	11	18	27	0	1	36	0	0	12	1	0	0	0	2	5	114	0
Peak Hour All	**0**	**9**	**10**	**13**	**0**	**1**	**18**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**1**	**4**	**62**	**0**
Peak Hour HV	**0**	**2**	**4**	**1**	**0**	**0**	**6**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**16**	**0**
Peak Hour HV%	**-**	**22%**	**40%**	**8%**	**-**	**0%**	**33%**	**-**	**-**	**17%**	**-**	**-**	**-**	**-**	**0%**	**50%**	**26%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	1	0	0	*3*	0	0	0	0	*0*	16	1	7	0	*24*
4:15 PM	0	0	1	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
4:30 PM	**2**	**3**	**0**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**8**	**3**	**0**	**0**	*11*
4:45 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**8**	**0**	**5**	**0**	*13*
5:00 PM	**2**	**1**	**0**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**2**	**1**	**1**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**11**	**5**	**0**	**0**	***16***
5:30 PM	2	1	0	0	*3*	0	0	0	0	*0*	2	0	0	0	*2*
5:45 PM	1	1	1	0	*3*	0	0	0	0	*0*	3	0	0	0	*3*
Count Total	12	9	3	2	*26*	0	0	0	0	*0*	48	10	12	0	*70*
Peak Hour	**7**	**6**	**1**	**2**	***16***	**0**	**0**	**0**	**0**	***0***	**27**	**8**	**5**	**0**	***40***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	STONE LN Eastbound				STONE LN Westbound				DRWY Northbound				DRWY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:30 PM	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	12
5:00 PM	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	13
5:15 PM	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**16**
5:30 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	13
5:45 PM	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	3	14
Count Total	0	2	7	3	0	0	9	0	0	3	0	0	0	0	0	2	26	0
Peak Hour	**0**	**2**	**4**	**1**	**0**	**0**	**6**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**16**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	STONE LN Eastbound			STONE LN Westbound			DRWY Northbound			DRWY Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Ridgeview Data Collection

Steamboat Springs, CO

AM Peak
US-40 and Dougherty Rd

File Name : US 40 and Dougherty AM
Site Code : IPO 8
Start Date : 5/26/2021
Page No : 1

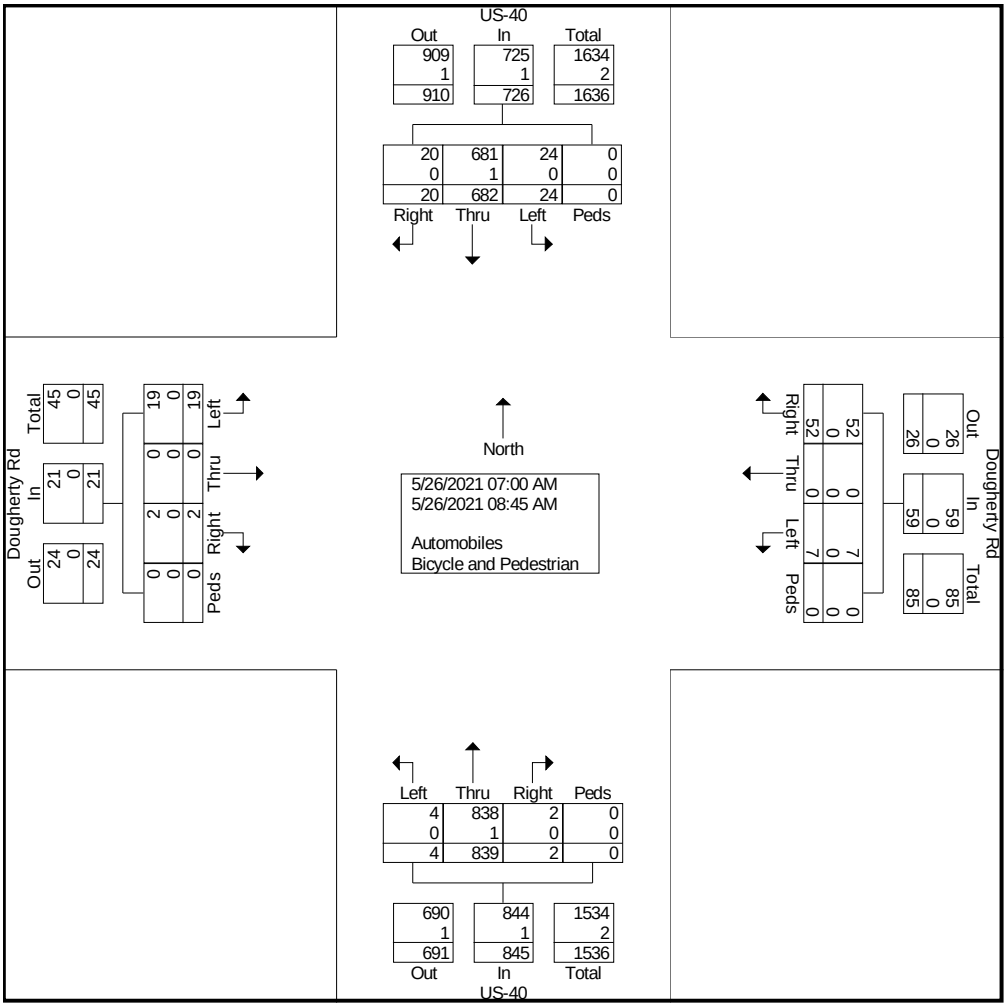
Groups Printed- Automobiles - Bicycle and Pedestrian

	Dougherty Rd Eastbound					Dougherty Rd Westbound					US-40 Northbound					US-40 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	10	0	11	0	60	0	0	60	3	61	0	0	64	135
07:15 AM	0	0	0	0	0	3	0	10	0	13	0	88	1	0	89	2	70	1	0	73	175
07:30 AM	6	0	1	0	7	2	0	4	0	6	0	129	0	0	129	1	77	2	0	80	222
07:45 AM	4	0	1	0	5	1	0	9	0	10	0	168	0	0	168	6	84	2	0	92	275
Total	10	0	2	0	12	7	0	33	0	40	0	445	1	0	446	12	292	5	0	309	807
08:00 AM	3	0	0	0	3	0	0	5	0	5	1	111	0	0	112	3	88	3	0	94	214
08:15 AM	4	0	0	0	4	0	0	5	0	5	1	96	0	0	97	6	93	5	0	104	210
08:30 AM	1	0	0	0	1	0	0	8	0	8	0	89	0	0	89	2	96	2	0	100	198
08:45 AM	1	0	0	0	1	0	0	1	0	1	2	98	1	0	101	1	113	5	0	119	222
Total	9	0	0	0	9	0	0	19	0	19	4	394	1	0	399	12	390	15	0	417	844
Grand Total	19	0	2	0	21	7	0	52	0	59	4	839	2	0	845	24	682	20	0	726	1651
Apprch %	90.5	0	9.5	0		11.9	0	88.1	0		0.5	99.3	0.2	0		3.3	93.9	2.8	0		
Total %	1.2	0	0.1	0	1.3	0.4	0	3.1	0	3.6	0.2	50.8	0.1	0	51.2	1.5	41.3	1.2	0	44	
Automobiles	19	0	2	0	21	7	0	52	0	59	4	838	2	0	844	24	681	20	0	725	1649
% Automobiles	100	0	100	0	100	100	0	100	0	100	100	99.9	100	0	99.9	100	99.9	100	0	99.9	99.9
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0.1	0	0	0.1	0.1

Steamboat Springs, CO

AM Peak
US-40 and Dougherty Rd

File Name : US 40 and Dougherty AM
Site Code : IPO 8
Start Date : 5/26/2021
Page No : 2

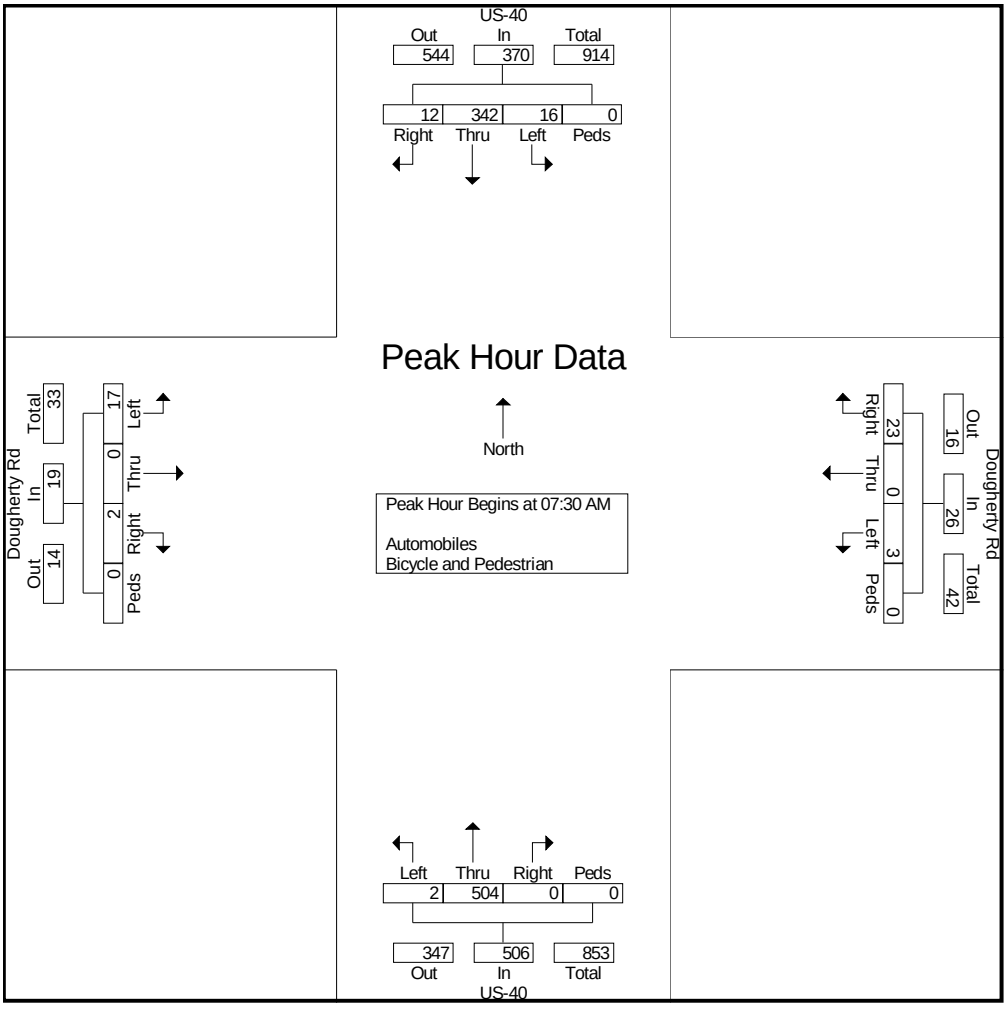


Steamboat Springs, CO

AM Peak
US-40 and Dougherty Rd

File Name : US 40 and Dougherty AM
Site Code : IPO 8
Start Date : 5/26/2021
Page No : 3

	Dougherty Rd Eastbound					Dougherty Rd Westbound					US-40 Northbound					US-40 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**6**	0	**1**	0	**7**	**2**	0	4	0	6	0	129	0	0	129	1	77	2	0	80	222
07:45 AM	4	0	1	0	5	1	0	**9**	0	**10**	0	**168**	0	0	**168**	**6**	84	2	0	92	**275**
08:00 AM	3	0	0	0	3	0	0	5	0	5	**1**	111	0	0	112	3	88	3	0	94	214
08:15 AM	4	0	0	0	4	0	0	5	0	5	1	96	0	0	97	6	**93**	**5**	0	**104**	210
Total Volume	17	0	2	0	19	3	0	23	0	26	2	504	0	0	506	16	342	12	0	370	921
% App. Total	89.5	0	10.5	0		11.5	0	88.5	0		0.4	99.6	0	0		4.3	92.4	3.2	0		
PHF	.708	.000	.500	.000	.679	.375	.000	.639	.000	.650	.500	.750	.000	.000	.753	.667	.919	.600	.000	.889	.837



Ridgeview Data Collection

Steamboat Springs, CO

PM Peak
US-40 and Dougherty Rd

File Name : US 40 and Dougherty PM
Site Code : IPO 8
Start Date : 5/25/2021
Page No : 1

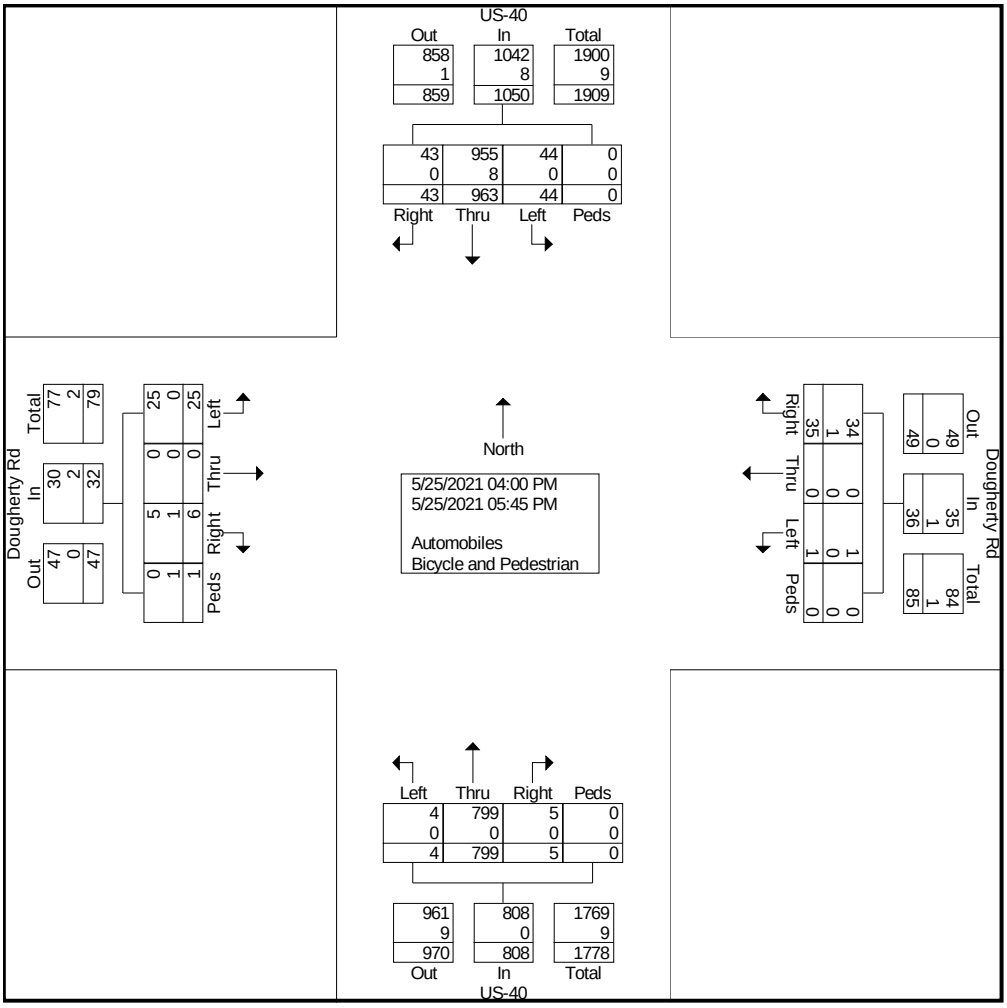
Groups Printed- Automobiles - Bicycle and Pedestrian

	Dougherty Rd Eastbound					Dougherty Rd Westbound					US-40 Northbound					US-40 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	5	0	3	0	8	0	0	7	0	7	0	103	0	0	103	4	101	9	0	114	232
04:15 PM	1	0	0	0	1	1	0	3	0	4	0	85	0	0	85	2	113	5	0	120	210
04:30 PM	4	0	2	0	6	0	0	0	0	0	0	129	2	0	131	6	117	5	0	128	265
04:45 PM	4	0	1	0	5	0	0	7	0	7	2	85	1	0	88	4	114	6	0	124	224
Total	14	0	6	0	20	1	0	17	0	18	2	402	3	0	407	16	445	25	0	486	931
05:00 PM	4	0	0	0	4	0	0	4	0	4	1	113	0	0	114	7	128	3	0	138	260
05:15 PM	2	0	0	0	2	0	0	5	0	5	1	113	1	0	115	8	123	5	0	136	258
05:30 PM	2	0	0	1	3	0	0	3	0	3	0	94	0	0	94	8	146	5	0	159	259
05:45 PM	3	0	0	0	3	0	0	6	0	6	0	77	1	0	78	5	121	5	0	131	218
Total	11	0	0	1	12	0	0	18	0	18	2	397	2	0	401	28	518	18	0	564	995
Grand Total	25	0	6	1	32	1	0	35	0	36	4	799	5	0	808	44	963	43	0	1050	1926
Apprch %	78.1	0	18.8	3.1		2.8	0	97.2	0		0.5	98.9	0.6	0		4.2	91.7	4.1	0		
Total %	1.3	0	0.3	0.1	1.7	0.1	0	1.8	0	1.9	0.2	41.5	0.3	0	42	2.3	50	2.2	0	54.5	
Automobiles	25	0	5	0	30	1	0	34	0	35	4	799	5	0	808	44	955	43	0	1042	1915
% Automobiles	100	0	83.3	0	93.8	100	0	97.1	0	97.2	100	100	100	0	100	100	99.2	100	0	99.2	99.4
Bicycle and Pedestrian	0	0	1	1	2	0	0	1	0	1	0	0	0	0	0	0	8	0	0	8	11
% Bicycle and Pedestrian	0	0	16.7	100	6.2	0	0	2.9	0	2.8	0	0	0	0	0	0	0.8	0	0	0.8	0.6

Steamboat Springs, CO

PM Peak
US-40 and Dougherty Rd

File Name : US 40 and Dougherty PM
Site Code : IPO 8
Start Date : 5/25/2021
Page No : 2



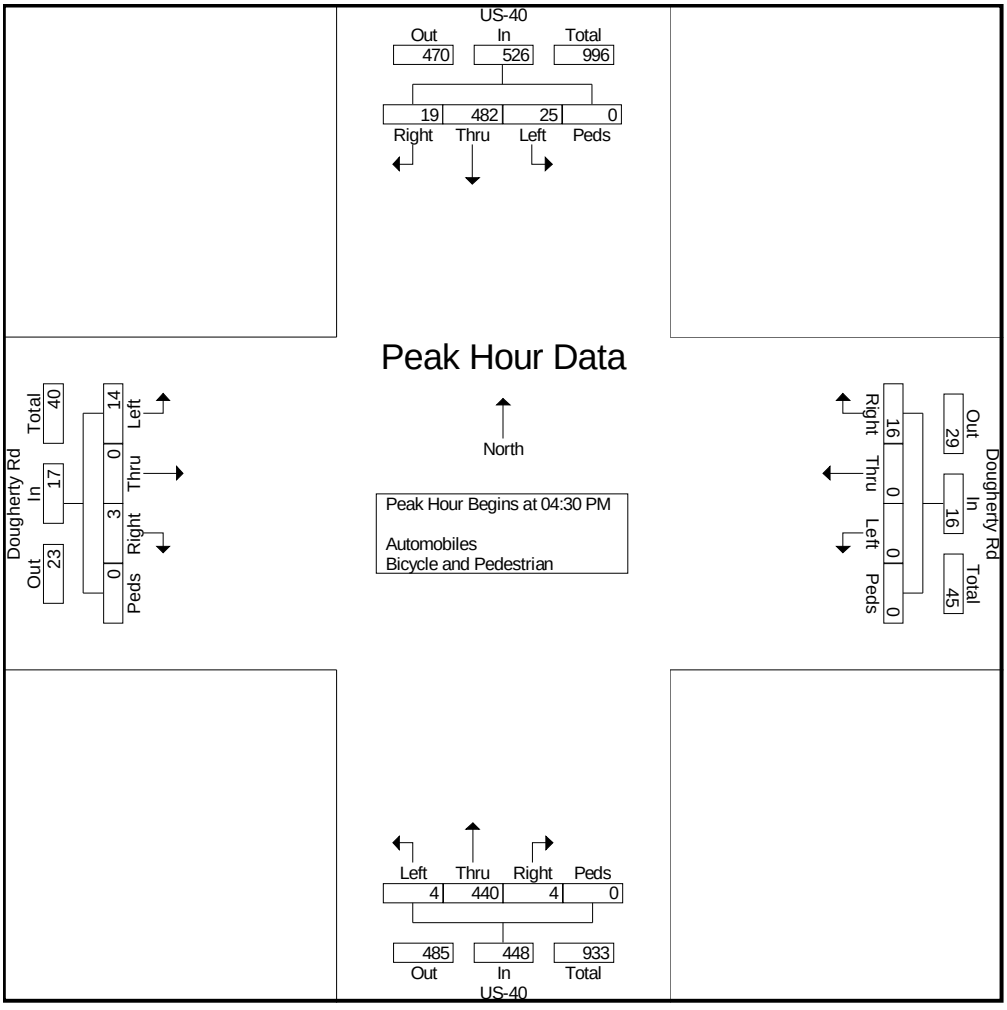
Ridgeview Data Collection

Steamboat Springs, CO

PM Peak
US-40 and Dougherty Rd

File Name : US 40 and Dougherty PM
Site Code : IPO 8
Start Date : 5/25/2021
Page No : 3

	Dougherty Rd Eastbound					Dougherty Rd Westbound					US-40 Northbound					US-40 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**4**	0	**2**	0	**6**	0	0	0	0	0	0	**129**	**2**	0	**131**	6	117	5	0	128	**265**
04:45 PM	4	0	1	0	5	0	0	**7**	0	**7**	**2**	85	1	0	88	4	114	**6**	0	124	224
05:00 PM	4	0	0	0	4	0	0	4	0	4	1	113	0	0	114	7	**128**	3	0	**138**	260
05:15 PM	2	0	0	0	2	0	0	5	0	5	1	113	1	0	115	**8**	123	5	0	136	258
Total Volume	14	0	3	0	17	0	0	16	0	16	4	440	4	0	448	25	482	19	0	526	1007
% App. Total	82.4	0	17.6	0		0	0	100	0		0.9	98.2	0.9	0		4.8	91.6	3.6	0		
PHF	.875	.000	.375	.000	.708	.000	.000	.571	.000	.571	.500	.853	.500	.000	.855	.781	.941	.792	.000	.953	.950



Location: WALTON CREEK RD / E/O US 40
Count Direction: EASTBOUND / WESTBOUND
Date: 2/17/2022
Count Duration: 24 HRS
Site Code: 1

	Thursday, February 17, 2022				
	Light Vehicles		Heavy Vehicles		Total
Time	Volume		Volume		
	WB	EB	WB	EB	
0:00	7	12	1	1	45
0:15	3	11	0	0	
0:30	0	5	0	0	
0:45	1	4	0	0	
1:00	2	6	0	0	26
1:15	3	4	0	0	
1:30	2	3	0	0	
1:45	1	5	0	0	
2:00	1	2	0	0	13
2:15	1	3	0	0	
2:30	1	0	0	0	
2:45	1	2	0	2	
3:00	0	4	1	1	17
3:15	2	2	0	2	
3:30	0	4	0	0	
3:45	0	0	0	1	
4:00	4	0	1	1	28
4:15	2	1	0	1	
4:30	3	1	0	0	
4:45	9	5	0	0	
5:00	4	1	1	0	72
5:15	10	7	1	0	
5:30	10	8	0	0	
5:45	20	6	1	3	
6:00	14	11	1	3	177
6:15	19	13	1	1	
6:30	26	13	2	1	
6:45	35	30	3	4	
7:00	76	37	5	2	611
7:15	58	47	0	2	
7:30	97	46	3	5	
7:45	153	72	4	4	
8:00	136	69	7	7	744
8:15	90	83	5	3	
8:30	76	99	4	6	
8:45	90	62	3	4	
9:00	73	62	0	3	558
9:15	61	61	2	7	
9:30	71	65	2	5	
9:45	80	58	1	7	
10:00	78	76	3	5	553
10:15	66	36	1	5	
10:30	57	49	3	4	
10:45	98	64	3	5	
11:00	76	67	0	3	564
11:15	67	53	2	1	
11:30	62	60	4	4	
11:45	84	74	4	3	
12:00	82	75	3	3	612
12:15	68	83	3	1	
12:30	74	70	5	4	
12:45	66	67	2	6	

	Thursday, February 17, 2022		
	Bikes on Road		Total
Time	Volume		
	WB	EB	
0:00	0	0	0
0:15	0	0	
0:30	0	0	
0:45	0	0	
1:00	0	0	0
1:15	0	0	
1:30	0	0	
1:45	0	0	
2:00	0	0	0
2:15	0	0	
2:30	0	0	
2:45	0	0	
3:00	0	0	0
3:15	0	0	
3:30	0	0	
3:45	0	0	
4:00	0	0	0
4:15	0	0	
4:30	0	0	
4:45	0	0	
5:00	0	0	0
5:15	0	0	
5:30	0	0	
5:45	0	0	
6:00	0	0	0
6:15	0	0	
6:30	0	0	
6:45	0	0	
7:00	0	0	1
7:15	0	0	
7:30	0	1	
7:45	0	0	
8:00	0	0	1
8:15	0	0	
8:30	0	0	
8:45	1	0	
9:00	0	0	0
9:15	0	0	
9:30	0	0	
9:45	0	0	
10:00	0	0	0
10:15	0	0	
10:30	0	0	
10:45	0	0	
11:00	0	0	0
11:15	0	0	
11:30	0	0	
11:45	0	0	
12:00	0	0	0
12:15	0	0	
12:30	0	0	
12:45	0	0	

Location: WALTON CREEK RD / E/O US 40
Count Direction: EASTBOUND / WESTBOUND
Date: 2/17/2022
Count Duration: 24 HRS
Site Code: 1

	Thursday, February 17, 2022				
	Light Vehicles		Heavy Vehicles		Total
Time	Volume		Volume		
	WB	EB	WB	EB	
13:00	81	71	4	2	637
13:15	66	68	4	3	
13:30	88	61	3	8	
13:45	78	96	0	4	
14:00	79	94	2	4	736
14:15	70	95	2	1	
14:30	92	72	3	8	
14:45	117	88	4	5	
15:00	97	67	3	4	818
15:15	95	102	3	4	
15:30	102	116	6	3	
15:45	113	95	2	6	
16:00	103	119	6	2	857
16:15	104	91	4	4	
16:30	97	117	3	3	
16:45	90	109	4	1	
17:00	113	118	1	2	936
17:15	100	126	3	2	
17:30	90	125	4	2	
17:45	110	128	3	9	
18:00	77	116	4	2	764
18:15	80	111	3	6	
18:30	76	103	2	4	
18:45	85	90	2	3	
19:00	68	99	3	5	592
19:15	63	69	3	5	
19:30	48	92	5	4	
19:45	44	73	5	6	
20:00	42	84	4	3	429
20:15	40	55	4	7	
20:30	35	48	3	1	
20:45	27	66	5	5	
21:00	23	74	5	7	383
21:15	24	70	1	6	
21:30	27	56	2	5	
21:45	23	58	0	2	
22:00	22	49	1	2	227
22:15	15	45	1	4	
22:30	12	31	3	2	
22:45	11	28	0	1	
23:00	13	27	1	1	108
23:15	5	24	0	0	
23:30	5	12	1	2	
23:45	2	15	0	0	
24-HOUR TOTAL	**4872**	**5151**	**204**	**280**	**10507**

	Thursday, February 17, 2022		
	Bikes on Road		Total
Time	Volume		
	WB	EB	
13:00	0	0	0
13:15	0	0	
13:30	0	0	
13:45	0	0	
14:00	0	0	0
14:15	0	0	
14:30	0	0	
14:45	0	0	
15:00	0	0	0
15:15	0	0	
15:30	0	0	
15:45	0	0	
16:00	1	0	1
16:15	0	0	
16:30	0	0	
16:45	0	0	
17:00	0	0	0
17:15	0	0	
17:30	0	0	
17:45	0	0	
18:00	0	0	0
18:15	0	0	
18:30	0	0	
18:45	0	0	
19:00	0	0	0
19:15	0	0	
19:30	0	0	
19:45	0	0	
20:00	0	0	0
20:15	0	0	
20:30	0	0	
20:45	0	0	
21:00	0	0	0
21:15	0	0	
21:30	0	0	
21:45	0	0	
22:00	0	0	0
22:15	0	0	
22:30	0	0	
22:45	0	0	
23:00	0	0	0
23:15	0	0	
23:30	0	0	
23:45	0	0	
24-HOUR TOTAL	**2**	**1**	**3**

Location: STONE LN / E/O US 40
Count Direction: EASTBOUND / WESTBOUND
Date: 2/17/2022
Count Duration: 24 HRS
Site Code: 2

	Thursday, February 17, 2022				
	Light Vehicles		Heavy Vehicles		Total
Time	Volume		Volume		
	WB	EB	WB	EB	
0:00	2	1	1	1	9
0:15	0	0	0	1	
0:30	0	0	2	1	
0:45	0	0	0	0	
1:00	0	1	0	0	1
1:15	0	0	0	0	
1:30	0	0	0	0	
1:45	0	0	0	0	
2:00	0	0	0	0	2
2:15	0	0	0	0	
2:30	0	1	1	0	
2:45	0	0	0	0	
3:00	0	0	0	0	0
3:15	0	0	0	0	
3:30	0	0	0	0	
3:45	0	0	0	0	
4:00	0	0	0	0	4
4:15	0	1	0	0	
4:30	1	0	0	0	
4:45	1	1	0	0	
5:00	0	0	1	1	9
5:15	1	0	0	0	
5:30	2	0	1	2	
5:45	1	0	0	0	
6:00	3	0	2	2	26
6:15	1	1	1	2	
6:30	3	0	2	1	
6:45	4	2	1	1	
7:00	5	0	1	1	32
7:15	3	2	1	2	
7:30	2	2	1	1	
7:45	6	2	2	1	
8:00	7	5	1	1	42
8:15	4	2	2	2	
8:30	5	3	1	1	
8:45	3	2	1	2	
9:00	6	2	2	2	34
9:15	7	1	1	1	
9:30	3	1	1	0	
9:45	2	1	2	2	
10:00	2	1	1	1	19
10:15	2	1	1	1	
10:30	2	1	0	0	
10:45	2	2	1	1	
11:00	2	2	1	1	21
11:15	2	1	1	1	
11:30	1	0	0	1	
11:45	3	2	2	1	
12:00	6	3	1	1	33
12:15	2	2	1	1	
12:30	1	5	0	0	
12:45	4	4	1	1	

	Thursday, February 17, 2022		
	Bikes on Road		Total
Time	Volume		
	WB	EB	
0:00	0	0	0
0:15	0	0	
0:30	0	0	
0:45	0	0	
1:00	0	0	0
1:15	0	0	
1:30	0	0	
1:45	0	0	
2:00	0	0	0
2:15	0	0	
2:30	0	0	
2:45	0	0	
3:00	0	0	0
3:15	0	0	
3:30	0	0	
3:45	0	0	
4:00	0	0	0
4:15	0	0	
4:30	0	0	
4:45	0	0	
5:00	0	0	0
5:15	0	0	
5:30	0	0	
5:45	0	0	
6:00	0	0	0
6:15	0	0	
6:30	0	0	
6:45	0	0	
7:00	0	0	0
7:15	0	0	
7:30	0	0	
7:45	0	0	
8:00	0	0	0
8:15	0	0	
8:30	0	0	
8:45	0	0	
9:00	0	0	0
9:15	0	0	
9:30	0	0	
9:45	0	0	
10:00	0	0	0
10:15	0	0	
10:30	0	0	
10:45	0	0	
11:00	0	0	0
11:15	0	0	
11:30	0	0	
11:45	0	0	
12:00	0	0	0
12:15	0	0	
12:30	0	0	
12:45	0	0	

Location: STONE LN / E/O US 40
Count Direction: EASTBOUND / WESTBOUND
Date: 2/17/2022
Count Duration: 24 HRS
Site Code: 2

	Thursday, February 17, 2022				
	Light Vehicles		Heavy Vehicles		Total
Time	Volume		Volume		
	WB	EB	WB	EB	
13:00	5	4	2	2	
13:15	4	3	1	2	37
13:30	1	1	2	1	
13:45	2	5	1	1	
14:00	6	3	1	1	
14:15	2	3	0	1	26
14:30	0	1	1	0	
14:45	2	3	1	1	
15:00	0	0	0	0	
15:15	0	0	0	0	0
15:30	0	0	0	0	
15:45	0	0	0	0	
16:00	5	4	1	2	
16:15	5	6	1	0	58
16:30	5	9	4	2	
16:45	7	5	1	1	
17:00	2	8	2	2	
17:15	5	3	2	2	53
17:30	4	5	1	2	
17:45	7	5	2	1	
18:00	7	8	1	1	
18:15	1	7	1	0	50
18:30	4	4	2	3	
18:45	7	4	0	0	
19:00	1	2	1	1	
19:15	5	8	0	0	40
19:30	3	10	1	1	
19:45	2	5	0	0	
20:00	5	6	1	1	
20:15	1	2	1	1	31
20:30	3	6	1	1	
20:45	1	1	0	0	
21:00	0	3	1	1	
21:15	2	2	0	0	29
21:30	2	7	1	1	
21:45	2	7	0	0	
22:00	3	1	1	1	
22:15	2	6	0	0	18
22:30	0	1	1	1	
22:45	0	1	0	0	
23:00	3	2	1	1	
23:15	0	1	0	0	11
23:30	0	1	1	1	
23:45	0	0	0	0	
24-HOUR TOTAL	**217**	**218**	**76**	**74**	**585**

	Thursday, February 17, 2022		
	Bikes on Road		Total
Time	Volume		
	WB	EB	
13:00	0	0	
13:15	0	0	0
13:30	0	0	
13:45	0	0	
14:00	0	0	
14:15	0	0	0
14:30	0	0	
14:45	0	0	
15:00	0	0	
15:15	0	0	0
15:30	0	0	
15:45	0	0	
16:00	0	0	
16:15	0	0	0
16:30	0	0	
16:45	0	0	
17:00	0	0	
17:15	0	0	0
17:30	0	0	
17:45	0	0	
18:00	0	0	
18:15	0	0	0
18:30	0	0	
18:45	0	0	
19:00	0	0	
19:15	0	0	0
19:30	0	0	
19:45	0	0	
20:00	0	0	
20:15	0	0	0
20:30	0	0	
20:45	0	0	
21:00	0	0	
21:15	0	0	0
21:30	0	0	
21:45	0	0	
22:00	0	0	
22:15	0	0	0
22:30	0	0	
22:45	0	0	
23:00	0	0	
23:15	0	0	0
23:30	0	0	
23:45	0	0	
24-HOUR TOTAL	**0**	**0**	**0**

Historic Correspondence regarding Stone Lane Realignment

File
River Place
&
Indian Meadows

City of
Steamboat Springs

March 3, 2004

Daniel Roussin
Permit Unit Manager
Colorado Department of Transportation
Region 3 – Traffic and Safety
222 South 6th Street, Room 100
Grand Junction, CO 81501

Dear Mr. Roussin:

At its meeting last evening, the Steamboat Springs City Council voted unanimously to approve the following assurance regarding the Dougherty Road/Stone Lane intersection, per your request:

The City of Steamboat Springs recognizes that the re-alignment of Stone Lane and Dougherty Road is beneficial to the ultimate traffic design of the intersection, particularly should signalization be required in the future. The City agrees that prior to signalization of the Dougherty Road and Stone Lane intersection, Stone Lane shall be required to be re-aligned to the south to match the alignment of Dougherty Road with a maximum offset of six feet.

We trust that this written assurance will satisfy your needs. Please feel free to let me know if you require anything further.

Sincerely,

Paul W. Hughes
City Manager

cc: Jorge Gonzalez-Rodiles
Jim Weber
Steve Stamey
City Council

137 10th Street, P.O. Box 775088, Steamboat Springs, Colorado 80477-5088
(970) 879-2060 • Fax (970) 879-8851 • http://www.ci.steamboat.co.us

File

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Traffic & Safety Section

222 South 6th Street, Room 100
Grand Junction, Colorado 81501
(970) 248-7230

DOT

River Place

March 11, 2004

Mr. Paul W. Hughes
City of Steamboat Springs
PO Box 775088
Steamboat Springs, Co. 80477

Re: Permit Number

Dear Mr. Hughes

I have received your letter dated March 3, 2004. Thank you for your assistance in the future re-alignment of Stone Lane and Dougherty Road. Colorado Department of Transportation (CDOT) understands that if there is further development of Stone Lane, then Stone Lane will re-align with Dougherty Road at no extra cost to the Department. CDOT is acceptable with this condition. A permit is being issued for Dougherty Road and will be sent to the City for signature.

Once again, thank you for the City's assistance in helping preserving the US 40 corridor. If I can be of any further assistance in this or any other matter, please feel free to contact me at the office listed above.

Sincerely,

Dan Roussin

Dan Roussin
Region 3 Unit Permit Manager
Daniel.Roussin@dot.state.co.us

Cc: Jim Nall, CDOT
Jim Weber, City of Steamboat Springs
Jorge Gonzales-Rodiles, Landmark Consultants Inc.

Workforce Housing Trip Rates

FOX TUTTLE

MEMORANDUM

To: Jon Sanders

From: Bill Fox

Date: June 22, 2021

Project: Work Force Housing Traffic Study in Steamboat Springs

Subject: Trip generation comparison for occupied work force housing v. hotel units

At your request I have completed an analysis and prepared this memorandum to compare the trip generation rates of occupied work force housing units and occupied hotel rooms in Steamboat Springs. This analysis will help inform considerations for converting hotel units to work force housing units. This comparison is based on traffic counts and room occupancies collected on May 25th and 26th, 2021 at the following locations:

- The 424 Lincoln Avenue housing project formerly known as the Alpiner hotel (US 40 downtown)
- The Flour Mill housing project formerly know as the Iron Horse Inn (on US 40 just north of Trafalger Drive)
- The Fairfield Inn hotel (on US 40 at Dougherty Road)
- The Homewood Suites hotel (on US 40 at Dougherty Road)

Since all counts were taken at the same time, no attempt was made to compensate for the influence of COVID-19 (although it is not known if there will be any relative difference in the post-COVID trips generated by each housing type).

The occupied dwelling units and trips observed at each facility are detailed on the attached **Table 1**. It can be seen in all cases (AM in, AM out, AM total, PM in, PM out, and PM total) that the trip rates at the two work force housing sites are less than or equal to the trip rates at the two hotel sites. Assuming this relationship holds throughout the year, it is projected that the conversion of the Fairfield Inn from a hotel to work force housing will not increase the traffic at the intersection of Dougherty Road/Stone Lane and US 40. In this context, it is assumed that the hotel conversion will not trigger the 20% traffic increase threshold for acquiring a new CDOT State Highway Access Permit onto US 40 at the Dougherty Road/Stone Lane intersection.

On this basis it is not clear if any additional traffic study is needed to support the conversion of the Fairfield Inn to workforce housing. Please review this information with City of Steamboat staff and let me know how you would like to proceed.

1624 Market Street | Suite 202 | Denver, CO 80202
Phone: 303.652.3571 | www.FoxTuttle.com

Please let me know if you have any questions.

BF/
Attachments:

Table 1 Work Force Housing v. Hotel Trip Generation Comparison

Table 1

Steamboat Springs Work Force Housing v. Hotel Trip Generation Comparison [Data Collected Tuesday/Wednesday May 25/26, 2021]

		AM Peak Hour Trips and Trip Rates					PM Peak Hour Trips and Trip Rates				
Housing Site	**Occupied Dwelling Units (ODU)**	**Trips In**	**Trips Out**	**AM Rate In (trips/ODU)**	**AM Rate Out (trips/ODU)**	**AM Total Rate (trips/ODU)**	**Trips In**	**Trips Out**	**PM Rate In (trips/ODU)**	**PM Rate Out (trips/ODU)**	**PM Total Rate (trips/ODU)**
Alpiner	35	4	5	0.11	0.14	0.26	3	5	0.09	0.14	0.23
Flour Mill	46	2	11	0.04	0.24	0.28	11	7	0.24	0.15	0.39
Fairfield Inn	34	4	16	0.12	0.47	0.59	10	7	0.29	0.21	0.5
Homewood Suites	76	9	18	0.12	0.24	0.36	22	14	0.29	0.18	0.47

Currently Work Force Housing

Currently Hotel Units

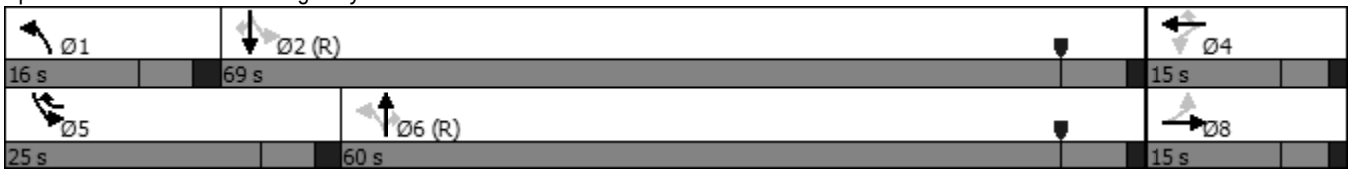
Summary: Comparing the trip rates from current hotels (Fairfield and Homewood) with the current workforce housing (Alpiner and Flour Mill) it appears that work force housing has lower trip rates and will actually reduce the trips that will be made at the US 40/Dougherty Lane/Stone Lane intersection if the Fairfield Inr is converted to work force housing.

Intersection Capacity Worksheets: Existing

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	3	103	3	682	2	785	199	367	471	12
Future Volume (vph)	5	3	103	3	682	2	785	199	367	471	12
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		10.0		10.0	34.0	62.0	53.5	53.5	79.0	75.7	75.7
Actuated g/C Ratio		0.10		0.10	0.34	0.62	0.54	0.54	0.79	0.76	0.76
v/c Ratio		0.09		1.04	1.51	0.01	1.04	0.27	1.03	0.21	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.51
Intersection Signal Delay: 108.7
Intersection Capacity Utilization 103.1%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	140	897	3	1019	258	422	541	14
v/c Ratio	0.09	1.04	1.51	0.01	1.04	0.27	1.03	0.21	0.01
Control Delay	37.3	135.9	262.8	3.5	65.3	2.8	82.2	4.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	135.9	262.8	3.5	65.3	2.8	82.2	4.3	0.0
Queue Length 50th (ft)	7	~97	~768	0	~707	5	~237	36	0
Queue Length 95th (ft)	21	#170	#781	2	#718	24	#403	90	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	148	134	595	628	977	958	411	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	1.04	1.51	0.00	1.04	0.27	1.03	0.21	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	2	103	3	682	2	785	199	367	471	12
Future Volume (veh/h)	5	3	2	103	3	682	2	785	199	367	471	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	4	3	136	4	0	3	1019	258	422	541	14
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.77	0.77	0.77	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	127	69	39	211	4		540	985	847	410	2473	1138
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.01	0.54	0.54	0.19	0.72	0.72
Sat Flow, veh/h	731	692	388	1403	41	1585	1781	1841	1584	1781	3441	1584
Grp Volume(v), veh/h	14	0	0	140	0	0	3	1019	258	422	541	14
Grp Sat Flow(s),veh/h/ln	1811	0	0	1444	0	1585	1781	1841	1584	1781	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	8.9	0.0	0.0	0.1	53.5	9.1	19.0	5.2	0.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	9.7	0.0	0.0	0.1	53.5	9.1	19.0	5.2	0.3
Prop In Lane	0.50		0.21	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	0	0	215	0		540	985	847	410	2473	1138
V/C Ratio(X)	0.06	0.00	0.00	0.65	0.00		0.01	1.03	0.30	1.03	0.22	0.01
Avail Cap(c_a), veh/h	235	0	0	215	0		707	985	847	410	2473	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	44.8	0.0	0.0	10.5	23.2	12.9	34.4	4.7	4.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	7.6	0.0	0.0	0.0	38.0	0.9	51.8	0.2	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	0.0	0.0	3.9	0.0	0.0	0.0	30.2	3.1	14.8	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	52.4	0.0	0.0	10.5	61.3	13.8	86.2	4.9	4.0
LnGrp LOS	D	A	A	D	A		B	E	B	F	A	A
Approach Vol, veh/h		14			140	A		1280			977	
Approach Delay, s/veh		41.0			52.4			51.6			40.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	78.4		15.0	25.0	60.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	7.2		11.7	21.0	55.5		2.7				
Green Ext Time (p_c), s	0.0	16.4		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		46.9
HCM 6th LOS		D

Notes

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

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

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	0	3	7	0	40	3	881	2	26	523	18
Future Vol, veh/h	26	0	3	7	0	40	3	881	2	26	523	18
Conflicting Peds, #/hr	4	0	0	0	0	4	27	0	0	0	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	100	100	100	75	75	75	75	75	75
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	37	0	4	7	0	40	4	1175	3	35	697	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1983	1980	724	1964	2001	1179	748	0	0	1178	0	0
Stage 1	794	794	-	1183	1183	-	-	-	-	-	-	-
Stage 2	1189	1186	-	781	818	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	46	62	426	47	61	232	861	-	-	593	-	-
Stage 1	381	403	-	231	265	-	-	-	-	-	-	-
Stage 2	229	265	-	388	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 35	57	415	44	56	231	839	-	-	593	-	-
Mov Cap-2 Maneuver	~ 35	57	-	44	56	-	-	-	-	-	-	-
Stage 1	370	370	-	230	264	-	-	-	-	-	-	-
Stage 2	188	264	-	361	360	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 316.8	35.4	0	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	839	-	-	39	44	231	593	-	-
HCM Lane V/C Ratio	0.005	-	-	1.047	0.159	0.173	0.058	-	-
HCM Control Delay (s)	9.3	-	-	$ 316.8	101.7	23.8	11.4	-	-
HCM Lane LOS	A	-	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4	0.5	0.6	0.2	-	-

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

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	12	8	0	27	0	10	1	0	0	1	10
Future Vol, veh/h	8	12	8	0	27	0	10	1	0	0	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	65	65	65	75	75	75	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	18	12	0	42	0	13	1	0	0	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	30	0	0	96	90	24	91	96	42
Stage 1	-	-	-	-	-	-	48	48	-	42	42	-
Stage 2	-	-	-	-	-	-	48	42	-	49	54	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1567	-	-	1583	-	-	887	800	1052	893	794	1029
Stage 1	-	-	-	-	-	-	965	855	-	972	860	-
Stage 2	-	-	-	-	-	-	965	860	-	964	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1583	-	-	871	794	1052	887	788	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	871	794	-	887	788	-
Stage 1	-	-	-	-	-	-	957	848	-	964	860	-
Stage 2	-	-	-	-	-	-	953	860	-	955	843	-

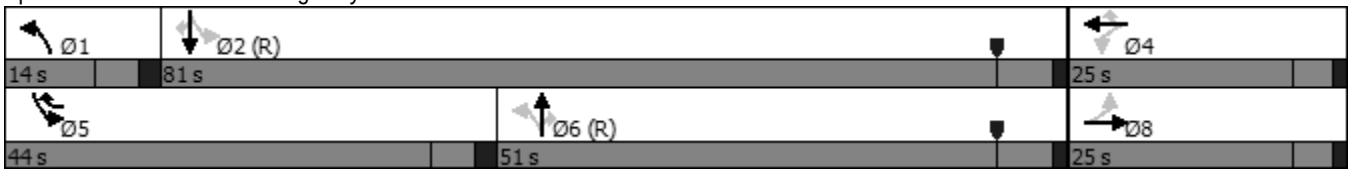
Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	9.2	8.6
HCM LOS			A	A

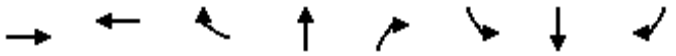
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	863	1567	-	-	1583	-	-	1001
HCM Lane V/C Ratio	0.017	0.008	-	-	-	-	-	0.012
HCM Control Delay (s)	9.2	7.3	0	-	0	-	-	8.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	20	2	183	2	498	665	181	611	814	7	
Future Volume (vph)	20	2	183	2	498	665	181	611	814	7	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	25.0	25.0	25.0	25.0	44.0	51.0	51.0	44.0	81.0	81.0	14.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%	36.7%	42.5%	42.5%	36.7%	67.5%	67.5%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		20.0		20.0	63.0	44.5	44.5	89.0	88.5	88.5	
Actuated g/C Ratio		0.17		0.17	0.52	0.37	0.37	0.74	0.74	0.74	
v/c Ratio		0.31		0.91	0.63	1.04	0.29	1.12	0.37	0.01	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 51.4
Intersection Capacity Utilization 97.3%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.





Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	205	553	707	193	694	925	8
v/c Ratio	0.31	0.91	0.63	1.04	0.29	1.12	0.37	0.01
Control Delay	40.5	90.5	20.8	84.1	7.4	104.7	6.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	90.5	20.8	84.1	7.4	104.7	6.2	0.0
Queue Length 50th (ft)	28	158	249	~594	17	~566	118	0
Queue Length 95th (ft)	37	#303	372	#827	67	#771	142	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	173	225	871	677	673	622	2511	1132
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	0.31	0.91	0.63	1.04	0.29	1.12	0.37	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2	8	183	2	498	0	665	181	611	814	7
Future Volume (veh/h)	20	2	8	183	2	498	0	665	181	611	814	7
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	36	4	14	203	2	0	0	707	193	694	925	8
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	234	31	75	300	2		284	683	580	624	2538	1161
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.00	0.37	0.37	0.32	0.74	0.74
Sat Flow, veh/h	1105	189	453	1443	14	1585	1781	1841	1564	1781	3441	1574
Grp Volume(v), veh/h	54	0	0	205	0	0	0	707	193	694	925	8
Grp Sat Flow(s),veh/h/ln	1747	0	0	1457	0	1585	1781	1841	1564	1781	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	13.1	0.0	0.0	0.0	44.5	10.6	38.0	11.6	0.2
Cycle Q Clear(g_c), s	3.1	0.0	0.0	16.2	0.0	0.0	0.0	44.5	10.6	38.0	11.6	0.2
Prop In Lane	0.67		0.26	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	0	303	0		284	683	580	624	2538	1161
V/C Ratio(X)	0.16	0.00	0.00	0.68	0.00		0.00	1.04	0.33	1.11	0.36	0.01
Avail Cap(c_a), veh/h	341	0	0	303	0		401	683	580	624	2538	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	0.0	48.1	0.0	0.0	0.0	37.8	27.1	35.8	5.7	4.2
Incr Delay (d2), s/veh	1.0	0.0	0.0	11.6	0.0	0.0	0.0	44.0	1.5	70.8	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	6.9	0.0	0.0	0.0	27.2	4.1	28.6	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	0.0	0.0	59.7	0.0	0.0	0.0	81.8	28.6	106.6	6.1	4.2
LnGrp LOS	D	A	A	E	A		A	F	C	F	A	A
Approach Vol, veh/h		54			205	A		900			1627	
Approach Delay, s/veh		43.9			59.7			70.4			48.9	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.0		25.0	44.0	51.0		25.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	74.5		20.0	38.0	44.5		20.0				
Max Q Clear Time (g_c+I1), s	0.0	13.6		18.2	40.0	46.5		5.1				
Green Ext Time (p_c), s	0.0	33.0		0.2	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	56.5	
HCM 6th LOS	E	

Notes

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

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

Intersection	
Int Delay, s/veh	17.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	0	5	5	0	42	6	748	11	43	887	29
Future Vol, veh/h	21	0	5	5	0	42	6	748	11	43	887	29
Conflicting Peds, #/hr	5	0	0	0	0	5	13	0	27	27	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	79	79	79	75	75	75	63	63	63
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	29	0	7	6	0	53	8	997	15	68	1408	46

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2583	2612	1421	2611	2643	1029	1467	0	0	1039	0	0
Stage 1	1557	1557	-	1040	1040	-	-	-	-	-	-	-
Stage 2	1026	1055	-	1571	1603	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 17	25	167	16	24	284	460	-	-	669	-	-
Stage 1	141	175	-	278	310	-	-	-	-	-	-	-
Stage 2	283	305	-	139	167	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 12	21	165	14	20	275	454	-	-	652	-	-
Mov Cap-2 Maneuver	~ 12	21	-	14	20	-	-	-	-	-	-	-
Stage 1	137	155	-	266	296	-	-	-	-	-	-	-
Stage 2	223	292	-	119	148	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	1147.6	61.4	0.1	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	454	-	-	15	14	275	652	-	-
HCM Lane V/C Ratio	0.018	-	-	2.374	0.452	0.193	0.105	-	-
HCM Control Delay (s)	13.1	-	-	$ 1147.6	$ 398.7	21.2	11.2	-	-
HCM Lane LOS	B	-	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.2	1.1	0.7	0.3	-	-

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	17	22	2	30	0	10	1	0	0	2	7
Future Vol, veh/h	15	17	22	2	30	0	10	1	0	0	2	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	57	57	57	86	86	86	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	24	31	4	53	0	12	1	0	0	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	55	0	0	148	143	40	143	158	53
Stage 1	-	-	-	-	-	-	82	82	-	61	61	-
Stage 2	-	-	-	-	-	-	66	61	-	82	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1553	-	-	1550	-	-	820	748	1031	826	734	1014
Stage 1	-	-	-	-	-	-	926	827	-	950	844	-
Stage 2	-	-	-	-	-	-	945	844	-	926	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1550	-	-	802	735	1031	814	722	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	735	-	814	722	-
Stage 1	-	-	-	-	-	-	913	815	-	937	841	-
Stage 2	-	-	-	-	-	-	933	841	-	912	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.5	9.6	8.9
HCM LOS			A	A

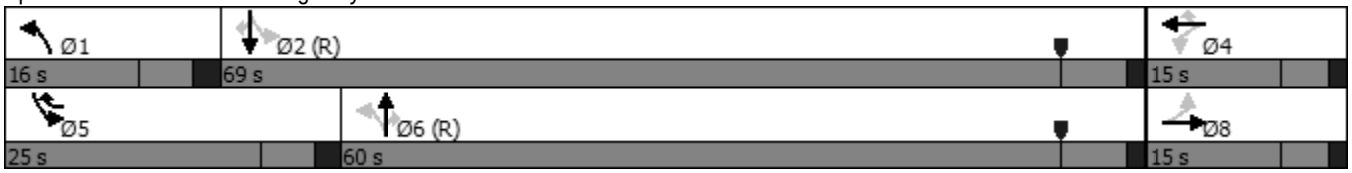
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1553	-	-	1550	-	-	930
HCM Lane V/C Ratio	0.016	0.014	-	-	0.002	-	-	0.01
HCM Control Delay (s)	9.6	7.3	0	-	7.3	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection Capacity Worksheets:
Existing
With Improvements

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	3	103	3	682	2	785	199	367	471	12
Future Volume (vph)	5	3	103	3	682	2	785	199	367	471	12
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		10.0		10.0	34.0	62.0	53.5	53.5	79.0	75.7	75.7
Actuated g/C Ratio		0.10		0.10	0.34	0.62	0.54	0.54	0.79	0.76	0.76
v/c Ratio		0.09		1.04	1.51	0.01	1.04	0.27	0.53	0.21	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.51
Intersection Signal Delay: 101.2
Intersection Capacity Utilization 103.1%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	140	897	3	1019	258	422	541	14
v/c Ratio	0.09	1.04	1.51	0.01	1.04	0.27	0.53	0.21	0.01
Control Delay	37.3	135.9	262.8	4.5	66.2	5.8	19.6	4.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	135.9	262.8	4.5	66.2	5.8	19.6	4.3	0.0
Queue Length 50th (ft)	7	~97	~768	0	~735	43	70	36	0
Queue Length 95th (ft)	21	#170	#781	m1	#746	61	111	90	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	148	134	595	628	977	958	797	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	1.04	1.51	0.00	1.04	0.27	0.53	0.21	0.01

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.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	2	103	3	682	2	785	199	367	471	12
Future Volume (veh/h)	5	3	2	103	3	682	2	785	199	367	471	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	4	3	136	4	0	3	1019	258	422	541	14
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.77	0.77	0.77	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	127	69	39	211	4		634	1187	1022	593	2473	1138
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.01	0.65	0.65	0.08	0.72	0.72
Sat Flow, veh/h	731	692	388	1403	41	1585	1781	1841	1584	3456	3441	1584
Grp Volume(v), veh/h	14	0	0	140	0	0	3	1019	258	422	541	14
Grp Sat Flow(s),veh/h/ln	1811	0	0	1444	0	1585	1781	1841	1584	1728	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	8.9	0.0	0.0	0.1	44.0	6.9	3.5	5.2	0.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	9.7	0.0	0.0	0.1	44.0	6.9	3.5	5.2	0.3
Prop In Lane	0.50		0.21	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	0	0	215	0		634	1187	1022	593	2473	1138
V/C Ratio(X)	0.06	0.00	0.00	0.65	0.00		0.00	0.86	0.25	0.71	0.22	0.01
Avail Cap(c_a), veh/h	235	0	0	215	0		800	1187	1022	973	2473	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	44.8	0.0	0.0	6.1	14.1	7.5	21.6	4.7	4.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	7.6	0.0	0.0	0.0	8.1	0.6	1.6	0.2	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	0.0	0.0	3.9	0.0	0.0	0.0	17.0	2.1	3.3	1.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	52.4	0.0	0.0	6.1	22.3	8.1	23.2	4.9	4.0
LnGrp LOS	D	A	A	D	A		A	C	A	C	A	A
Approach Vol, veh/h		14			140	A		1280			977	
Approach Delay, s/veh		41.0			52.4			19.4			12.8	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	78.4		15.0	14.0	71.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	7.2		11.7	5.5	46.0		2.7				
Green Ext Time (p_c), s	0.0	16.4		0.0	1.2	7.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		18.8	
HCM 6th LOS		B	

Notes

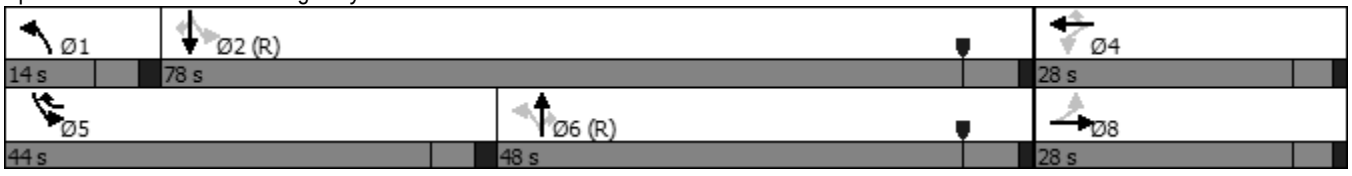
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	20	2	183	2	498	665	181	611	814	7	
Future Volume (vph)	20	2	183	2	498	665	181	611	814	7	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	28.0	28.0	28.0	28.0	44.0	48.0	48.0	44.0	78.0	78.0	14.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	36.7%	40.0%	40.0%	36.7%	65.0%	65.0%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		23.0		23.0	54.5	53.0	53.0	86.0	85.5	85.5	
Actuated g/C Ratio		0.19		0.19	0.45	0.44	0.44	0.72	0.71	0.71	
v/c Ratio		0.24		0.79	0.73	0.88	0.25	0.73	0.38	0.01	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 25.9
Intersection Capacity Utilization 85.4%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	205	553	707	193	694	925	8
v/c Ratio	0.24	0.79	0.73	0.88	0.25	0.73	0.38	0.01
Control Delay	35.9	69.0	28.5	39.6	8.1	26.4	7.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	69.0	28.5	39.6	8.1	26.4	7.3	0.0
Queue Length 50th (ft)	27	153	303	288	13	167	132	0
Queue Length 95th (ft)	36	#277	366	#852	m72	205	159	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	225	258	902	806	775	1244	2426	1096
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	0.24	0.79	0.61	0.88	0.25	0.56	0.38	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	2	8	183	2	498	0	665	181	611	814	7
Future Volume (veh/h)	20	2	8	183	2	498	0	665	181	611	814	7
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	36	4	14	203	2	0	0	707	193	694	925	8
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	258	34	85	335	3		388	1001	857	841	2452	1121
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.00	0.00	0.54	0.54	0.12	0.71	0.71
Sat Flow, veh/h	1085	178	442	1434	14	1585	1781	1841	1576	3456	3441	1574
Grp Volume(v), veh/h	54	0	0	205	0	0	0	707	193	694	925	8
Grp Sat Flow(s),veh/h/ln	1705	0	0	1448	0	1585	1781	1841	1576	1728	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	12.7	0.0	0.0	0.0	34.1	7.6	9.7	12.7	0.2
Cycle Q Clear(g_c), s	3.0	0.0	0.0	15.7	0.0	0.0	0.0	34.1	7.6	9.7	12.7	0.2
Prop In Lane	0.67		0.26	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	377	0	0	337	0		388	1001	857	841	2452	1121
V/C Ratio(X)	0.14	0.00	0.00	0.61	0.00		0.00	0.71	0.23	0.82	0.38	0.01
Avail Cap(c_a), veh/h	377	0	0	337	0		505	1001	857	1526	2452	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	0.0	45.3	0.0	0.0	0.0	20.3	14.2	19.6	6.8	5.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	7.9	0.0	0.0	0.0	4.2	0.6	2.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	6.5	0.0	0.0	0.0	14.5	2.7	5.5	3.9	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	0.0	0.0	53.2	0.0	0.0	0.0	24.5	14.8	21.7	7.2	5.0
LnGrp LOS	D	A	A	D	A		A	C	B	C	A	A
Approach Vol, veh/h		54			205	A		900			1627	
Approach Delay, s/veh		41.2			53.2			22.4			13.4	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	92.0		28.0	20.2	71.8		28.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	71.5		23.0	38.0	41.5		23.0				
Max Q Clear Time (g_c+I1), s	0.0	14.7		17.7	11.7	36.1		5.0				
Green Ext Time (p_c), s	0.0	31.8		0.6	2.6	4.5		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		19.8
HCM 6th LOS		B

Notes

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

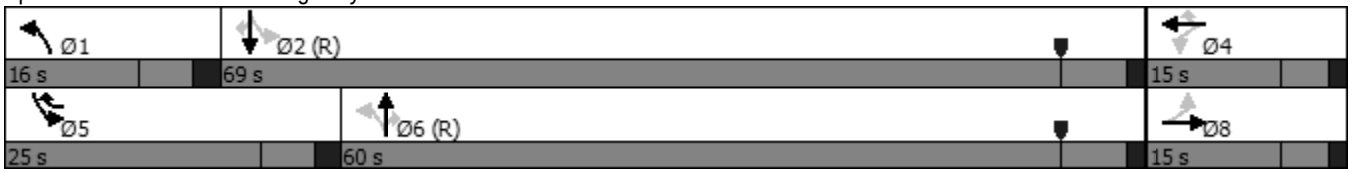
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection Capacity Worksheets: Year 2026 Background

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	3	107	3	710	2	817	207	382	490	12
Future Volume (vph)	5	3	107	3	710	2	817	207	382	490	12
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		10.0		10.0	34.0	62.0	53.5	53.5	79.0	75.7	75.7
Actuated g/C Ratio		0.10		0.10	0.34	0.62	0.54	0.54	0.79	0.76	0.76
v/c Ratio		0.10		1.08	1.59	0.01	1.09	0.28	1.07	0.22	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.59
Intersection Signal Delay: 124.4
Intersection Capacity Utilization 106.5%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	145	934	3	1061	269	439	563	14
v/c Ratio	0.10	1.08	1.59	0.01	1.09	0.28	1.07	0.22	0.01
Control Delay	37.4	145.8	297.0	3.5	79.7	3.1	94.1	4.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	145.8	297.0	3.5	79.7	3.1	94.1	4.3	0.0
Queue Length 50th (ft)	7	~104	~826	0	~763	9	~260	38	0
Queue Length 95th (ft)	21	#178	#833	2	#767	28	#428	93	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	144	134	589	619	977	958	411	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	1.08	1.59	0.00	1.09	0.28	1.07	0.22	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	2	107	3	710	2	817	207	382	490	12
Future Volume (veh/h)	5	3	2	107	3	710	2	817	207	382	490	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	4	3	141	4	0	3	1061	269	439	563	14
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.77	0.77	0.77	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	128	69	39	211	4		531	985	847	410	2473	1138
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.01	0.54	0.54	0.19	0.72	0.72
Sat Flow, veh/h	736	695	390	1404	40	1585	1781	1841	1584	1781	3441	1584
Grp Volume(v), veh/h	14	0	0	145	0	0	3	1061	269	439	563	14
Grp Sat Flow(s),veh/h/ln	1820	0	0	1444	0	1585	1781	1841	1584	1781	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	9.3	0.0	0.0	0.1	53.5	9.5	19.0	5.5	0.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	10.0	0.0	0.0	0.1	53.5	9.5	19.0	5.5	0.3
Prop In Lane	0.50		0.21	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	0	0	215	0		531	985	847	410	2473	1138
V/C Ratio(X)	0.06	0.00	0.00	0.67	0.00		0.01	1.08	0.32	1.07	0.23	0.01
Avail Cap(c_a), veh/h	236	0	0	215	0		697	985	847	410	2473	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	44.9	0.0	0.0	10.5	23.2	13.0	34.4	4.7	4.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	8.9	0.0	0.0	0.0	51.9	1.0	64.2	0.2	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	0.0	0.0	4.1	0.0	0.0	0.0	34.0	3.3	16.2	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	53.8	0.0	0.0	10.5	75.2	14.0	98.5	4.9	4.0
LnGrp LOS	D	A	A	D	A		B	E	B	F	A	A
Approach Vol, veh/h		14			145	A		1333			1016	
Approach Delay, s/veh		41.0			53.8			62.7			45.4	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	78.4		15.0	25.0	60.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	7.5		12.0	21.0	55.5		2.7				
Green Ext Time (p_c), s	0.0	17.1		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		55.0	
HCM 6th LOS		D	

Notes

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

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

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	3	7	0	40	3	917	2	26	544	19
Future Vol, veh/h	27	0	3	7	0	40	3	917	2	26	544	19
Conflicting Peds, #/hr	4	0	0	0	0	4	27	0	0	0	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	100	100	100	75	75	75	75	75	75
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	38	0	4	7	0	40	4	1223	3	35	725	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2059	2056	752	2041	2078	1227	777	0	0	1226	0	0
Stage 1	822	822	-	1231	1231	-	-	-	-	-	-	-
Stage 2	1237	1234	-	810	847	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	40	56	410	42	54	217	839	-	-	569	-	-
Stage 1	368	391	-	217	252	-	-	-	-	-	-	-
Stage 2	215	251	-	374	381	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 30	51	399	39	49	216	817	-	-	569	-	-
Mov Cap-2 Maneuver	~ 30	51	-	39	49	-	-	-	-	-	-	-
Stage 1	357	357	-	216	251	-	-	-	-	-	-	-
Stage 2	174	250	-	347	348	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 435.7	39	0	0.5
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	33	39	216	569	-	-
HCM Lane V/C Ratio	0.005	-	-	1.28	0.179	0.185	0.061	-	-
HCM Control Delay (s)	9.4	-	-	$ 435.7	116.5	25.4	11.7	-	-
HCM Lane LOS	A	-	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4.6	0.6	0.7	0.2	-	-

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

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	12	8	0	27	0	10	1	0	0	1	10
Future Vol, veh/h	8	12	8	0	27	0	10	1	0	0	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	65	65	65	75	75	75	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	18	12	0	42	0	13	1	0	0	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	30	0	0	96	90	24	91	96	42
Stage 1	-	-	-	-	-	-	48	48	-	42	42	-
Stage 2	-	-	-	-	-	-	48	42	-	49	54	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1567	-	-	1583	-	-	887	800	1052	893	794	1029
Stage 1	-	-	-	-	-	-	965	855	-	972	860	-
Stage 2	-	-	-	-	-	-	965	860	-	964	850	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1583	-	-	871	794	1052	887	788	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	871	794	-	887	788	-
Stage 1	-	-	-	-	-	-	957	848	-	964	860	-
Stage 2	-	-	-	-	-	-	953	860	-	955	843	-

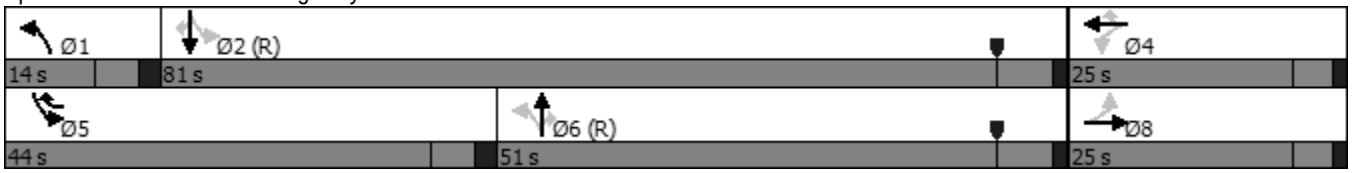
Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	9.2	8.6
HCM LOS			A	A

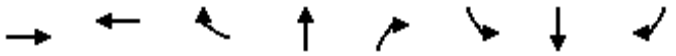
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	863	1567	-	-	1583	-	-	1001
HCM Lane V/C Ratio	0.017	0.008	-	-	-	-	-	0.012
HCM Control Delay (s)	9.2	7.3	0	-	0	-	-	8.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	21	2	191	2	518	692	188	636	847	7	
Future Volume (vph)	21	2	191	2	518	692	188	636	847	7	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	25.0	25.0	25.0	25.0	44.0	51.0	51.0	44.0	81.0	81.0	14.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%	36.7%	42.5%	42.5%	36.7%	67.5%	67.5%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		20.0		20.0	63.0	44.5	44.5	89.0	88.5	88.5	
Actuated g/C Ratio		0.17		0.17	0.52	0.37	0.37	0.74	0.74	0.74	
v/c Ratio		0.35		0.96	0.66	1.09	0.30	1.16	0.38	0.01	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 58.7
Intersection Capacity Utilization 100.5%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.





Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	214	576	736	200	723	963	8
v/c Ratio	0.35	0.96	0.66	1.09	0.30	1.16	0.38	0.01
Control Delay	42.9	99.8	22.2	97.2	8.0	121.9	6.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	99.8	22.2	97.2	8.0	121.9	6.3	0.0
Queue Length 50th (ft)	30	166	273	~640	21	~614	125	0
Queue Length 95th (ft)	40	#320	404	#876	73	#821	150	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	161	224	867	677	673	622	2511	1132
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	0.35	0.96	0.66	1.09	0.30	1.16	0.38	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2	8	191	2	518	0	692	188	636	847	7
Future Volume (veh/h)	21	2	8	191	2	518	0	692	188	636	847	7
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	38	4	14	212	2	0	0	736	200	723	962	8
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	240	31	73	301	2		276	683	580	624	2538	1161
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.00	0.37	0.37	0.32	0.74	0.74
Sat Flow, veh/h	1136	183	440	1446	14	1585	1781	1841	1564	1781	3441	1574
Grp Volume(v), veh/h	56	0	0	214	0	0	0	736	200	723	962	8
Grp Sat Flow(s),veh/h/ln	1759	0	0	1460	0	1585	1781	1841	1564	1781	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	13.8	0.0	0.0	0.0	44.5	11.1	38.0	12.2	0.2
Cycle Q Clear(g_c), s	3.2	0.0	0.0	17.0	0.0	0.0	0.0	44.5	11.1	38.0	12.2	0.2
Prop In Lane	0.68		0.25	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	344	0	0	303	0		276	683	580	624	2538	1161
V/C Ratio(X)	0.16	0.00	0.00	0.71	0.00		0.00	1.08	0.34	1.16	0.38	0.01
Avail Cap(c_a), veh/h	344	0	0	303	0		394	683	580	624	2538	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	0.0	48.4	0.0	0.0	0.0	37.8	27.2	35.8	5.7	4.2
Incr Delay (d2), s/veh	1.0	0.0	0.0	13.0	0.0	0.0	0.0	57.5	1.6	88.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	7.3	0.0	0.0	0.0	29.8	4.3	31.6	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	0.0	0.0	61.4	0.0	0.0	0.0	95.2	28.9	124.1	6.2	4.2
LnGrp LOS	D	A	A	E	A		A	F	C	F	A	A
Approach Vol, veh/h		56			214	A		936			1693	
Approach Delay, s/veh		44.0			61.4			81.0			56.5	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.0		25.0	44.0	51.0		25.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	74.5		20.0	38.0	44.5		20.0				
Max Q Clear Time (g_c+I1), s	0.0	14.2		19.0	40.0	46.5		5.2				
Green Ext Time (p_c), s	0.0	34.4		0.1	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	64.6	
HCM 6th LOS	E	

Notes

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

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

Intersection	
Int Delay, s/veh	23.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	0	5	5	0	42	6	779	11	43	923	30
Future Vol, veh/h	22	0	5	5	0	42	6	779	11	43	923	30
Conflicting Peds, #/hr	5	0	0	0	0	5	13	0	27	27	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	79	79	79	75	75	75	63	63	63
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	30	0	7	6	0	53	8	1039	15	68	1465	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2682	2711	1478	2711	2744	1071	1526	0	0	1081	0	0
Stage 1	1614	1614	-	1082	1082	-	-	-	-	-	-	-
Stage 2	1068	1097	-	1629	1662	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 14	21	155	14	20	268	437	-	-	645	-	-
Stage 1	131	164	-	263	296	-	-	-	-	-	-	-
Stage 2	268	291	-	128	156	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 10	18	153	12	17	260	432	-	-	628	-	-
Mov Cap-2 Maneuver	~ 10	18	-	12	17	-	-	-	-	-	-	-
Stage 1	127	144	-	251	283	-	-	-	-	-	-	-
Stage 2	208	278	-	109	137	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	1570.7	71.7	0.1	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	432	-	-	12	12	260	628	-	-
HCM Lane V/C Ratio	0.019	-	-	3.082	0.527	0.204	0.109	-	-
HCM Control Delay (s)	13.5	-	-	$ 1570.7	$ 485.9	22.4	11.4	-	-
HCM Lane LOS	B	-	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.6	1.2	0.7	0.4	-	-

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	17	22	2	30	0	10	1	0	0	2	7
Future Vol, veh/h	15	17	22	2	30	0	10	1	0	0	2	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	57	57	57	86	86	86	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	24	31	4	53	0	12	1	0	0	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	53	0	0	55	0	0	148	143	40	143	158	53
Stage 1	-	-	-	-	-	-	82	82	-	61	61	-
Stage 2	-	-	-	-	-	-	66	61	-	82	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1553	-	-	1550	-	-	820	748	1031	826	734	1014
Stage 1	-	-	-	-	-	-	926	827	-	950	844	-
Stage 2	-	-	-	-	-	-	945	844	-	926	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1553	-	-	1550	-	-	802	735	1031	814	722	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	802	735	-	814	722	-
Stage 1	-	-	-	-	-	-	913	815	-	937	841	-
Stage 2	-	-	-	-	-	-	933	841	-	912	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.5	9.6	8.9
HCM LOS			A	A

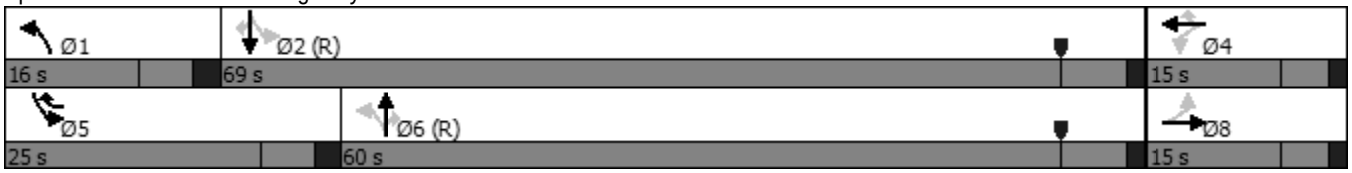
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1553	-	-	1550	-	-	930
HCM Lane V/C Ratio	0.016	0.014	-	-	0.002	-	-	0.01
HCM Control Delay (s)	9.6	7.3	0	-	7.3	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection Capacity Worksheets: Year 2026 Background With Improvements

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	3	107	3	710	2	817	207	382	490	12
Future Volume (vph)	5	3	107	3	710	2	817	207	382	490	12
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		10.0		10.0	34.0	62.0	53.5	53.5	79.0	75.7	75.7
Actuated g/C Ratio		0.10		0.10	0.34	0.62	0.54	0.54	0.79	0.76	0.76
v/c Ratio		0.10		1.08	1.59	0.01	1.09	0.28	0.55	0.22	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.59
Intersection Signal Delay: 115.4
Intersection Capacity Utilization 106.5%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	145	934	3	1061	269	439	563	14
v/c Ratio	0.10	1.08	1.59	0.01	1.09	0.28	0.55	0.22	0.01
Control Delay	37.4	145.8	297.0	4.5	80.1	6.0	20.7	4.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	145.8	297.0	4.5	80.1	6.0	20.7	4.3	0.0
Queue Length 50th (ft)	7	~104	~826	0	~792	43	75	38	0
Queue Length 95th (ft)	21	#178	#833	m0	#798	m65	118	93	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	144	134	589	619	977	958	797	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	1.08	1.59	0.00	1.09	0.28	0.55	0.22	0.01

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.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	2	107	3	710	2	817	207	382	490	12
Future Volume (veh/h)	5	3	2	107	3	710	2	817	207	382	490	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	4	3	141	4	0	3	1061	269	439	563	14
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.77	0.77	0.77	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	128	69	39	211	4		623	1187	1022	550	2473	1138
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.01	0.65	0.65	0.08	0.72	0.72
Sat Flow, veh/h	736	695	390	1404	40	1585	1781	1841	1584	3456	3441	1584
Grp Volume(v), veh/h	14	0	0	145	0	0	3	1061	269	439	563	14
Grp Sat Flow(s),veh/h/ln	1820	0	0	1444	0	1585	1781	1841	1584	1728	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	9.3	0.0	0.0	0.1	48.3	7.3	4.3	5.5	0.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	10.0	0.0	0.0	0.1	48.3	7.3	4.3	5.5	0.3
Prop In Lane	0.50		0.21	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	0	0	215	0		623	1187	1022	550	2473	1138
V/C Ratio(X)	0.06	0.00	0.00	0.67	0.00		0.00	0.89	0.26	0.80	0.23	0.01
Avail Cap(c_a), veh/h	236	0	0	215	0		789	1187	1022	930	2473	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	44.9	0.0	0.0	6.1	14.9	7.6	24.7	4.7	4.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	8.9	0.0	0.0	0.0	10.5	0.6	2.7	0.2	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	0.0	0.0	4.1	0.0	0.0	0.0	19.2	2.2	3.5	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	53.8	0.0	0.0	6.1	25.3	8.2	27.4	4.9	4.0
LnGrp LOS	D	A	A	D	A		A	C	A	C	A	A
Approach Vol, veh/h		14			145	A		1333			1016	
Approach Delay, s/veh		41.0			53.8			21.8			14.6	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	78.4		15.0	14.0	71.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	7.5		12.0	6.3	50.3		2.7				
Green Ext Time (p_c), s	0.0	17.1		0.0	1.3	3.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		20.9	
HCM 6th LOS		C	

Notes

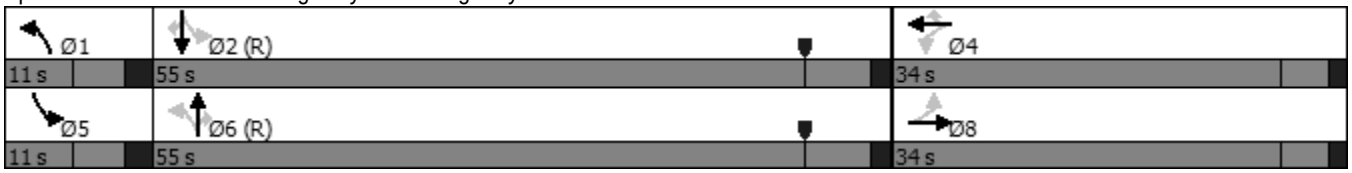
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	27	0	7	0	40	3	917	2	26	544	19
Future Volume (vph)	27	0	7	0	40	3	917	2	26	544	19
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	55.0	55.0	11.0	55.0	55.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	11.0%	55.0%	55.0%	11.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)		6.2		6.2	6.2	83.1	81.9	81.9	86.0	86.8	86.8
Actuated g/C Ratio		0.06		0.06	0.06	0.83	0.82	0.82	0.86	0.87	0.87
v/c Ratio		0.20		0.06	0.21	0.01	0.82	0.00	0.15	0.47	0.02

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 12.4
Intersection Capacity Utilization 72.8%
Analysis Period (min) 15

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	7	40	4	1223	3	35	725	25
v/c Ratio	0.20	0.06	0.21	0.01	0.82	0.00	0.15	0.47	0.02
Control Delay	2.2	44.9	2.4	2.0	16.9	0.0	3.9	6.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	44.9	2.4	2.0	16.9	0.0	3.9	6.8	0.2
Queue Length 50th (ft)	0	4	0	0	600	0	4	229	0
Queue Length 95th (ft)	0	18	0	2	579	0	m8	m311	m1
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	579	540	525	613	1496	1312	236	1555	1275
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.01	0.08	0.01	0.82	0.00	0.15	0.47	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	3	7	0	40	3	917	2	26	544	19
Future Volume (veh/h)	27	0	3	7	0	40	3	917	2	26	544	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	38	0	4	7	0	0	4	1223	3	35	725	25
Peak Hour Factor	0.71	0.71	0.71	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	149	4	9	172	0		502	1343	1135	216	1368	1176
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.00	0.01	0.73	0.73	0.03	0.76	0.76
Sat Flow, veh/h	1257	55	138	1555	0	1585	1781	1841	1556	1781	1811	1557
Grp Volume(v), veh/h	42	0	0	7	0	0	4	1223	3	35	725	25
Grp Sat Flow(s),veh/h/ln	1450	0	0	1555	0	1585	1781	1841	1556	1781	1811	1557
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.1	53.5	0.1	0.5	16.3	0.4
Cycle Q Clear(g_c), s	2.7	0.0	0.0	0.4	0.0	0.0	0.1	53.5	0.1	0.5	16.3	0.4
Prop In Lane	0.90		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	162	0	0	172	0		502	1343	1135	216	1368	1176
V/C Ratio(X)	0.26	0.00	0.00	0.04	0.00		0.01	0.91	0.00	0.16	0.53	0.02
Avail Cap(c_a), veh/h	484	0	0	488	0		582	1343	1135	249	1368	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.0	0.0	0.0	44.0	0.0	0.0	4.5	10.9	3.7	18.4	5.0	3.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.1	0.0	0.0	0.0	10.8	0.0	0.3	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.2	0.0	0.0	0.0	18.5	0.0	0.4	4.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	0.0	0.0	44.1	0.0	0.0	4.5	21.7	3.7	18.8	6.5	3.1
LnGrp LOS	D	A	A	D	A		A	C	A	B	A	A
Approach Vol, veh/h		42			7	A		1230			785	
Approach Delay, s/veh		45.9			44.1			21.6			6.9	
Approach LOS		D			D			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	82.0		11.4	9.1	79.5		11.4				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	5.0	48.5		29.0	5.0	48.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	18.3		2.4	2.5	55.5		4.7				
Green Ext Time (p_c), s	0.0	5.2		0.0	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

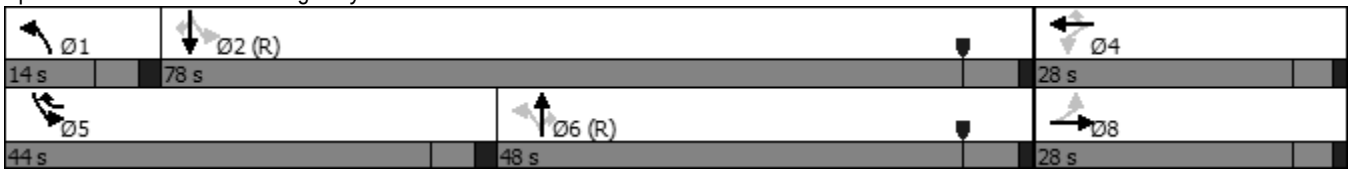
Notes

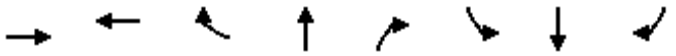
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	21	2	191	2	518	692	188	636	847	7	
Future Volume (vph)	21	2	191	2	518	692	188	636	847	7	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	28.0	28.0	28.0	28.0	44.0	48.0	48.0	44.0	78.0	78.0	14.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	36.7%	40.0%	40.0%	36.7%	65.0%	65.0%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		23.0		23.0	55.8	51.7	51.7	86.0	85.5	85.5	
Actuated g/C Ratio		0.19		0.19	0.46	0.43	0.43	0.72	0.71	0.71	
v/c Ratio		0.27		0.83	0.75	0.94	0.26	0.78	0.40	0.01	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 30.0
Intersection Capacity Utilization 88.1%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.





Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	214	576	736	200	723	963	8
v/c Ratio	0.27	0.83	0.75	0.94	0.26	0.78	0.40	0.01
Control Delay	37.5	73.5	29.2	47.2	9.1	35.8	7.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	73.5	29.2	47.2	9.1	35.8	7.5	0.0
Queue Length 50th (ft)	29	161	325	353	15	213	140	0
Queue Length 95th (ft)	38	#294	390	#913	m76	246	167	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	211	257	899	787	759	1192	2426	1096
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	0.27	0.83	0.64	0.94	0.26	0.61	0.40	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2	8	191	2	518	0	692	188	636	847	7
Future Volume (veh/h)	21	2	8	191	2	518	0	692	188	636	847	7
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	38	4	14	212	2	0	0	736	200	723	962	8
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	264	33	82	335	3		369	976	835	829	2452	1121
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.00	0.00	0.53	0.53	0.13	0.71	0.71
Sat Flow, veh/h	1114	173	429	1436	14	1585	1781	1841	1576	3456	3441	1574
Grp Volume(v), veh/h	56	0	0	214	0	0	0	736	200	723	962	8
Grp Sat Flow(s),veh/h/ln	1716	0	0	1450	0	1585	1781	1841	1576	1728	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	13.4	0.0	0.0	0.0	37.6	8.2	11.2	13.4	0.2
Cycle Q Clear(g_c), s	3.1	0.0	0.0	16.5	0.0	0.0	0.0	37.6	8.2	11.2	13.4	0.2
Prop In Lane	0.68		0.25	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	0	0	338	0		369	976	835	829	2452	1121
V/C Ratio(X)	0.15	0.00	0.00	0.63	0.00		0.00	0.75	0.24	0.87	0.39	0.01
Avail Cap(c_a), veh/h	379	0	0	338	0		486	976	835	1466	2452	1121
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	0.0	45.6	0.0	0.0	0.0	22.1	15.2	22.8	6.9	5.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	8.8	0.0	0.0	0.0	5.4	0.7	3.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	6.8	0.0	0.0	0.0	16.3	2.9	5.7	4.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	0.0	0.0	54.3	0.0	0.0	0.0	27.5	15.9	25.8	7.4	5.0
LnGrp LOS	D	A	A	D	A		A	C	B	C	A	A
Approach Vol, veh/h		56			214	A		936			1693	
Approach Delay, s/veh		41.3			54.3			25.0			15.2	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	92.0		28.0	21.9	70.1		28.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	71.5		23.0	38.0	41.5		23.0				
Max Q Clear Time (g_c+I1), s	0.0	15.4		18.5	13.2	39.6		5.1				
Green Ext Time (p_c), s	0.0	33.0		0.6	2.7	1.7		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		21.8	
HCM 6th LOS		C	

Notes

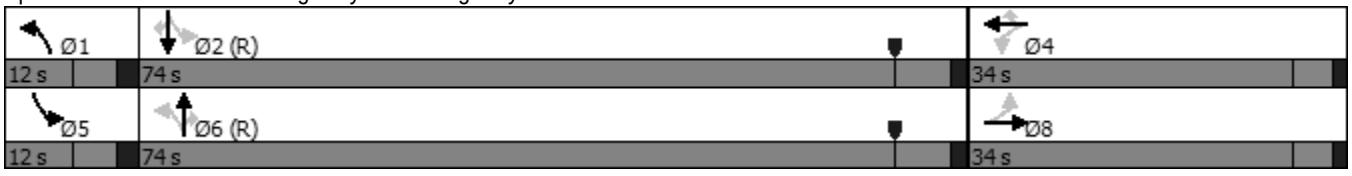
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	22	0	5	0	42	6	779	11	43	923	30
Future Volume (vph)	22	0	5	0	42	6	779	11	43	923	30
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	12.0	74.0	74.0	12.0	74.0	74.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	10.0%	61.7%	61.7%	10.0%	61.7%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		6.2		6.2	6.2	99.3	95.6	95.6	104.2	103.4	103.4
Actuated g/C Ratio		0.05		0.05	0.05	0.83	0.80	0.80	0.87	0.86	0.86
v/c Ratio		0.24		0.07	0.33	0.06	0.71	0.01	0.18	0.95	0.04

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68.5 (57%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 17.7
Intersection Capacity Utilization 66.4%
Analysis Period (min) 15

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	37	6	53	8	1039	15	68	1465	48
v/c Ratio	0.24	0.07	0.33	0.06	0.71	0.01	0.18	0.95	0.04
Control Delay	3.7	55.4	9.0	2.5	11.8	0.0	2.2	24.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	55.4	9.0	2.5	11.8	0.0	2.2	24.0	0.1
Queue Length 50th (ft)	0	5	0	1	396	0	5	391	0
Queue Length 95th (ft)	0	17	6	2	412	0	m7	663	m0
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	397	401	441	150	1455	1159	371	1543	1317
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.01	0.12	0.05	0.71	0.01	0.18	0.95	0.04

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	5	5	0	42	6	779	11	43	923	30
Future Volume (veh/h)	22	0	5	5	0	42	6	779	11	43	923	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.97		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	30	0	7	6	0	0	8	1039	15	68	1465	48
Peak Hour Factor	0.73	0.73	0.73	0.79	0.79	0.79	0.75	0.75	0.75	0.63	0.63	0.63
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	125	6	18	158	0		77	1385	1171	357	1412	1215
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.00	0.01	0.75	0.75	0.04	0.78	0.78
Sat Flow, veh/h	1091	89	275	1521	0	1585	1781	1841	1557	1781	1811	1558
Grp Volume(v), veh/h	37	0	0	6	0	0	8	1039	15	68	1465	48
Grp Sat Flow(s),veh/h/ln	1455	0	0	1521	0	1585	1781	1841	1557	1781	1811	1558
Q Serve(g_s), s	2.4	0.0	0.0	0.0	0.0	0.0	0.1	38.5	0.3	1.0	93.6	0.8
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.4	0.0	0.0	0.1	38.5	0.3	1.0	93.6	0.8
Prop In Lane	0.81		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	0	0	158	0		77	1385	1171	357	1412	1215
V/C Ratio(X)	0.25	0.00	0.00	0.04	0.00		0.10	0.75	0.01	0.19	1.04	0.04
Avail Cap(c_a), veh/h	402	0	0	404	0		149	1385	1171	380	1412	1215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	0.0	0.0	52.7	0.0	0.0	37.4	8.5	3.7	9.8	13.2	3.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.1	0.0	0.0	0.6	3.8	0.0	0.3	34.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.2	0.0	0.0	0.2	12.7	0.1	0.6	37.8	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	0.0	0.0	52.8	0.0	0.0	37.9	12.2	3.7	10.1	47.4	3.1
LnGrp LOS	D	A	A	D	A		D	B	A	B	D	A
Approach Vol, veh/h		37			6	A		1062			1581	
Approach Delay, s/veh		54.7			52.8			12.3			44.4	
Approach LOS		D			D			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	100.1		12.7	10.5	96.8		12.7				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	6.0	67.5		29.0	6.0	67.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	95.6		2.4	3.0	40.5		4.8				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	9.1		0.1				

Intersection Summary		
HCM 6th Ctrl Delay		31.9
HCM 6th LOS		C

Notes

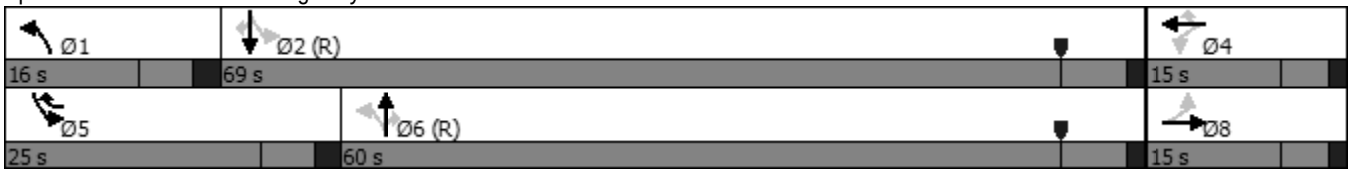
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection Capacity Worksheets: Year 2042 Background

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	105	5	680	2	1110	200	365	655	15
Future Volume (vph)	5	5	105	5	680	2	1110	200	365	655	15
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		10.0		10.0	34.0	62.0	53.5	53.5	79.0	75.7	75.7
Actuated g/C Ratio		0.10		0.10	0.34	0.62	0.54	0.54	0.79	0.76	0.76
v/c Ratio		0.11		0.93	1.35	0.00	1.24	0.23	0.97	0.28	0.01

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.35
Intersection Signal Delay: 105.3
Intersection Capacity Utilization 120.1%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	125	773	2	1207	217	397	712	16
v/c Ratio	0.11	0.93	1.35	0.00	1.24	0.23	0.97	0.28	0.01
Control Delay	37.8	108.4	196.4	3.5	139.4	3.9	66.9	4.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	108.4	196.4	3.5	139.4	3.9	66.9	4.6	0.0
Queue Length 50th (ft)	8	80	~630	0	~958	14	200	51	0
Queue Length 95th (ft)	25	#186	#832	1	#1209	49	#391	127	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	158	134	573	559	977	925	411	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.93	1.35	0.00	1.24	0.23	0.97	0.28	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	2	105	5	680	2	1110	200	365	655	15
Future Volume (veh/h)	5	5	2	105	5	680	2	1110	200	365	655	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	7	3	119	6	0	2	1207	217	397	712	16
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	105	94	32	209	7		468	985	847	410	2480	1142
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.54	0.54	0.19	0.72	0.72
Sat Flow, veh/h	539	936	316	1383	70	1585	1781	1841	1584	1781	3441	1584
Grp Volume(v), veh/h	17	0	0	125	0	0	2	1207	217	397	712	16
Grp Sat Flow(s),veh/h/ln	1792	0	0	1453	0	1585	1781	1841	1584	1781	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	7.6	0.0	0.0	0.1	53.5	7.4	18.0	7.3	0.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	8.4	0.0	0.0	0.1	53.5	7.4	18.0	7.3	0.3
Prop In Lane	0.41		0.18	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	0	0	216	0		468	985	847	410	2480	1142
V/C Ratio(X)	0.07	0.00	0.00	0.58	0.00		0.00	1.23	0.26	0.97	0.29	0.01
Avail Cap(c_a), veh/h	230	0	0	216	0		639	985	847	410	2480	1142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	0.0	44.2	0.0	0.0	10.6	23.2	12.5	33.8	4.9	3.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	4.7	0.0	0.0	0.0	110.7	0.7	35.8	0.3	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	0.0	0.0	3.3	0.0	0.0	0.0	50.1	2.5	12.6	2.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	0.0	0.0	48.9	0.0	0.0	10.6	133.9	13.3	69.7	5.2	4.0
LnGrp LOS	D	A	A	D	A		B	F	B	E	A	A
Approach Vol, veh/h		17			125	A		1426			1125	
Approach Delay, s/veh		41.1			48.9			115.4			27.9	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	78.6		15.0	25.0	60.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	9.3		10.4	20.0	55.5		2.9				
Green Ext Time (p_c), s	0.0	22.6		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		75.3
HCM 6th LOS		E

Notes

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

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

Intersection	
Int Delay, s/veh	80

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	5	30	0	195	5	1030	45	115	615	20
Future Vol, veh/h	30	0	5	30	0	195	5	1030	45	115	615	20
Conflicting Peds, #/hr	4	0	0	0	0	4	27	0	0	0	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	100	100	100	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	42	0	7	30	0	195	5	1120	49	125	668	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2104	2124	695	2063	2097	1124	717	0	0	1169	0	0
Stage 1	945	945	-	1130	1130	-	-	-	-	-	-	-
Stage 2	1159	1179	-	933	967	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 38	51	442	40	53	250	884	-	-	598	-	-
Stage 1	314	343	-	248	281	-	-	-	-	-	-	-
Stage 2	238	267	-	319	335	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 7	39	431	33	41	249	861	-	-	598	-	-
Mov Cap-2 Maneuver	~ 7	39	-	33	41	-	-	-	-	-	-	-
Stage 1	304	264	-	247	279	-	-	-	-	-	-	-
Stage 2	51	265	-	248	258	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	3227.9	90.3	0	1.9
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	861	-	-	8	33	249	598	-	-
HCM Lane V/C Ratio	0.006	-	-	6.162	0.909	0.783	0.209	-	-
HCM Control Delay (s)	9.2	-	-	$ 3227.9	$ 305.9	57.1	12.6	-	-
HCM Lane LOS	A	-	-	F	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	7.6	3.2	5.8	0.8	-	-

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	140	10	0	205	5	10	1	0	0	1	10
Future Vol, veh/h	10	140	10	0	205	5	10	1	0	0	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	75	75	75	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	159	11	0	233	6	13	1	0	0	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	170	0	0	429	426	165	423	428	236
Stage 1	-	-	-	-	-	-	187	187	-	236	236	-
Stage 2	-	-	-	-	-	-	242	239	-	187	192	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1328	-	-	1407	-	-	536	520	879	541	519	803
Stage 1	-	-	-	-	-	-	815	745	-	767	710	-
Stage 2	-	-	-	-	-	-	762	708	-	815	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1328	-	-	1407	-	-	524	515	879	536	514	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	524	515	-	536	514	-
Stage 1	-	-	-	-	-	-	808	738	-	760	710	-
Stage 2	-	-	-	-	-	-	750	708	-	806	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	12.1	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	523	1328	-	-	1407	-	-	764
HCM Lane V/C Ratio	0.028	0.009	-	-	-	-	-	0.016
HCM Control Delay (s)	12.1	7.7	0	-	0	-	-	9.8
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	10	1	180	30	1
Future Vol, veh/h	130	10	1	180	30	1
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	88	88	88	88	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	148	11	1	205	40	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	159	0	361	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	207	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1420	-	638	892
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1420	-	637	892
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	827	-

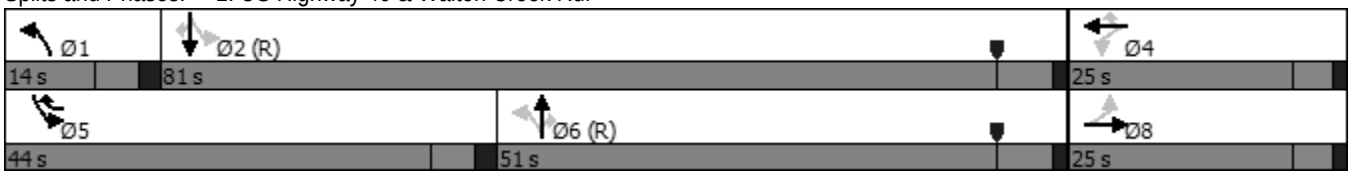
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

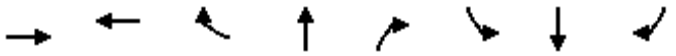
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	643	-	-	1420	-
HCM Lane V/C Ratio	0.064	-	-	0.001	-
HCM Control Delay (s)	11	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	25	2	185	2	505	910	185	620	1120	10	
Future Volume (vph)	25	2	185	2	505	910	185	620	1120	10	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	25.0	25.0	25.0	25.0	44.0	51.0	51.0	44.0	81.0	81.0	14.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%	36.7%	42.5%	42.5%	36.7%	67.5%	67.5%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		20.0		20.0	63.0	44.5	44.5	89.0	88.5	88.5	
Actuated g/C Ratio		0.17		0.17	0.52	0.37	0.37	0.74	0.74	0.74	
v/c Ratio		0.43		0.95	0.66	1.43	0.30	1.08	0.48	0.01	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 23 (19%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 86.3
Intersection Capacity Utilization 110.7%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



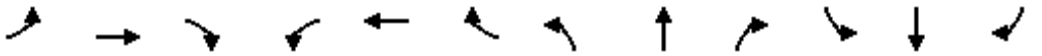


Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	208	561	968	197	674	1217	11
v/c Ratio	0.43	0.95	0.66	1.43	0.30	1.08	0.48	0.01
Control Delay	46.1	99.2	24.2	233.0	11.2	93.7	7.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	99.2	24.2	233.0	11.2	93.7	7.2	0.0
Queue Length 50th (ft)	38	161	288	~1014	35	~534	176	0
Queue Length 95th (ft)	47	#313	418	#1264	91	#768	215	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	155	219	846	677	653	622	2511	1132
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	0.43	0.95	0.66	1.43	0.30	1.08	0.48	0.01

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	10	185	2	505	0	910	185	620	1120	10
Future Volume (veh/h)	25	2	10	185	2	505	0	910	185	620	1120	10
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	45	4	18	206	2	0	0	968	197	674	1217	11
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	236	27	78	302	2		230	683	580	624	2538	1161
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.00	0.37	0.37	0.32	0.74	0.74
Sat Flow, veh/h	1115	163	469	1454	14	1585	1781	1841	1564	1781	3441	1574
Grp Volume(v), veh/h	67	0	0	208	0	0	0	968	197	674	1217	11
Grp Sat Flow(s),veh/h/ln	1747	0	0	1468	0	1585	1781	1841	1564	1781	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	12.4	0.0	0.0	0.0	44.5	10.9	38.0	17.2	0.2
Cycle Q Clear(g_c), s	3.9	0.0	0.0	16.3	0.0	0.0	0.0	44.5	10.9	38.0	17.2	0.2
Prop In Lane	0.67		0.27	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	0	304	0		230	683	580	624	2538	1161
V/C Ratio(X)	0.20	0.00	0.00	0.68	0.00		0.00	1.42	0.34	1.08	0.48	0.01
Avail Cap(c_a), veh/h	341	0	0	304	0		347	683	580	624	2538	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	0.0	48.1	0.0	0.0	0.0	37.8	27.2	35.8	6.4	4.2
Incr Delay (d2), s/veh	1.3	0.0	0.0	11.8	0.0	0.0	0.0	196.7	1.6	59.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	7.0	0.0	0.0	0.0	56.2	4.2	26.6	5.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	0.0	59.9	0.0	0.0	0.0	234.5	28.8	95.3	7.0	4.2
LnGrp LOS	D	A	A	E	A		A	F	C	F	A	A
Approach Vol, veh/h		67			208	A		1165			1902	
Approach Delay, s/veh		44.6			59.9			199.7			38.3	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.0		25.0	44.0	51.0		25.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	74.5		20.0	38.0	44.5		20.0				
Max Q Clear Time (g_c+I1), s	0.0	19.2		18.3	40.0	46.5		5.9				
Green Ext Time (p_c), s	0.0	41.6		0.2	0.0	0.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		96.0	
HCM 6th LOS		F	

Notes

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

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

Intersection	
Int Delay, s/veh	80.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	5	40	0	145	5	875	50	170	1045	35
Future Vol, veh/h	25	0	5	40	0	145	5	875	50	170	1045	35
Conflicting Peds, #/hr	5	0	0	0	0	5	13	0	27	27	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	88	88	88	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	34	0	7	45	0	165	5	951	54	185	1136	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2512	2561	1149	2517	2545	983	1187	0	0	1032	0	0
Stage 1	1519	1519	-	988	988	-	-	-	-	-	-	-
Stage 2	993	1042	-	1529	1557	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 19	27	242	~ 19	27	302	588	-	-	673	-	-
Stage 1	148	183	-	297	328	-	-	-	-	-	-	-
Stage 2	296	309	-	147	175	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 6	18	239	~ 14	18	293	581	-	-	656	-	-
Mov Cap-2 Maneuver	~ 6	18	-	~ 14	18	-	-	-	-	-	-	-
Stage 1	145	130	-	287	317	-	-	-	-	-	-	-
Stage 2	128	298	-	103	124	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 3215.2	$ 362.9	0.1	1.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	581	-	-	7	14	293	656	-	-
HCM Lane V/C Ratio	0.009	-	-	5.871	3.247	0.562	0.282	-	-
HCM Control Delay (s)	11.3	-	-	$ 3215.2	$ 1562.2	32	12.6	-	-
HCM Lane LOS	B	-	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	6.6	6.5	3.2	1.2	-	-

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	185	20	5	170	5	10	1	0	0	2	5
Future Vol, veh/h	15	185	20	5	170	5	10	1	0	0	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	86	86	86	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	210	23	6	193	6	12	1	0	0	2	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	199	0	0	233	0	0	468	467	222	464	475	196
Stage 1	-	-	-	-	-	-	256	256	-	208	208	-
Stage 2	-	-	-	-	-	-	212	211	-	256	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1373	-	-	1335	-	-	505	493	818	508	488	845
Stage 1	-	-	-	-	-	-	749	696	-	794	730	-
Stage 2	-	-	-	-	-	-	790	728	-	749	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1373	-	-	1335	-	-	493	484	818	500	479	845
Mov Cap-2 Maneuver	-	-	-	-	-	-	493	484	-	500	479	-
Stage 1	-	-	-	-	-	-	739	686	-	783	726	-
Stage 2	-	-	-	-	-	-	779	724	-	737	678	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	12.5	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1373	-	-	1335	-	-	694
HCM Lane V/C Ratio	0.026	0.012	-	-	0.004	-	-	0.011
HCM Control Delay (s)	12.5	7.7	0	-	7.7	0	-	10.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	15	1	145	35	1
Future Vol, veh/h	170	15	1	145	35	1
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	88	88	88	88	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	17	1	165	41	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	210	0	369	202
Stage 1	-	-	-	-	202	-
Stage 2	-	-	-	-	167	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1361	-	631	839
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1361	-	630	839
Mov Cap-2 Maneuver	-	-	-	-	630	-
Stage 1	-	-	-	-	832	-
Stage 2	-	-	-	-	862	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.1
HCM LOS			B

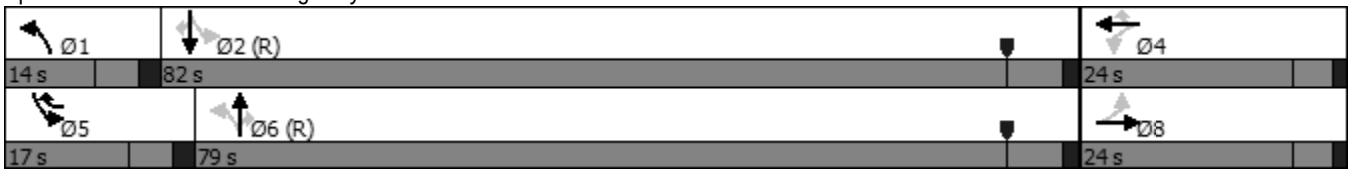
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	634	-	-	1361	-
HCM Lane V/C Ratio	0.066	-	-	0.001	-
HCM Control Delay (s)	11.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection Capacity Worksheets: Year 2042 Background With Improvements

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	105	5	680	2	1110	200	365	655	15
Future Volume (vph)	5	5	105	5	680	2	1110	200	365	655	15
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	24.0	24.0	24.0	24.0	17.0	14.0	79.0	79.0	17.0	82.0	82.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	14.2%	11.7%	65.8%	65.8%	14.2%	68.3%	68.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		20.9		20.9	36.9	79.1	70.6	70.6	87.5	84.8	84.8
Actuated g/C Ratio		0.17		0.17	0.31	0.66	0.59	0.59	0.73	0.71	0.71
v/c Ratio		0.06		0.53	1.43	0.00	0.59	0.21	0.60	0.30	0.01

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 63.2
Intersection Capacity Utilization 92.4%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	125	773	2	1207	217	397	712	16
v/c Ratio	0.06	0.53	1.43	0.00	0.59	0.21	0.60	0.30	0.01
Control Delay	38.4	55.6	235.3	4.0	16.8	1.8	8.9	7.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	55.6	235.3	4.0	16.8	1.8	8.9	7.3	0.0
Queue Length 50th (ft)	9	91	~793	0	281	0	38	80	0
Queue Length 95th (ft)	26	154	#1003	2	342	30	52	161	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	287	235	539	537	2097	1042	666	2405	1113
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.53	1.43	0.00	0.58	0.21	0.60	0.30	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	2	105	5	680	2	1110	200	365	655	15
Future Volume (veh/h)	5	5	2	105	5	680	2	1110	200	365	655	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	7	3	119	6	0	2	1207	217	397	712	16
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	136	129	48	276	11		512	2200	997	667	2380	1095
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.63	0.63	0.07	0.69	0.69
Sat Flow, veh/h	595	818	303	1371	69	1585	1781	3497	1584	3456	3441	1584
Grp Volume(v), veh/h	17	0	0	125	0	0	2	1207	217	397	712	16
Grp Sat Flow(s),veh/h/ln	1715	0	0	1440	0	1585	1781	1749	1584	1728	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	8.5	0.0	0.0	0.0	23.5	7.1	4.5	9.7	0.4
Cycle Q Clear(g_c), s	1.0	0.0	0.0	9.5	0.0	0.0	0.0	23.5	7.1	4.5	9.7	0.4
Prop In Lane	0.41		0.18	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	0	0	287	0		512	2200	997	667	2380	1095
V/C Ratio(X)	0.05	0.00	0.00	0.44	0.00		0.00	0.55	0.22	0.60	0.30	0.01
Avail Cap(c_a), veh/h	314	0	0	287	0		623	2200	997	754	2380	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	0.0	46.4	0.0	0.0	8.1	12.6	9.6	11.5	7.2	5.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	4.8	0.0	0.0	0.0	1.0	0.5	1.0	0.3	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	0.0	0.0	3.8	0.0	0.0	0.0	8.4	2.3	1.6	3.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	0.0	51.2	0.0	0.0	8.1	13.6	10.1	12.5	7.5	5.8
LnGrp LOS	D	A	A	D	A		A	B	B	B	A	A
Approach Vol, veh/h		17			125	A		1426			1125	
Approach Delay, s/veh		43.0			51.2			13.0			9.3	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	89.5		24.0	14.0	82.0		24.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	75.5		19.0	11.0	72.5		19.0				
Max Q Clear Time (g_c+I1), s	2.0	11.7		11.5	6.5	25.5		3.0				
Green Ext Time (p_c), s	0.0	24.3		0.4	0.6	39.4		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	13.4	
HCM 6th LOS	B	

Notes

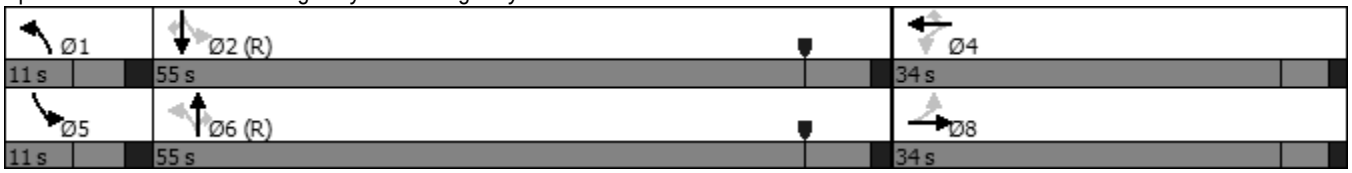
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	0	30	0	195	5	1030	45	115	615	20
Future Volume (vph)	30	0	30	0	195	5	1030	45	115	615	20
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	55.0	55.0	11.0	55.0	55.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	11.0%	55.0%	55.0%	11.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)		9.8		9.8	9.8	70.4	64.3	64.3	79.2	76.4	76.4
Actuated g/C Ratio		0.10		0.10	0.10	0.70	0.64	0.64	0.79	0.76	0.76
v/c Ratio		0.22		0.21	0.69	0.01	0.95	0.05	0.56	0.49	0.02

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 24.5
Intersection Capacity Utilization 86.1%
Analysis Period (min) 15

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	30	195	5	1120	49	125	668	22
v/c Ratio	0.22	0.21	0.69	0.01	0.95	0.05	0.56	0.49	0.02
Control Delay	2.2	42.6	25.1	3.8	36.6	0.8	24.0	7.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	42.6	25.1	3.8	36.6	0.8	24.0	7.6	0.1
Queue Length 50th (ft)	0	18	29	1	567	0	23	106	0
Queue Length 95th (ft)	0	43	95	4	#1074	5	87	362	0
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	462	431	556	570	1174	1048	224	1368	1132
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.07	0.35	0.01	0.95	0.05	0.56	0.49	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	5	30	0	195	5	1030	45	115	615	20
Future Volume (veh/h)	30	0	5	30	0	195	5	1030	45	115	615	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	42	0	7	30	0	0	5	1120	49	125	668	22
Peak Hour Factor	0.71	0.71	0.71	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	154	5	15	182	0		534	1299	1097	277	1354	1163
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.00	0.01	0.71	0.71	0.05	0.75	0.75
Sat Flow, veh/h	1230	74	217	1547	0	1585	1781	1841	1555	1781	1811	1556
Grp Volume(v), veh/h	49	0	0	30	0	0	5	1120	49	125	668	22
Grp Sat Flow(s),veh/h/ln	1521	0	0	1547	0	1585	1781	1841	1555	1781	1811	1556
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.0	0.0	0.1	45.8	1.0	1.8	14.8	0.4
Cycle Q Clear(g_c), s	2.9	0.0	0.0	1.6	0.0	0.0	0.1	45.8	1.0	1.8	14.8	0.4
Prop In Lane	0.86		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	0	182	0		534	1299	1097	277	1354	1163
V/C Ratio(X)	0.28	0.00	0.00	0.16	0.00		0.01	0.86	0.04	0.45	0.49	0.02
Avail Cap(c_a), veh/h	490	0	0	488	0		611	1299	1097	280	1354	1163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	0.0	43.9	0.0	0.0	4.7	11.1	4.5	17.5	5.1	3.2
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.0	7.7	0.1	1.1	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.7	0.0	0.0	0.0	16.0	0.3	1.6	4.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	0.0	44.3	0.0	0.0	4.7	18.8	4.6	18.6	6.3	3.3
LnGrp LOS	D	A	A	D	A		A	B	A	B	A	A
Approach Vol, veh/h		49			30	A		1174			815	
Approach Delay, s/veh		45.3			44.3			18.2			8.1	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	81.2		12.1	10.8	77.0		12.1				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	5.0	48.5		29.0	5.0	48.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	16.8		3.6	3.8	47.8		4.9				
Green Ext Time (p_c), s	0.0	4.6		0.1	0.0	0.5		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		15.2
HCM 6th LOS		B

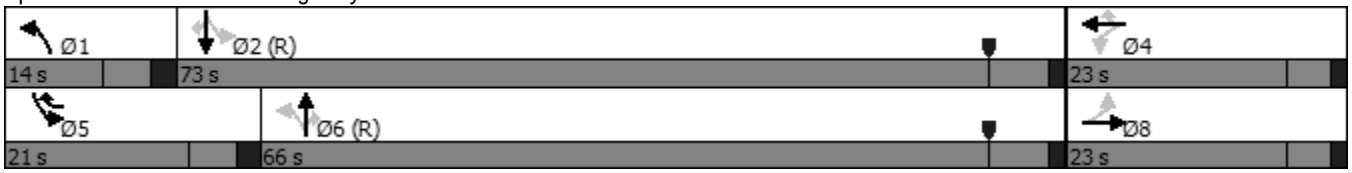
Notes

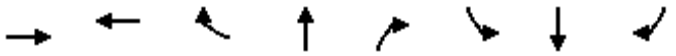
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	25	2	185	2	505	910	185	620	1120	10	
Future Volume (vph)	25	2	185	2	505	910	185	620	1120	10	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	23.0	23.0	23.0	23.0	21.0	66.0	66.0	21.0	73.0	73.0	14.0
Total Split (%)	20.9%	20.9%	20.9%	20.9%	19.1%	60.0%	60.0%	19.1%	66.4%	66.4%	13%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	None	None	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		22.8		22.8	42.6	54.9	54.9	76.2	75.7	75.7	
Actuated g/C Ratio		0.21		0.21	0.39	0.50	0.50	0.69	0.69	0.69	
v/c Ratio		0.28		0.76	0.83	0.56	0.22	0.79	0.52	0.01	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 20.3
Intersection Capacity Utilization 76.0%
Analysis Period (min) 15

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.

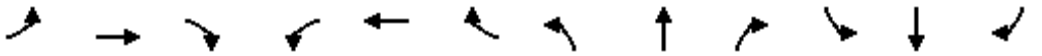




Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	208	561	968	197	674	1217	11
v/c Ratio	0.28	0.76	0.83	0.56	0.22	0.79	0.52	0.01
Control Delay	36.2	62.5	38.7	20.1	2.4	16.6	8.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	62.5	38.7	20.1	2.4	16.6	8.9	0.0
Queue Length 50th (ft)	33	147	320	218	0	69	163	0
Queue Length 95th (ft)	43	#297	#541	274	33	129	202	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	240	273	677	1877	935	856	2363	1073
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	0.28	0.76	0.83	0.52	0.21	0.79	0.52	0.01

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	10	185	2	505	0	910	185	620	1120	10
Future Volume (veh/h)	25	2	10	185	2	505	0	910	185	620	1120	10
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	45	4	18	206	2	0	0	968	197	674	1217	11
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	237	28	77	303	2		328	2008	905	871	2518	1152
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.57	0.57	0.10	0.73	0.73
Sat Flow, veh/h	1112	170	471	1456	14	1585	1781	3497	1577	3456	3441	1574
Grp Volume(v), veh/h	67	0	0	208	0	0	0	968	197	674	1217	11
Grp Sat Flow(s),veh/h/ln	1753	0	0	1470	0	1585	1781	1749	1577	1728	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	11.4	0.0	0.0	0.0	17.9	6.7	8.1	16.1	0.2
Cycle Q Clear(g_c), s	3.6	0.0	0.0	15.0	0.0	0.0	0.0	17.9	6.7	8.1	16.1	0.2
Prop In Lane	0.67		0.27	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	0	0	306	0		328	2008	905	871	2518	1152
V/C Ratio(X)	0.20	0.00	0.00	0.68	0.00		0.00	0.48	0.22	0.77	0.48	0.01
Avail Cap(c_a), veh/h	342	0	0	306	0		456	2008	905	987	2518	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	0.0	44.4	0.0	0.0	0.0	13.8	11.4	12.7	6.1	4.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	6.7	0.0	0.0	0.0	0.8	0.6	3.4	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	6.0	0.0	0.0	0.0	6.6	2.3	2.8	4.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	0.0	0.0	51.1	0.0	0.0	0.0	14.6	11.9	16.2	6.8	4.0
LnGrp LOS	D	A	A	D	A		A	B	B	B	A	A
Approach Vol, veh/h		67			208	A		1165			1902	
Approach Delay, s/veh		41.2			51.1			14.2			10.1	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	87.0		23.0	17.3	69.7		23.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	66.5		18.0	15.0	59.5		18.0				
Max Q Clear Time (g_c+I1), s	0.0	18.1		17.0	10.1	19.9		5.6				
Green Ext Time (p_c), s	0.0	37.5		0.1	1.2	29.5		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		14.7	
HCM 6th LOS		B	

Notes

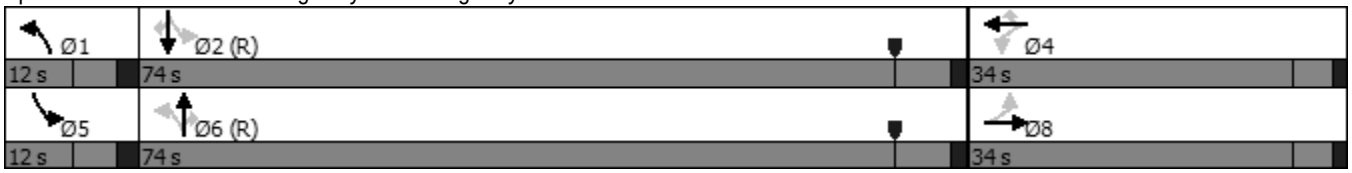
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	25	0	40	0	145	5	875	50	170	1045	35
Future Volume (vph)	25	0	40	0	145	5	875	50	170	1045	35
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	12.0	74.0	74.0	12.0	74.0	74.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	10.0%	61.7%	61.7%	10.0%	61.7%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		9.4		9.4	9.4	82.5	76.4	76.4	99.6	96.8	96.8
Actuated g/C Ratio		0.08		0.08	0.08	0.69	0.64	0.64	0.83	0.81	0.81
v/c Ratio		0.23		0.38	0.60	0.02	0.82	0.06	0.45	0.79	0.03

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68.5 (57%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 17.4
Intersection Capacity Utilization 82.1%
Analysis Period (min) 15

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	41	45	165	5	951	54	185	1136	38
v/c Ratio	0.23	0.38	0.60	0.02	0.82	0.06	0.45	0.79	0.03
Control Delay	2.8	60.7	17.3	3.6	24.5	1.4	7.6	13.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.8	60.7	17.3	3.6	24.5	1.4	7.6	13.3	0.3
Queue Length 50th (ft)	0	34	0	1	496	0	21	320	0
Queue Length 95th (ft)	0	68	60	3	#908	11	65	#1086	3
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	385	364	500	297	1163	941	413	1445	1238
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.12	0.33	0.02	0.82	0.06	0.45	0.79	0.03

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	5	40	0	145	5	875	50	170	1045	35
Future Volume (veh/h)	25	0	5	40	0	145	5	875	50	170	1045	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.97		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	34	0	7	45	0	0	5	951	54	185	1136	38
Peak Hour Factor	0.73	0.73	0.73	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	143	5	19	168	0		262	1362	1152	394	1405	1208
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.00	0.01	0.74	0.74	0.04	0.78	0.78
Sat Flow, veh/h	1225	72	267	1499	0	1585	1781	1841	1556	1781	1811	1557
Grp Volume(v), veh/h	41	0	0	45	0	0	5	951	54	185	1136	38
Grp Sat Flow(s),veh/h/ln	1565	0	0	1499	0	1585	1781	1841	1556	1781	1811	1557
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.0	0.1	33.4	1.1	3.0	45.3	0.7
Cycle Q Clear(g_c), s	2.6	0.0	0.0	3.0	0.0	0.0	0.1	33.4	1.1	3.0	45.3	0.7
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	0	0	168	0		262	1362	1152	394	1405	1208
V/C Ratio(X)	0.24	0.00	0.00	0.27	0.00		0.02	0.70	0.05	0.47	0.81	0.03
Avail Cap(c_a), veh/h	411	0	0	404	0		339	1362	1152	408	1405	1208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.8	0.0	0.0	53.0	0.0	0.0	11.0	8.4	4.2	10.1	8.1	3.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.8	0.0	0.0	0.0	3.0	0.1	0.9	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.3	0.0	0.0	0.0	11.2	0.3	1.7	14.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.6	0.0	0.0	53.9	0.0	0.0	11.0	11.4	4.3	11.0	13.2	3.1
LnGrp LOS	D	A	A	D	A		B	B	A	B	B	A
Approach Vol, veh/h		41			45	A		1010			1359	
Approach Delay, s/veh		53.6			53.9			11.0			12.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	99.6		13.7	11.0	95.3		13.7				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	6.0	67.5		29.0	6.0	67.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	47.3		5.0	5.0	35.4		4.6				
Green Ext Time (p_c), s	0.0	9.4		0.2	0.0	8.3		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		13.4
HCM 6th LOS		B

Notes

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

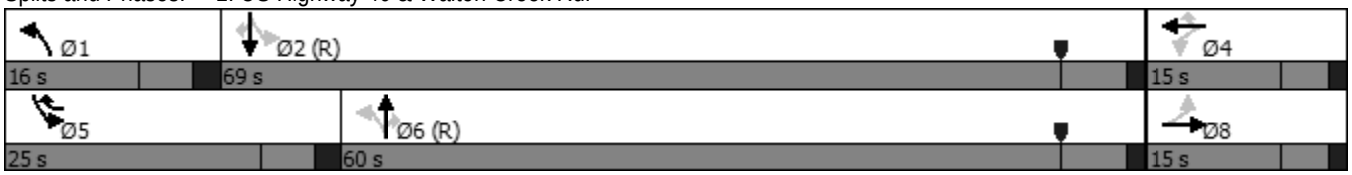
Intersection Capacity Worksheets: Year 2026 Background+ Project

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	3	115	3	710	2	839	214	382	518	12
Future Volume (vph)	5	3	115	3	710	2	839	214	382	518	12
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.

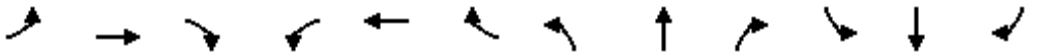


Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	155	934	3	1090	278	439	595	14
v/c Ratio	0.10	1.16	1.60	0.01	1.12	0.29	1.07	0.23	0.01
Control Delay	37.6	167.9	301.8	3.5	90.7	3.3	94.1	4.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	167.9	301.8	3.5	90.7	3.3	94.1	4.4	0.0
Queue Length 50th (ft)	7	~117	~832	0	~802	11	~260	40	0
Queue Length 95th (ft)	21	#192	#839	2	#802	30	#428	100	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	135	134	585	605	977	958	411	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	1.16	1.60	0.00	1.12	0.29	1.07	0.23	0.01

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	2	115	3	710	2	839	214	382	518	12
Future Volume (veh/h)	5	3	2	115	3	710	2	839	214	382	518	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	4	3	151	4	0	3	1090	278	439	595	14
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.77	0.77	0.77	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	128	69	39	212	4		518	985	847	410	2473	1138
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.01	0.54	0.54	0.19	0.72	0.72
Sat Flow, veh/h	736	695	390	1406	37	1585	1781	1841	1584	1781	3441	1584
Grp Volume(v), veh/h	14	0	0	155	0	0	3	1090	278	439	595	14
Grp Sat Flow(s),veh/h/ln	1820	0	0	1443	0	1585	1781	1841	1584	1781	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	9.3	0.0	0.0	0.1	53.5	9.9	19.0	5.9	0.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	10.0	0.0	0.0	0.1	53.5	9.9	19.0	5.9	0.3
Prop In Lane	0.50		0.21	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	0	0	215	0		518	985	847	410	2473	1138
V/C Ratio(X)	0.06	0.00	0.00	0.72	0.00		0.01	1.11	0.33	1.07	0.24	0.01
Avail Cap(c_a), veh/h	236	0	0	215	0		684	985	847	410	2473	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	0.0	45.3	0.0	0.0	10.5	23.2	13.1	34.4	4.8	4.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	12.0	0.0	0.0	0.0	62.6	1.0	64.2	0.2	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	0.0	0.0	4.6	0.0	0.0	0.0	36.9	3.4	16.2	1.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	0.0	0.0	57.2	0.0	0.0	10.5	85.9	14.1	98.5	5.0	4.0
LnGrp LOS	D	A	A	E	A		B	F	B	F	A	A
Approach Vol, veh/h		14			155			1371			1048	
Approach Delay, s/veh		41.0			57.2			71.2			44.2	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	78.4		15.0	25.0	60.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	7.9		12.0	21.0	55.5		2.7				
Green Ext Time (p_c), s	0.0	18.3		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		59.2
HCM 6th LOS		E

Notes

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

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

Intersection	
Int Delay, s/veh	17.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	0	3	10	0	69	3	917	6	62	544	19
Future Vol, veh/h	27	0	3	10	0	69	3	917	6	62	544	19
Conflicting Peds, #/hr	4	0	0	0	0	4	27	0	0	0	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	100	100	100	75	75	75	75	75	75
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	38	0	4	10	0	69	4	1223	8	83	725	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2157	2157	752	2137	2174	1227	777	0	0	1231	0	0
Stage 1	918	918	-	1231	1231	-	-	-	-	-	-	-
Stage 2	1239	1239	-	906	943	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 34	48	410	36	47	217	839	-	-	566	-	-
Stage 1	326	353	-	217	252	-	-	-	-	-	-	-
Stage 2	215	250	-	331	344	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 20	40	399	32	39	216	817	-	-	566	-	-
Mov Cap-2 Maneuver	~ 20	40	-	32	39	-	-	-	-	-	-	-
Stage 1	316	293	-	216	251	-	-	-	-	-	-	-
Stage 2	145	249	-	279	286	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 805.1	46.1	0	1.2
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	22	32	216	566	-	-
HCM Lane V/C Ratio	0.005	-	-	1.921	0.313	0.319	0.146	-	-
HCM Control Delay (s)	9.4	-	-	$ 805.1	162.2	29.3	12.4	-	-
HCM Lane LOS	A	-	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	5.4	1	1.3	0.5	-	-

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	52	8	0	59	0	10	0	0	0	0	10
Future Vol, veh/h	8	52	8	0	59	0	10	0	0	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	68	68	65	65	92	75	92	75	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	76	12	0	91	0	13	0	0	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	91	0	0	88	0	0	197	191	82	191	197	91
Stage 1	-	-	-	-	-	-	100	100	-	91	91	-
Stage 2	-	-	-	-	-	-	97	91	-	100	106	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1504	-	-	1508	-	-	762	704	978	769	699	967
Stage 1	-	-	-	-	-	-	906	812	-	916	820	-
Stage 2	-	-	-	-	-	-	910	820	-	906	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1504	-	-	1508	-	-	750	700	978	765	695	967
Mov Cap-2 Maneuver	-	-	-	-	-	-	750	700	-	765	695	-
Stage 1	-	-	-	-	-	-	901	807	-	911	820	-
Stage 2	-	-	-	-	-	-	900	820	-	901	802	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	9.9	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	750	1504	-	-	1508	-	-	967
HCM Lane V/C Ratio	0.018	0.006	-	-	-	-	-	0.011
HCM Control Delay (s)	9.9	7.4	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	44	0	12	0	4	0	27	0	0	0	0	32
Future Vol, veh/h	44	0	12	0	4	0	27	0	0	0	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	0	18	0	6	0	36	0	0	0	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	6	0	0	18	0	0	167	145	9	145	154	6
Stage 1	-	-	-	-	-	-	139	139	-	6	6	-
Stage 2	-	-	-	-	-	-	28	6	-	139	148	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1615	-	-	1599	-	-	797	746	1073	824	738	1077
Stage 1	-	-	-	-	-	-	864	782	-	1016	891	-
Stage 2	-	-	-	-	-	-	989	891	-	864	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1615	-	-	1599	-	-	741	715	1073	798	708	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	741	715	-	798	708	-
Stage 1	-	-	-	-	-	-	829	750	-	974	891	-
Stage 2	-	-	-	-	-	-	950	891	-	829	743	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.8	0	10.1	8.5
HCM LOS			B	A

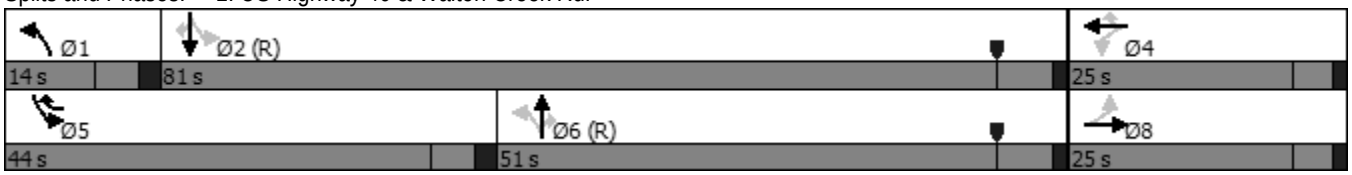
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	741	1615	-	-	1599	-	-	1077
HCM Lane V/C Ratio	0.049	0.04	-	-	-	-	-	0.04
HCM Control Delay (s)	10.1	7.3	0	-	0	-	-	8.5
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1

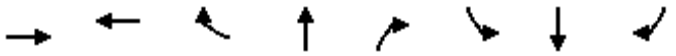
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	21	2	201	2	518	723	197	636	880	7	
Future Volume (vph)	21	2	201	2	518	723	197	636	880	7	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	25.0	25.0	25.0	25.0	44.0	51.0	51.0	44.0	81.0	81.0	14.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%	36.7%	42.5%	42.5%	36.7%	67.5%	67.5%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



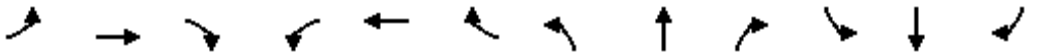


Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	225	576	769	210	723	1000	8
v/c Ratio	0.37	1.00	0.67	1.14	0.31	1.16	0.40	0.01
Control Delay	44.0	111.6	22.7	114.1	8.8	121.9	6.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	111.6	22.7	114.1	8.8	121.9	6.4	0.0
Queue Length 50th (ft)	30	~177	279	~694	25	~614	131	0
Queue Length 95th (ft)	40	#341	411	#932	81	#821	157	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	152	224	863	677	673	622	2511	1132
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	0.37	1.00	0.67	1.14	0.31	1.16	0.40	0.01

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2	8	201	2	518	0	723	197	636	880	7
Future Volume (veh/h)	21	2	8	201	2	518	0	723	197	636	880	7
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	38	4	14	223	2	0	0	769	210	723	1000	8
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	242	31	74	301	2		269	683	580	624	2538	1161
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.00	0.37	0.37	0.32	0.74	0.74
Sat Flow, veh/h	1149	184	444	1446	13	1585	1781	1841	1564	1781	3441	1574
Grp Volume(v), veh/h	56	0	0	225	0	0	0	769	210	723	1000	8
Grp Sat Flow(s),veh/h/ln	1777	0	0	1459	0	1585	1781	1841	1564	1781	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	14.9	0.0	0.0	0.0	44.5	11.7	38.0	12.9	0.2
Cycle Q Clear(g_c), s	3.2	0.0	0.0	18.1	0.0	0.0	0.0	44.5	11.7	38.0	12.9	0.2
Prop In Lane	0.68		0.25	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	0	303	0		269	683	580	624	2538	1161
V/C Ratio(X)	0.16	0.00	0.00	0.74	0.00		0.00	1.13	0.36	1.16	0.39	0.01
Avail Cap(c_a), veh/h	347	0	0	303	0		386	683	580	624	2538	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	0.0	48.9	0.0	0.0	0.0	37.8	27.4	35.8	5.8	4.2
Incr Delay (d2), s/veh	1.0	0.0	0.0	15.2	0.0	0.0	0.0	74.8	1.8	88.3	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	7.9	0.0	0.0	0.0	33.1	4.5	31.6	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	0.0	0.0	64.0	0.0	0.0	0.0	112.6	29.2	124.1	6.3	4.2
LnGrp LOS	D	A	A	E	A		A	F	C	F	A	A
Approach Vol, veh/h		56			225			979			1731	
Approach Delay, s/veh		44.0			64.0			94.7			55.5	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.0		25.0	44.0	51.0		25.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	74.5		20.0	38.0	44.5		20.0				
Max Q Clear Time (g_c+I1), s	0.0	14.9		20.1	40.0	46.5		5.2				
Green Ext Time (p_c), s	0.0	35.8		0.0	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		68.7
HCM 6th LOS		E

Notes

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

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

Intersection	
Int Delay, s/veh	51.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	0	5	10	0	82	6	779	16	86	923	30
Future Vol, veh/h	22	0	5	10	0	82	6	779	16	86	923	30
Conflicting Peds, #/hr	5	0	0	0	0	5	13	0	27	27	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	79	79	79	75	75	75	63	63	63
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	30	0	7	13	0	104	8	1039	21	137	1465	48

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2823	2855	1478	2849	2882	1071	1526	0	0	1087	0	0
Stage 1	1752	1752	-	1082	1082	-	-	-	-	-	-	-
Stage 2	1071	1103	-	1767	1800	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 11	17	155	~ 11	17	268	437	-	-	642	-	-
Stage 1	109	141	-	263	296	-	-	-	-	-	-	-
Stage 2	267	290	-	107	133	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 5	13	153	~ 8	13	260	432	-	-	625	-	-
Mov Cap-2 Maneuver	~ 5	13	-	~ 8	13	-	-	-	-	-	-	-
Stage 1	106	109	-	251	283	-	-	-	-	-	-	-
Stage 2	157	277	-	80	103	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $	3503.2	151.6	0.1	1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	432	-	-	6	8	260	625	-	-
HCM Lane V/C Ratio	0.019	-	-	6.164	1.582	0.399	0.218	-	-
HCM Control Delay (s)	13.5	-	-	$ 3503.2	$ 1167	27.8	12.4	-	-
HCM Lane LOS	B	-	-	F	F	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	6.1	2.5	1.8	0.8	-	-

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

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	15	65	22	2	75	0	10	0	0	0	2	7
Future Vol, veh/h	15	65	22	2	75	0	10	0	0	0	2	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	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	71	71	57	57	92	86	92	86	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	92	31	4	132	0	12	0	0	0	2	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	123	0	0	285	280	108	280	295	132
Stage 1	-	-	-	-	-	-	140	140	-	140	140	-
Stage 2	-	-	-	-	-	-	145	140	-	140	155	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1453	-	-	1464	-	-	667	628	946	672	616	917
Stage 1	-	-	-	-	-	-	863	781	-	863	781	-
Stage 2	-	-	-	-	-	-	858	781	-	863	769	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1453	-	-	1464	-	-	652	619	946	665	607	917
Mov Cap-2 Maneuver	-	-	-	-	-	-	652	619	-	665	607	-
Stage 1	-	-	-	-	-	-	853	772	-	853	779	-
Stage 2	-	-	-	-	-	-	846	779	-	853	760	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.2	10.6	9.4
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	652	1453	-	-	1464	-	-	824
HCM Lane V/C Ratio	0.018	0.011	-	-	0.002	-	-	0.012
HCM Control Delay (s)	10.6	7.5	0	-	7.5	0	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	52	0	17	0	4	0	32	0	0	0	2	45
Future Vol, veh/h	52	0	17	0	4	0	32	0	0	0	2	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	68	68	68	68	68	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	0	25	0	6	0	43	0	0	0	3	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	6	0	0	25	0	0	203	171	13	171	183	6
Stage 1	-	-	-	-	-	-	165	165	-	6	6	-
Stage 2	-	-	-	-	-	-	38	6	-	165	177	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1615	-	-	1589	-	-	755	722	1067	792	711	1077
Stage 1	-	-	-	-	-	-	837	762	-	1016	891	-
Stage 2	-	-	-	-	-	-	977	891	-	837	753	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1615	-	-	1589	-	-	685	687	1067	763	677	1077
Mov Cap-2 Maneuver	-	-	-	-	-	-	685	687	-	763	677	-
Stage 1	-	-	-	-	-	-	797	725	-	967	891	-
Stage 2	-	-	-	-	-	-	920	891	-	797	717	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	5.5	0	10.6	8.6
HCM LOS			B	A

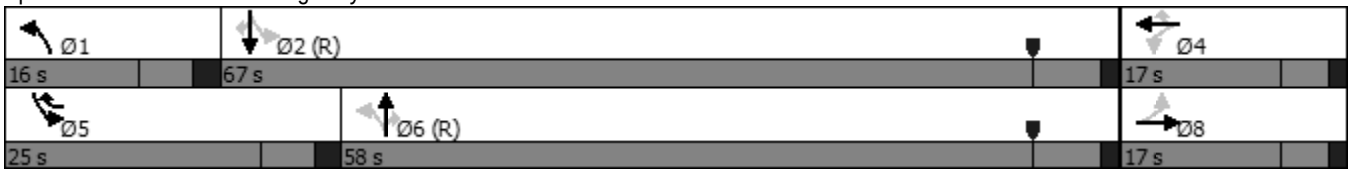
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	685	1615	-	-	1589	-	-	1051
HCM Lane V/C Ratio	0.062	0.047	-	-	-	-	-	0.06
HCM Control Delay (s)	10.6	7.3	0	-	0	-	-	8.6
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.2

Intersection Capacity Worksheets: Year 2026 Background+ Project With Improvements

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	3	115	3	710	2	839	214	382	518	12
Future Volume (vph)	5	3	115	3	710	2	839	214	382	518	12
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	17.0	17.0	17.0	17.0	25.0	16.0	58.0	58.0	25.0	67.0	67.0
Total Split (%)	17.0%	17.0%	17.0%	17.0%	25.0%	16.0%	58.0%	58.0%	25.0%	67.0%	67.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		12.0		12.0	36.0	60.0	51.5	51.5	77.0	73.7	73.7
Actuated g/C Ratio		0.12		0.12	0.36	0.60	0.52	0.52	0.77	0.74	0.74
v/c Ratio		0.08		0.96	1.53	0.01	1.16	0.30	0.55	0.24	0.01
Control Delay		35.2		107.7	273.0	4.5	110.6	7.7	20.1	5.1	0.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		35.2		107.7	273.0	4.5	110.6	7.7	20.1	5.1	0.0
LOS		D		F	F	A	F	A	C	A	A
Approach Delay		35.2		249.5			89.5			11.3	
Approach LOS		D		F			F			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.53	
Intersection Signal Delay: 115.5	Intersection LOS: F
Intersection Capacity Utilization 107.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	14	155	934	3	1090	278	439	595	14
v/c Ratio	0.08	0.96	1.53	0.01	1.16	0.30	0.55	0.24	0.01
Control Delay	35.2	107.7	273.0	4.5	110.6	7.7	20.1	5.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	107.7	273.0	4.5	110.6	7.7	20.1	5.1	0.0
Queue Length 50th (ft)	6	100	~819	1	~859	51	74	46	0
Queue Length 95th (ft)	20	#174	#826	m1	#860	m63	117	106	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	184	161	610	589	940	927	799	2510	1162
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.96	1.53	0.01	1.16	0.30	0.55	0.24	0.01

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.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	3	2	115	3	710	2	839	214	382	518	12
Future Volume (veh/h)	5	3	2	115	3	710	2	839	214	382	518	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	4	3	151	4	0	3	1090	278	439	595	14
Peak Hour Factor	0.75	0.75	0.75	0.76	0.76	0.76	0.77	0.77	0.77	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	144	79	46	239	4		565	1093	941	531	2404	1107
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.00	0.01	0.59	0.59	0.11	0.70	0.70
Sat Flow, veh/h	747	659	384	1402	37	1585	1781	1841	1584	3456	3441	1584
Grp Volume(v), veh/h	14	0	0	155	0	0	3	1090	278	439	595	14
Grp Sat Flow(s),veh/h/ln	1790	0	0	1439	0	1585	1781	1841	1584	1728	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	9.9	0.0	0.0	0.1	59.0	8.6	8.1	6.3	0.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	10.6	0.0	0.0	0.1	59.0	8.6	8.1	6.3	0.3
Prop In Lane	0.50		0.21	0.97		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	0	0	244	0		565	1093	941	531	2404	1107
V/C Ratio(X)	0.05	0.00	0.00	0.64	0.00		0.01	1.00	0.30	0.83	0.25	0.01
Avail Cap(c_a), veh/h	269	0	0	244	0		732	1093	941	804	2404	1107
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	0.0	43.3	0.0	0.0	8.0	20.2	10.0	32.5	5.5	4.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	6.2	0.0	0.0	0.0	26.6	0.8	4.4	0.2	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	0.0	0.0	4.2	0.0	0.0	0.0	28.8	2.8	5.3	1.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	0.0	49.5	0.0	0.0	8.0	46.8	10.8	36.9	5.7	4.6
LnGrp LOS	D	A	A	D	A		A	D	B	D	A	A
Approach Vol, veh/h		14			155			1371			1048	
Approach Delay, s/veh		39.1			49.5			39.4			18.8	
Approach LOS		D			D			D			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	76.4		17.0	17.1	65.9		17.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	60.5		12.0	19.0	51.5		12.0				
Max Q Clear Time (g_c+I1), s	2.1	8.3		12.6	10.1	61.0		2.7				
Green Ext Time (p_c), s	0.0	18.0		0.0	1.1	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		31.7
HCM 6th LOS		C

Notes

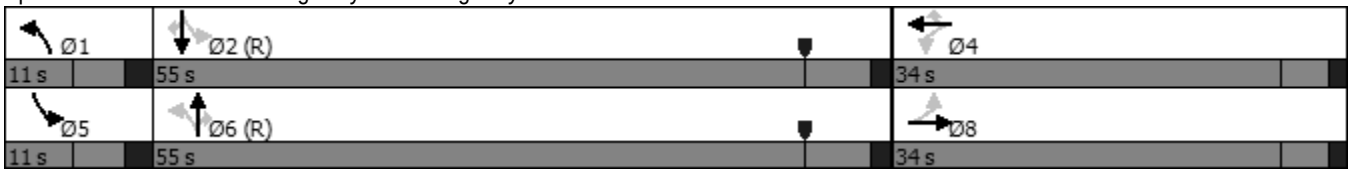
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	27	0	10	0	69	3	917	6	62	544	19
Future Volume (vph)	27	0	10	0	69	3	917	6	62	544	19
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	55.0	55.0	11.0	55.0	55.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	11.0%	55.0%	55.0%	11.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)		6.4		6.4	6.4	79.0	75.4	75.4	83.9	83.2	83.2
Actuated g/C Ratio		0.06		0.06	0.06	0.79	0.75	0.75	0.84	0.83	0.83
v/c Ratio		0.23		0.10	0.35	0.01	0.89	0.01	0.41	0.49	0.02
Control Delay		2.9		45.5	8.5	2.0	23.4	0.0	17.2	7.3	0.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		2.9		45.5	8.5	2.0	23.4	0.0	17.2	7.3	0.2
LOS		A		D	A	A	C	A	B	A	A
Approach Delay		2.9		13.2			23.2			8.1	
Approach LOS		A		B			C			A	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 16.7	Intersection LOS: B
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	42	10	69	4	1223	8	83	725	25
v/c Ratio	0.23	0.10	0.35	0.01	0.89	0.01	0.41	0.49	0.02
Control Delay	2.9	45.5	8.5	2.0	23.4	0.0	17.2	7.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	45.5	8.5	2.0	23.4	0.0	17.2	7.3	0.2
Queue Length 50th (ft)	0	6	0	0	618	0	10	229	0
Queue Length 95th (ft)	0	23	20	2	620	0	m32	324	m0
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	466	466	525	591	1377	1214	200	1490	1225
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.02	0.13	0.01	0.89	0.01	0.41	0.49	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	3	10	0	69	3	917	6	62	544	19
Future Volume (veh/h)	27	0	3	10	0	69	3	917	6	62	544	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.98		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	38	0	4	10	0	0	4	1223	8	83	725	25
Peak Hour Factor	0.71	0.71	0.71	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	151	4	9	173	0		501	1316	1112	220	1367	1175
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.00	0.01	0.71	0.71	0.05	0.75	0.75
Sat Flow, veh/h	1266	54	139	1551	0	1585	1781	1841	1555	1781	1811	1557
Grp Volume(v), veh/h	42	0	0	10	0	0	4	1223	8	83	725	25
Grp Sat Flow(s),veh/h/ln	1459	0	0	1551	0	1585	1781	1841	1555	1781	1811	1557
Q Serve(g_s), s	2.2	0.0	0.0	0.0	0.0	0.0	0.1	56.5	0.1	1.2	16.4	0.4
Cycle Q Clear(g_c), s	2.7	0.0	0.0	0.5	0.0	0.0	0.1	56.5	0.1	1.2	16.4	0.4
Prop In Lane	0.90		0.10	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	0	0	173	0		501	1316	1112	220	1367	1175
V/C Ratio(X)	0.26	0.00	0.00	0.06	0.00		0.01	0.93	0.01	0.38	0.53	0.02
Avail Cap(c_a), veh/h	485	0	0	488	0		581	1316	1112	229	1367	1175
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.9	0.0	0.0	43.9	0.0	0.0	4.7	12.1	4.1	22.5	5.0	3.1
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.1	0.0	0.0	0.0	12.8	0.0	1.1	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.2	0.0	0.0	0.0	20.6	0.0	1.3	4.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	0.0	0.0	44.1	0.0	0.0	4.7	25.0	4.1	23.6	6.5	3.1
LnGrp LOS	D	A	A	D	A		A	C	A	C	A	A
Approach Vol, veh/h		42			10			1235			833	
Approach Delay, s/veh		45.7			44.1			24.8			8.1	
Approach LOS		D			D			C			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	82.0		11.5	10.5	78.0		11.5				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	5.0	48.5		29.0	5.0	48.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	18.4		2.5	3.2	58.5		4.7				
Green Ext Time (p_c), s	0.0	5.2		0.0	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

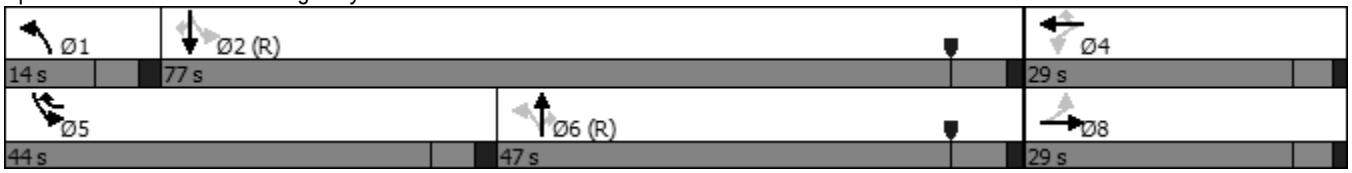
Notes

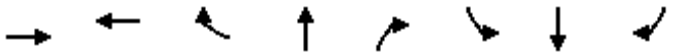
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	21	2	201	2	518	723	197	636	880	7	
Future Volume (vph)	21	2	201	2	518	723	197	636	880	7	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	29.0	29.0	29.0	29.0	44.0	47.0	47.0	44.0	77.0	77.0	14.0
Total Split (%)	24.2%	24.2%	24.2%	24.2%	36.7%	39.2%	39.2%	36.7%	64.2%	64.2%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		24.0		24.0	56.6	50.9	50.9	85.0	84.5	84.5	
Actuated g/C Ratio		0.20		0.20	0.47	0.42	0.42	0.71	0.70	0.70	
v/c Ratio		0.26		0.84	0.75	0.99	0.28	0.79	0.42	0.01	
Control Delay		36.5		72.9	29.2	59.2	13.0	37.1	8.1	0.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		36.5		72.9	29.2	59.2	13.0	37.1	8.1	0.0	
LOS		D		E	C	E	B	D	A	A	
Approach Delay		36.5		41.5		49.2			20.2		
Approach LOS		D		D		D			C		

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 53 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 89.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.





Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	225	576	769	210	723	1000	8
v/c Ratio	0.26	0.84	0.75	0.99	0.28	0.79	0.42	0.01
Control Delay	36.5	72.9	29.2	59.2	13.0	37.1	8.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	72.9	29.2	59.2	13.0	37.1	8.1	0.0
Queue Length 50th (ft)	29	169	328	439	30	218	152	0
Queue Length 95th (ft)	38	#306	390	#976	m83	250	183	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	219	268	906	775	749	1186	2398	1084
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	0.26	0.84	0.64	0.99	0.28	0.61	0.42	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	2	8	201	2	518	0	723	197	636	880	7
Future Volume (veh/h)	21	2	8	201	2	518	0	723	197	636	880	7
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	38	4	14	223	2	0	0	769	210	723	1000	8
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	274	34	86	347	3		335	899	770	828	2423	1108
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.00	0.00	0.49	0.49	0.17	0.70	0.70
Sat Flow, veh/h	1118	171	429	1434	13	1585	1781	1841	1575	3456	3441	1574
Grp Volume(v), veh/h	56	0	0	225	0	0	0	769	210	723	1000	8
Grp Sat Flow(s),veh/h/ln	1718	0	0	1447	0	1585	1781	1841	1575	1728	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	14.3	0.0	0.0	0.0	44.0	9.4	15.3	14.5	0.2
Cycle Q Clear(g_c), s	3.1	0.0	0.0	17.4	0.0	0.0	0.0	44.0	9.4	15.3	14.5	0.2
Prop In Lane	0.68		0.25	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	394	0	0	349	0		335	899	770	828	2423	1108
V/C Ratio(X)	0.14	0.00	0.00	0.64	0.00		0.00	0.86	0.27	0.87	0.41	0.01
Avail Cap(c_a), veh/h	394	0	0	349	0		452	899	770	1350	2423	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	0.0	45.0	0.0	0.0	0.0	27.0	18.1	30.1	7.4	5.3
Incr Delay (d2), s/veh	0.8	0.0	0.0	8.9	0.0	0.0	0.0	10.2	0.9	3.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	7.2	0.0	0.0	0.0	20.3	3.4	10.4	4.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	0.0	0.0	53.9	0.0	0.0	0.0	37.2	19.0	33.9	7.9	5.3
LnGrp LOS	D	A	A	D	A		A	D	B	C	A	A
Approach Vol, veh/h		56			225			979			1731	
Approach Delay, s/veh		40.4			53.9			33.3			18.8	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	91.0		29.0	25.9	65.1		29.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	70.5		24.0	38.0	40.5		24.0				
Max Q Clear Time (g_c+I1), s	0.0	16.5		19.4	17.3	46.0		5.1				
Green Ext Time (p_c), s	0.0	33.6		0.6	2.6	0.0		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		26.6
HCM 6th LOS		C

Notes

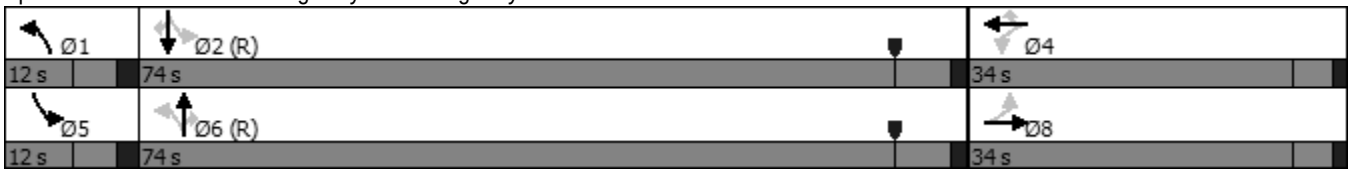
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	22	0	10	0	82	6	779	16	86	923	30
Future Volume (vph)	22	0	10	0	82	6	779	16	86	923	30
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	12.0	74.0	74.0	12.0	74.0	74.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	10.0%	61.7%	61.7%	10.0%	61.7%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		7.4		7.4	7.4	90.1	84.1	84.1	101.6	98.8	98.8
Actuated g/C Ratio		0.06		0.06	0.06	0.75	0.70	0.70	0.85	0.82	0.82
v/c Ratio		0.23		0.14	0.54	0.06	0.81	0.02	0.39	0.99	0.04
Control Delay		3.1		54.9	20.6	3.5	20.2	0.1	7.1	33.4	0.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		3.1		54.9	20.6	3.5	20.2	0.1	7.1	33.4	0.2
LOS		A		D	C	A	C	A	A	C	A
Approach Delay		3.1		24.4			19.7			30.3	
Approach LOS		A		C			B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68.5 (57%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 25.7	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	37	13	104	8	1039	21	137	1465	48
v/c Ratio	0.23	0.14	0.54	0.06	0.81	0.02	0.39	0.99	0.04
Control Delay	3.1	54.9	20.6	3.5	20.2	0.1	7.1	33.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	54.9	20.6	3.5	20.2	0.1	7.1	33.4	0.2
Queue Length 50th (ft)	0	10	0	1	482	0	10	386	0
Queue Length 95th (ft)	0	26	38	3	567	0	16	722	m0
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	395	381	454	151	1280	1028	350	1474	1262
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03	0.23	0.05	0.81	0.02	0.39	0.99	0.04

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	0	5	10	0	82	6	779	16	86	923	30
Future Volume (veh/h)	22	0	5	10	0	82	6	779	16	86	923	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.97		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	30	0	7	13	0	0	8	1039	21	137	1465	48
Peak Hour Factor	0.73	0.73	0.73	0.79	0.79	0.79	0.75	0.75	0.75	0.63	0.63	0.63
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	128	6	18	160	0		77	1374	1162	356	1409	1212
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.00	0.01	0.75	0.75	0.04	0.78	0.78
Sat Flow, veh/h	1108	87	279	1513	0	1585	1781	1841	1556	1781	1811	1558
Grp Volume(v), veh/h	37	0	0	13	0	0	8	1039	21	137	1465	48
Grp Sat Flow(s),veh/h/ln	1473	0	0	1513	0	1585	1781	1841	1556	1781	1811	1558
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	0.0	0.1	39.4	0.4	2.1	93.4	0.8
Cycle Q Clear(g_c), s	2.7	0.0	0.0	0.8	0.0	0.0	0.1	39.4	0.4	2.1	93.4	0.8
Prop In Lane	0.81		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	0	0	160	0		77	1374	1162	356	1409	1212
V/C Ratio(X)	0.24	0.00	0.00	0.08	0.00		0.10	0.76	0.02	0.38	1.04	0.04
Avail Cap(c_a), veh/h	403	0	0	404	0		149	1374	1162	372	1409	1212
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	0.0	0.0	52.7	0.0	0.0	37.0	8.8	3.9	11.6	13.3	3.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.2	0.0	0.0	0.6	3.9	0.0	0.7	34.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.4	0.0	0.0	0.2	13.2	0.1	1.4	38.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	0.0	0.0	52.9	0.0	0.0	37.6	12.8	3.9	12.3	48.2	3.1
LnGrp LOS	D	A	A	D	A		D	B	A	B	F	A
Approach Vol, veh/h		37			13			1068			1650	
Approach Delay, s/veh		54.3			52.9			12.8			43.9	
Approach LOS		D			D			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	99.9		13.0	10.9	96.1		13.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	6.0	67.5		29.0	6.0	67.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	95.4		2.8	4.1	41.4		4.7				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	9.0		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		32.1	
HCM 6th LOS		C	

Notes

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

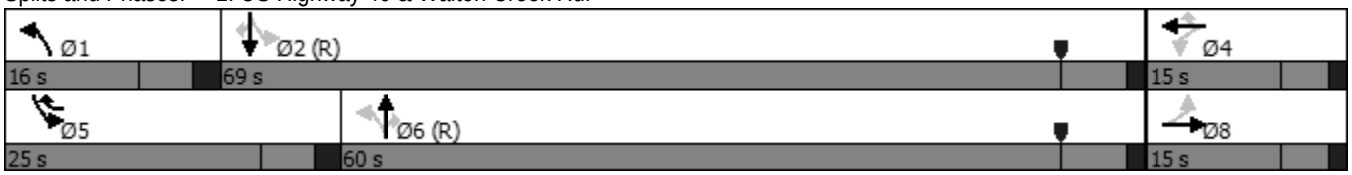
Intersection Capacity Worksheets: Year 2042 Background+ Project

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	105	5	680	2	1132	200	365	683	15
Future Volume (vph)	5	5	105	5	680	2	1132	200	365	683	15
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	15.0	15.0	15.0	15.0	25.0	16.0	60.0	60.0	25.0	69.0	69.0
Total Split (%)	15.0%	15.0%	15.0%	15.0%	25.0%	16.0%	60.0%	60.0%	25.0%	69.0%	69.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 61 (61%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.

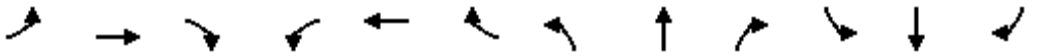


Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	125	773	2	1230	217	397	742	16
v/c Ratio	0.11	0.93	1.35	0.00	1.26	0.23	0.97	0.29	0.01
Control Delay	37.8	108.4	198.5	3.5	149.4	4.0	66.9	4.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	108.4	198.5	3.5	149.4	4.0	66.9	4.7	0.0
Queue Length 50th (ft)	8	80	~633	0	~989	15	200	53	0
Queue Length 95th (ft)	25	#186	#834	1	#1240	50	#391	133	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	158	134	571	548	977	924	411	2578	1192
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.93	1.35	0.00	1.26	0.23	0.97	0.29	0.01

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	2	105	5	680	2	1132	200	365	683	15
Future Volume (veh/h)	5	5	2	105	5	680	2	1132	200	365	683	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	7	3	119	6	0	2	1230	217	397	742	16
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	105	94	32	209	7		458	985	847	410	2480	1142
Arrive On Green	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.54	0.54	0.19	0.72	0.72
Sat Flow, veh/h	539	936	316	1383	70	1585	1781	1841	1584	1781	3441	1584
Grp Volume(v), veh/h	17	0	0	125	0	0	2	1230	217	397	742	16
Grp Sat Flow(s),veh/h/ln	1792	0	0	1453	0	1585	1781	1841	1584	1781	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	7.6	0.0	0.0	0.1	53.5	7.4	18.0	7.7	0.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	8.4	0.0	0.0	0.1	53.5	7.4	18.0	7.7	0.3
Prop In Lane	0.41		0.18	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	0	0	216	0		458	985	847	410	2480	1142
V/C Ratio(X)	0.07	0.00	0.00	0.58	0.00		0.00	1.25	0.26	0.97	0.30	0.01
Avail Cap(c_a), veh/h	230	0	0	216	0		628	985	847	410	2480	1142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	0.0	0.0	44.2	0.0	0.0	10.6	23.2	12.5	33.8	5.0	3.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	4.7	0.0	0.0	0.0	120.6	0.7	35.8	0.3	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	0.0	0.0	3.3	0.0	0.0	0.0	52.8	2.5	12.6	2.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	0.0	0.0	48.9	0.0	0.0	10.6	143.8	13.3	69.7	5.3	4.0
LnGrp LOS	D	A	A	D	A		B	F	B	E	A	A
Approach Vol, veh/h		17			125			1449			1155	
Approach Delay, s/veh		41.1			48.9			124.1			27.4	
Approach LOS		D			D			F			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	78.6		15.0	25.0	60.0		15.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	10.0	62.5		10.0	19.0	53.5		10.0				
Max Q Clear Time (g_c+I1), s	2.1	9.7		10.4	20.0	55.5		2.9				
Green Ext Time (p_c), s	0.0	23.7		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	79.5	
HCM 6th LOS	E	

Notes

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

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

Intersection	
Int Delay, s/veh	210.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	5	33	0	217	5	1030	49	143	615	20
Future Vol, veh/h	30	0	5	33	0	217	5	1030	49	143	615	20
Conflicting Peds, #/hr	4	0	0	0	0	4	27	0	0	0	0	27
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	100	100	100	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	42	0	7	33	0	217	5	1120	53	155	668	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2166	2188	695	2123	2157	1124	717	0	0	1173	0	0
Stage 1	1005	1005	-	1130	1130	-	-	-	-	-	-	-
Stage 2	1161	1183	-	993	1027	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 34	46	442	36	48	250	884	-	-	595	-	-
Stage 1	291	322	-	248	281	-	-	-	-	-	-	-
Stage 2	238	265	-	296	314	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	33	431	~ 28	34	249	861	-	-	595	-	-
Mov Cap-2 Maneuver	~ 3	33	-	~ 28	34	-	-	-	-	-	-	-
Stage 1	282	232	-	247	279	-	-	-	-	-	-	-
Stage 2	~ 30	263	-	215	226	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 9252	119.6	0	2.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	861	-	-	3	28	249	595	-	-
HCM Lane V/C Ratio	0.006	-	-	16.432	1.179	0.871	0.261	-	-
HCM Control Delay (s)	9.2	-	-	$ 9252	$ 438	71.2	13.2	-	-
HCM Lane LOS	A	-	-	F	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	8.1	3.8	7.2	1	-	-

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	172	10	0	230	5	10	0	0	0	0	10
Future Vol, veh/h	10	172	10	0	230	5	10	0	0	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	88	88	88	88	92	75	92	75	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	195	11	0	261	5	13	0	0	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	266	0	0	206	0	0	492	489	201	487	492	264
Stage 1	-	-	-	-	-	-	223	223	-	264	264	-
Stage 2	-	-	-	-	-	-	269	266	-	223	228	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1298	-	-	1365	-	-	487	480	840	491	478	775
Stage 1	-	-	-	-	-	-	780	719	-	741	690	-
Stage 2	-	-	-	-	-	-	737	689	-	780	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1298	-	-	1365	-	-	476	475	840	487	473	775
Mov Cap-2 Maneuver	-	-	-	-	-	-	476	475	-	487	473	-
Stage 1	-	-	-	-	-	-	772	712	-	734	690	-
Stage 2	-	-	-	-	-	-	727	689	-	772	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	12.8	9.7
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	476	1298	-	-	1365	-	-	775
HCM Lane V/C Ratio	0.028	0.008	-	-	-	-	-	0.014
HCM Control Delay (s)	12.8	7.8	0	-	0	-	-	9.7
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	125	10	0	180	8	30	0	0	7	0	25
Future Vol, veh/h	32	125	10	0	180	8	30	0	0	7	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	142	11	0	205	9	40	0	0	9	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	214	0	0	153	0	0	446	434	148	430	435	210
Stage 1	-	-	-	-	-	-	220	220	-	210	210	-
Stage 2	-	-	-	-	-	-	226	214	-	220	225	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1356	-	-	1428	-	-	523	515	899	535	514	830
Stage 1	-	-	-	-	-	-	782	721	-	792	728	-
Stage 2	-	-	-	-	-	-	777	725	-	782	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1356	-	-	1428	-	-	491	500	899	523	499	830
Mov Cap-2 Maneuver	-	-	-	-	-	-	491	500	-	523	499	-
Stage 1	-	-	-	-	-	-	759	700	-	769	728	-
Stage 2	-	-	-	-	-	-	746	725	-	759	697	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	13	10.2
HCM LOS			B	B

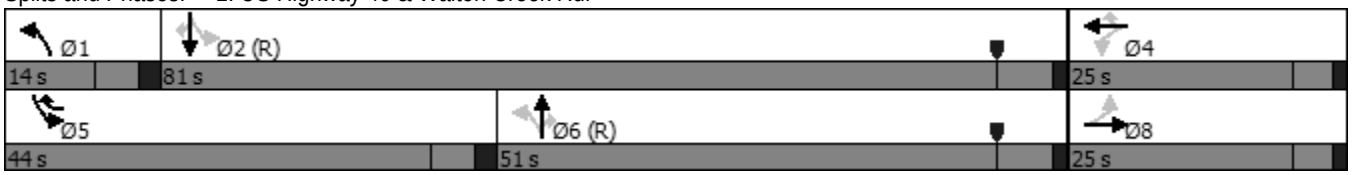
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	491	1356	-	-	1428	-	-	736
HCM Lane V/C Ratio	0.081	0.027	-	-	-	-	-	0.058
HCM Control Delay (s)	13	7.7	0	-	0	-	-	10.2
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

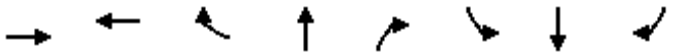
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	25	2	185	2	505	941	185	620	1153	10	
Future Volume (vph)	25	2	185	2	505	941	185	620	1153	10	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	25.0	25.0	25.0	25.0	44.0	51.0	51.0	44.0	81.0	81.0	14.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%	36.7%	42.5%	42.5%	36.7%	67.5%	67.5%	12%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	C-Min	C-Min	None	C-Min	C-Min	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 23 (19%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



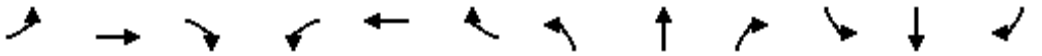


Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	208	561	1001	197	674	1253	11
v/c Ratio	0.43	0.95	0.66	1.48	0.30	1.08	0.50	0.01
Control Delay	46.1	99.2	24.2	253.7	11.2	93.7	7.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	99.2	24.2	253.7	11.2	93.7	7.4	0.0
Queue Length 50th (ft)	38	161	288	~1067	35	~534	184	0
Queue Length 95th (ft)	47	#313	418	#1319	91	#768	225	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	155	219	846	677	653	622	2511	1132
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	0.43	0.95	0.66	1.48	0.30	1.08	0.50	0.01

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	10	185	2	505	0	941	185	620	1153	10
Future Volume (veh/h)	25	2	10	185	2	505	0	941	185	620	1153	10
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	45	4	18	206	2	0	0	1001	197	674	1253	11
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	236	27	78	302	2		224	683	580	624	2538	1161
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.00	0.37	0.37	0.32	0.74	0.74
Sat Flow, veh/h	1115	163	469	1454	14	1585	1781	1841	1564	1781	3441	1574
Grp Volume(v), veh/h	67	0	0	208	0	0	0	1001	197	674	1253	11
Grp Sat Flow(s),veh/h/ln	1747	0	0	1468	0	1585	1781	1841	1564	1781	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	12.4	0.0	0.0	0.0	44.5	10.9	38.0	18.0	0.2
Cycle Q Clear(g_c), s	3.9	0.0	0.0	16.3	0.0	0.0	0.0	44.5	10.9	38.0	18.0	0.2
Prop In Lane	0.67		0.27	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	0	304	0		224	683	580	624	2538	1161
V/C Ratio(X)	0.20	0.00	0.00	0.68	0.00		0.00	1.47	0.34	1.08	0.49	0.01
Avail Cap(c_a), veh/h	341	0	0	304	0		341	683	580	624	2538	1161
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	0.0	48.1	0.0	0.0	0.0	37.8	27.2	35.8	6.5	4.2
Incr Delay (d2), s/veh	1.3	0.0	0.0	11.8	0.0	0.0	0.0	217.9	1.6	59.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	7.0	0.0	0.0	0.0	60.2	4.2	26.6	5.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	0.0	0.0	59.9	0.0	0.0	0.0	255.6	28.8	95.3	7.2	4.2
LnGrp LOS	D	A	A	E	A		A	F	C	F	A	A
Approach Vol, veh/h		67			208			1198			1938	
Approach Delay, s/veh		44.6			59.9			218.3			37.8	
Approach LOS		D			E			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	95.0		25.0	44.0	51.0		25.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	74.5		20.0	38.0	44.5		20.0				
Max Q Clear Time (g_c+I1), s	0.0	20.0		18.3	40.0	46.5		5.9				
Green Ext Time (p_c), s	0.0	42.2		0.2	0.0	0.0		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		102.7
HCM 6th LOS		F

Notes

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

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

Intersection	
Int Delay, s/veh	114.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	5	45	0	176	5	875	55	203	1045	35
Future Vol, veh/h	25	0	5	45	0	176	5	875	55	203	1045	35
Conflicting Peds, #/hr	5	0	0	0	0	5	13	0	27	27	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	95	-	0	435	-	290	435	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	88	88	88	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	2	0	2	2	4	2	2	6	2
Mvmt Flow	34	0	7	51	0	200	5	951	60	221	1136	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2587	2639	1149	2589	2617	983	1187	0	0	1038	0	0
Stage 1	1591	1591	-	988	988	-	-	-	-	-	-	-
Stage 2	996	1048	-	1601	1629	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.5	6.22	7.12	6.5	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4	3.318	3.518	4	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 17	24	242	~ 17	25	302	588	-	-	670	-	-
Stage 1	135	169	-	297	328	-	-	-	-	-	-	-
Stage 2	294	307	-	133	162	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 4	15	239	~ 12	16	293	581	-	-	653	-	-
Mov Cap-2 Maneuver	~ 4	15	-	~ 12	16	-	-	-	-	-	-	-
Stage 1	132	111	-	287	317	-	-	-	-	-	-	-
Stage 2	92	296	-	85	106	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 4651.8	$ 458.4	0.1	2.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	581	-	-	5	12	293	653	-	-
HCM Lane V/C Ratio	0.009	-	-	8.219	4.261	0.683	0.338	-	-
HCM Control Delay (s)	11.3	-	-	$ 4651.8	$ 2094.2	40.1	13.3	-	-
HCM Lane LOS	B	-	-	F	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	6.8	7.5	4.6	1.5	-	-

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	223	20	5	206	5	10	0	0	0	2	5
Future Vol, veh/h	15	223	20	5	206	5	10	0	0	0	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	88	88	88	88	92	86	92	86	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	253	23	6	234	5	12	0	0	0	2	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	276	0	0	549	548	265	546	557	237
Stage 1	-	-	-	-	-	-	297	297	-	249	249	-
Stage 2	-	-	-	-	-	-	252	251	-	297	308	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1328	-	-	1287	-	-	446	444	774	448	439	802
Stage 1	-	-	-	-	-	-	712	668	-	755	701	-
Stage 2	-	-	-	-	-	-	752	699	-	712	660	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1328	-	-	1287	-	-	435	436	774	442	431	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	435	436	-	442	431	-
Stage 1	-	-	-	-	-	-	702	659	-	744	697	-
Stage 2	-	-	-	-	-	-	741	696	-	702	651	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	13.5	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	435	1328	-	-	1287	-	-	644
HCM Lane V/C Ratio	0.027	0.012	-	-	0.004	-	-	0.012
HCM Control Delay (s)	13.5	7.7	0	-	7.8	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	53	170	15	0	140	15	35	0	0	9	2	36
Future Vol, veh/h	53	170	15	0	140	15	35	0	0	9	2	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	193	17	0	159	17	47	0	0	12	3	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	176	0	0	210	0	0	515	498	202	490	498	168
Stage 1	-	-	-	-	-	-	322	322	-	168	168	-
Stage 2	-	-	-	-	-	-	193	176	-	322	330	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1400	-	-	1361	-	-	470	474	839	489	474	876
Stage 1	-	-	-	-	-	-	690	651	-	834	759	-
Stage 2	-	-	-	-	-	-	809	753	-	690	646	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1400	-	-	1361	-	-	426	451	839	471	451	876
Mov Cap-2 Maneuver	-	-	-	-	-	-	426	451	-	471	451	-
Stage 1	-	-	-	-	-	-	656	619	-	793	759	-
Stage 2	-	-	-	-	-	-	762	753	-	656	614	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	14.5	10.4
HCM LOS			B	B

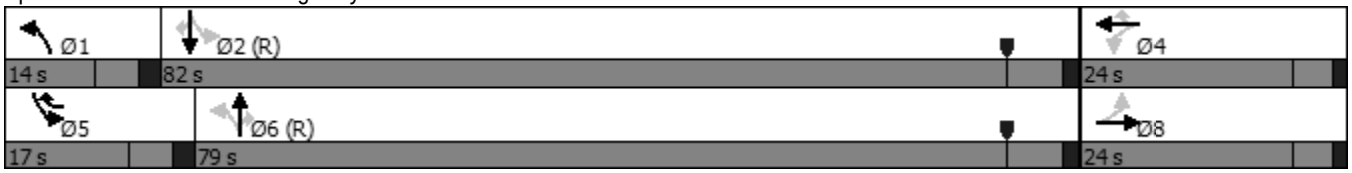
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	426	1400	-	-	1361	-	-	727
HCM Lane V/C Ratio	0.11	0.043	-	-	-	-	-	0.086
HCM Control Delay (s)	14.5	7.7	0	-	0	-	-	10.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.3

Intersection Capacity Worksheets: Year 2042 Background+ Project With Improvements

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	5	5	105	5	680	2	1132	200	365	683	15
Future Volume (vph)	5	5	105	5	680	2	1132	200	365	683	15
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4	5	1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	5	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	8.0	30.0	30.0	8.0	30.0	30.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	14.0	36.5	36.5	14.0	36.5	36.5
Total Split (s)	24.0	24.0	24.0	24.0	17.0	14.0	79.0	79.0	17.0	82.0	82.0
Total Split (%)	20.0%	20.0%	20.0%	20.0%	14.2%	11.7%	65.8%	65.8%	14.2%	68.3%	68.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	6.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag					Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		20.7		20.7	36.7	79.3	70.8	70.8	87.7	85.0	85.0
Actuated g/C Ratio		0.17		0.17	0.31	0.66	0.59	0.59	0.73	0.71	0.71
v/c Ratio		0.06		0.54	1.45	0.00	0.60	0.21	0.61	0.31	0.01
Control Delay		38.4		55.9	242.2	4.0	16.9	1.8	9.7	7.3	0.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		38.4		55.9	242.2	4.0	16.9	1.8	9.7	7.3	0.0
LOS		D		E	F	A	B	A	A	A	A
Approach Delay		38.4		216.3			14.6			8.0	
Approach LOS		D		F			B			A	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.45	
Intersection Signal Delay: 64.0	Intersection LOS: E
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	125	773	2	1230	217	397	742	16
v/c Ratio	0.06	0.54	1.45	0.00	0.60	0.21	0.61	0.31	0.01
Control Delay	38.4	55.9	242.2	4.0	16.9	1.8	9.7	7.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	55.9	242.2	4.0	16.9	1.8	9.7	7.3	0.0
Queue Length 50th (ft)	9	91	~797	0	289	0	38	85	0
Queue Length 95th (ft)	26	154	#1007	2	352	30	54	168	0
Internal Link Dist (ft)	63	931			1564			1031	
Turn Bay Length (ft)			140	280		280	165		295
Base Capacity (vph)	284	232	534	526	2097	1042	654	2412	1116
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.54	1.45	0.00	0.59	0.21	0.61	0.31	0.01

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	2	105	5	680	2	1132	200	365	683	15
Future Volume (veh/h)	5	5	2	105	5	680	2	1132	200	365	683	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	7	7	3	119	6	0	2	1230	217	397	742	16
Peak Hour Factor	0.75	0.75	0.75	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	136	129	48	276	11		496	2200	997	656	2380	1095
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.63	0.63	0.07	0.69	0.69
Sat Flow, veh/h	595	818	303	1371	69	1585	1781	3497	1584	3456	3441	1584
Grp Volume(v), veh/h	17	0	0	125	0	0	2	1230	217	397	742	16
Grp Sat Flow(s),veh/h/ln	1715	0	0	1440	0	1585	1781	1749	1584	1728	1721	1584
Q Serve(g_s), s	0.0	0.0	0.0	8.5	0.0	0.0	0.0	24.1	7.1	4.5	10.2	0.4
Cycle Q Clear(g_c), s	1.0	0.0	0.0	9.5	0.0	0.0	0.0	24.1	7.1	4.5	10.2	0.4
Prop In Lane	0.41		0.18	0.95		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	314	0	0	287	0		496	2200	997	656	2380	1095
V/C Ratio(X)	0.05	0.00	0.00	0.44	0.00		0.00	0.56	0.22	0.61	0.31	0.01
Avail Cap(c_a), veh/h	314	0	0	287	0		608	2200	997	742	2380	1095
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	0.0	46.4	0.0	0.0	8.1	12.7	9.6	12.0	7.3	5.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	4.8	0.0	0.0	0.0	1.0	0.5	1.1	0.3	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	0.0	0.0	3.8	0.0	0.0	0.0	8.7	2.3	1.8	3.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	0.0	0.0	51.2	0.0	0.0	8.1	13.8	10.1	13.1	7.6	5.8
LnGrp LOS	D	A	A	D	A		A	B	B	B	A	A
Approach Vol, veh/h		17			125			1449			1155	
Approach Delay, s/veh		43.0			51.2			13.2			9.5	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	89.5		24.0	14.0	82.0		24.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	75.5		19.0	11.0	72.5		19.0				
Max Q Clear Time (g_c+I1), s	2.0	12.2		11.5	6.5	26.1		3.0				
Green Ext Time (p_c), s	0.0	25.6		0.4	0.6	39.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		13.6
HCM 6th LOS		B

Notes

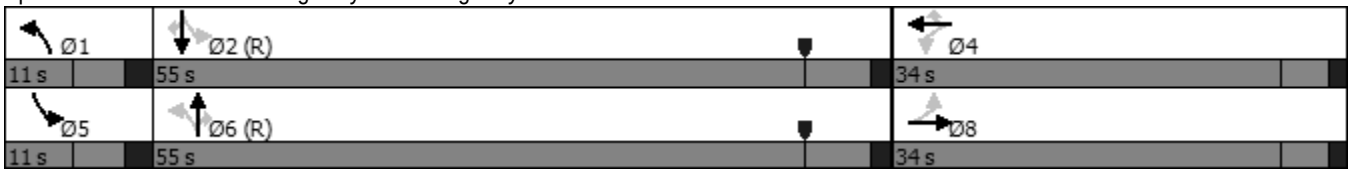
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	30	0	33	0	217	5	1030	49	143	615	20
Future Volume (vph)	30	0	33	0	217	5	1030	49	143	615	20
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	55.0	55.0	11.0	55.0	55.0
Total Split (%)	34.0%	34.0%	34.0%	34.0%	34.0%	11.0%	55.0%	55.0%	11.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)		11.0		11.0	11.0	66.6	60.5	60.5	78.0	75.2	75.2
Actuated g/C Ratio		0.11		0.11	0.11	0.67	0.60	0.60	0.78	0.75	0.75
v/c Ratio		0.21		0.20	0.72	0.01	1.01	0.05	0.57	0.50	0.02
Control Delay		1.9		40.8	28.4	4.6	52.9	1.1	25.1	8.3	0.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		1.9		40.8	28.4	4.6	52.9	1.1	25.1	8.3	0.1
LOS		A		D	C	A	D	A	C	A	A
Approach Delay		1.9		30.0			50.4			11.2	
Approach LOS		A		C			D			B	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	49	33	217	5	1120	53	155	668	22
v/c Ratio	0.21	0.20	0.72	0.01	1.01	0.05	0.57	0.50	0.02
Control Delay	1.9	40.8	28.4	4.6	52.9	1.1	25.1	8.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.9	40.8	28.4	4.6	52.9	1.1	25.1	8.3	0.1
Queue Length 50th (ft)	0	20	43	1	640	0	41	117	0
Queue Length 95th (ft)	0	45	111	4	#1128	8	110	383	0
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	460	428	556	556	1104	991	270	1347	1116
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.08	0.39	0.01	1.01	0.05	0.57	0.50	0.02

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	5	33	0	217	5	1030	49	143	615	20
Future Volume (veh/h)	30	0	5	33	0	217	5	1030	49	143	615	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.98		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	42	0	7	33	0	0	5	1120	53	155	668	22
Peak Hour Factor	0.71	0.71	0.71	1.00	1.00	1.00	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	155	5	16	182	0		534	1297	1095	277	1354	1163
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.00	0.01	0.70	0.70	0.05	0.75	0.75
Sat Flow, veh/h	1237	74	219	1545	0	1585	1781	1841	1555	1781	1811	1556
Grp Volume(v), veh/h	49	0	0	33	0	0	5	1120	53	155	668	22
Grp Sat Flow(s),veh/h/ln	1530	0	0	1545	0	1585	1781	1841	1555	1781	1811	1556
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.0	0.1	45.9	1.0	2.3	14.8	0.4
Cycle Q Clear(g_c), s	2.8	0.0	0.0	1.8	0.0	0.0	0.1	45.9	1.0	2.3	14.8	0.4
Prop In Lane	0.86		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	0	0	182	0		534	1297	1095	277	1354	1163
V/C Ratio(X)	0.28	0.00	0.00	0.18	0.00		0.01	0.86	0.05	0.56	0.49	0.02
Avail Cap(c_a), veh/h	490	0	0	488	0		611	1297	1095	278	1354	1163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	0.0	0.0	44.0	0.0	0.0	4.7	11.1	4.5	19.0	5.1	3.2
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.5	0.0	0.0	0.0	7.8	0.1	2.5	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.8	0.0	0.0	0.0	16.1	0.3	2.3	4.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	0.0	0.0	44.4	0.0	0.0	4.7	18.9	4.6	21.5	6.3	3.3
LnGrp LOS	D	A	A	D	A		A	B	A	C	A	A
Approach Vol, veh/h		49			33			1178			845	
Approach Delay, s/veh		45.2			44.4			18.2			9.0	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	81.2		12.1	10.9	77.0		12.1				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	5.0	48.5		29.0	5.0	48.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	16.8		3.8	4.3	47.9		4.8				
Green Ext Time (p_c), s	0.0	4.6		0.1	0.0	0.4		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		15.6
HCM 6th LOS		B

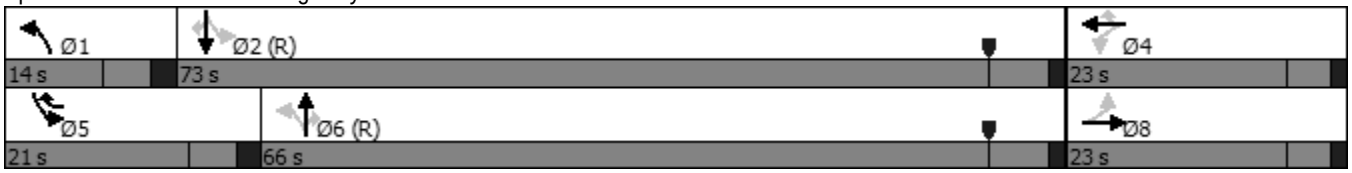
Notes

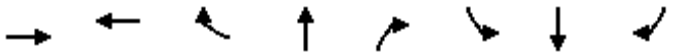
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR	Ø1
Lane Configurations											
Traffic Volume (vph)	25	2	185	2	505	941	185	620	1153	10	
Future Volume (vph)	25	2	185	2	505	941	185	620	1153	10	
Turn Type	Perm	NA	Perm	NA	pm+ov	NA	Perm	pm+pt	NA	Perm	
Protected Phases		8		4	5	6		5	2		1
Permitted Phases	8		4		4		6	2		2	
Detector Phase	8	8	4	4	5	6	6	5	2	2	
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	6.0	8.0	30.0	30.0	8.0	30.0	30.0	8.0
Minimum Split (s)	15.0	15.0	15.0	15.0	14.0	36.5	36.5	14.0	36.5	36.5	14.0
Total Split (s)	23.0	23.0	23.0	23.0	21.0	66.0	66.0	21.0	73.0	73.0	14.0
Total Split (%)	20.9%	20.9%	20.9%	20.9%	19.1%	60.0%	60.0%	19.1%	66.4%	66.4%	13%
Yellow Time (s)	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0	4.0
All-Red Time (s)	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	6.0	6.5	6.5	6.0	6.5	6.5	
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	None	None	None	C-Min	C-Min	None	C-Min	C-Min	None
Act Effct Green (s)		21.9		21.9	41.7	55.8	55.8	77.1	76.6	76.6	
Actuated g/C Ratio		0.20		0.20	0.38	0.51	0.51	0.70	0.70	0.70	
v/c Ratio		0.30		0.79	0.85	0.57	0.22	0.80	0.53	0.01	
Control Delay		37.0		66.1	41.6	19.8	2.4	17.7	8.7	0.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		37.0		66.1	41.6	19.8	2.4	17.7	8.7	0.0	
LOS		D		E	D	B	A	B	A	A	
Approach Delay		37.0		48.2		16.9			11.8		
Approach LOS		D		D		B			B		

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 20.8	Intersection LOS: C
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: US Highway 40 & Walton Creek Rd.





Lane Group	EBT	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	67	208	561	1001	197	674	1253	11
v/c Ratio	0.30	0.79	0.85	0.57	0.22	0.80	0.53	0.01
Control Delay	37.0	66.1	41.6	19.8	2.4	17.7	8.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	66.1	41.6	19.8	2.4	17.7	8.7	0.0
Queue Length 50th (ft)	33	147	327	228	0	70	170	0
Queue Length 95th (ft)	43	#297	#549	286	33	138	211	0
Internal Link Dist (ft)	63	931		1564			1031	
Turn Bay Length (ft)			140		280	165		295
Base Capacity (vph)	225	263	660	1877	935	844	2379	1080
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	0.30	0.79	0.85	0.53	0.21	0.80	0.53	0.01

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	2	10	185	2	505	0	941	185	620	1153	10
Future Volume (veh/h)	25	2	10	185	2	505	0	941	185	620	1153	10
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		0.99	1.00		0.99
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	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	45	4	18	206	2	0	0	1001	197	674	1253	11
Peak Hour Factor	0.56	0.56	0.56	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	2	2	6	2
Cap, veh/h	237	28	77	303	2		319	2008	905	853	2518	1152
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.00	0.57	0.57	0.10	0.73	0.73
Sat Flow, veh/h	1112	170	471	1456	14	1585	1781	3497	1577	3456	3441	1574
Grp Volume(v), veh/h	67	0	0	208	0	0	0	1001	197	674	1253	11
Grp Sat Flow(s),veh/h/ln	1753	0	0	1470	0	1585	1781	1749	1577	1728	1721	1574
Q Serve(g_s), s	0.0	0.0	0.0	11.4	0.0	0.0	0.0	18.8	6.7	8.1	16.9	0.2
Cycle Q Clear(g_c), s	3.6	0.0	0.0	15.0	0.0	0.0	0.0	18.8	6.7	8.1	16.9	0.2
Prop In Lane	0.67		0.27	0.99		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	0	0	306	0		319	2008	905	853	2518	1152
V/C Ratio(X)	0.20	0.00	0.00	0.68	0.00		0.00	0.50	0.22	0.79	0.50	0.01
Avail Cap(c_a), veh/h	342	0	0	306	0		447	2008	905	968	2518	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	0.0	0.0	44.4	0.0	0.0	0.0	14.0	11.4	13.6	6.2	4.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	6.7	0.0	0.0	0.0	0.9	0.6	4.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	6.0	0.0	0.0	0.0	6.9	2.3	3.4	4.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	0.0	0.0	51.1	0.0	0.0	0.0	14.9	11.9	17.6	6.9	4.0
LnGrp LOS	D	A	A	D	A		A	B	B	B	A	A
Approach Vol, veh/h		67			208			1198			1938	
Approach Delay, s/veh		41.2			51.1			14.4			10.6	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	87.0		23.0	17.3	69.7		23.0				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	8.0	66.5		18.0	15.0	59.5		18.0				
Max Q Clear Time (g_c+I1), s	0.0	18.9		17.0	10.1	20.8		5.6				
Green Ext Time (p_c), s	0.0	37.9		0.1	1.2	29.6		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		15.0	
HCM 6th LOS		B	

Notes

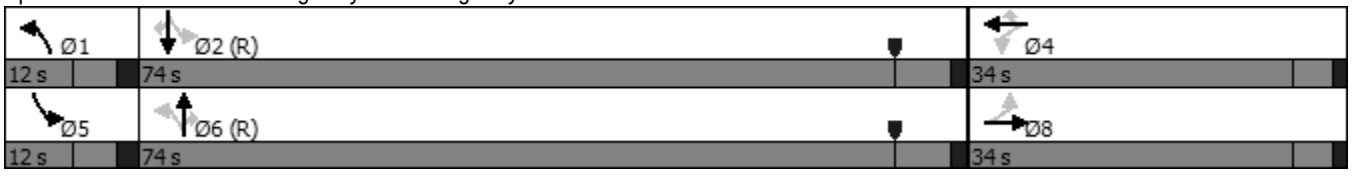
User approved pedestrian interval to be less than phase max green.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	25	0	45	0	176	5	875	55	203	1045	35
Future Volume (vph)	25	0	45	0	176	5	875	55	203	1045	35
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		8		4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	8	8	4	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	34.0	34.0	34.0	34.0	34.0	11.0	28.5	28.5	11.0	28.5	28.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	12.0	74.0	74.0	12.0	74.0	74.0
Total Split (%)	28.3%	28.3%	28.3%	28.3%	28.3%	10.0%	61.7%	61.7%	10.0%	61.7%	61.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	4.0	5.0	5.0	4.0	5.0	5.0
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	6.0	6.5	6.5	6.0	6.5	6.5
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		10.1		10.1	10.1	76.5	70.4	70.4	98.9	96.0	96.0
Actuated g/C Ratio		0.08		0.08	0.08	0.64	0.59	0.59	0.82	0.80	0.80
v/c Ratio		0.22		0.40	0.67	0.02	0.89	0.07	0.52	0.79	0.03
Control Delay		2.6		60.2	21.0	4.4	33.4	2.1	20.2	14.1	0.3
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		2.6		60.2	21.0	4.4	33.4	2.1	20.2	14.1	0.3
LOS		A		E	C	A	C	A	C	B	A
Approach Delay		2.6		29.0			31.4			14.7	
Approach LOS		A		C			C			B	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68.5 (57%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 82.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: US Highway 40 & Doughtery Rd./Stone Lane



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	41	51	200	5	951	60	221	1136	38
v/c Ratio	0.22	0.40	0.67	0.02	0.89	0.07	0.52	0.79	0.03
Control Delay	2.6	60.2	21.0	4.4	33.4	2.1	20.2	14.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	60.2	21.0	4.4	33.4	2.1	20.2	14.1	0.3
Queue Length 50th (ft)	0	38	12	1	566	0	62	333	0
Queue Length 95th (ft)	0	74	79	3	#954	15	154	#1112	3
Internal Link Dist (ft)	365	73			560			590	
Turn Bay Length (ft)				435		290	435		
Base Capacity (vph)	383	362	514	288	1071	873	429	1433	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.14	0.39	0.02	0.89	0.07	0.52	0.79	0.03

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	5	45	0	176	5	875	55	203	1045	35
Future Volume (veh/h)	25	0	5	45	0	176	5	875	55	203	1045	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.97	0.97		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1900	1870	1870	1900	1870	1870	1841	1870	1870	1811	1870
Adj Flow Rate, veh/h	34	0	7	51	0	0	5	951	60	221	1136	38
Peak Hour Factor	0.73	0.73	0.73	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	0	2	2	4	2	2	6	2
Cap, veh/h	149	5	21	174	0		257	1345	1137	391	1398	1202
Arrive On Green	0.08	0.00	0.08	0.08	0.00	0.00	0.01	0.73	0.73	0.05	0.77	0.77
Sat Flow, veh/h	1241	68	270	1495	0	1585	1781	1841	1556	1781	1811	1557
Grp Volume(v), veh/h	41	0	0	51	0	0	5	951	60	221	1136	38
Grp Sat Flow(s),veh/h/ln	1579	0	0	1495	0	1585	1781	1841	1556	1781	1811	1557
Q Serve(g_s), s	0.0	0.0	0.0	0.9	0.0	0.0	0.1	34.5	1.3	3.6	46.1	0.7
Cycle Q Clear(g_c), s	2.6	0.0	0.0	3.5	0.0	0.0	0.1	34.5	1.3	3.6	46.1	0.7
Prop In Lane	0.83		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	0	0	174	0		257	1345	1137	391	1398	1202
V/C Ratio(X)	0.23	0.00	0.00	0.29	0.00		0.02	0.71	0.05	0.56	0.81	0.03
Avail Cap(c_a), veh/h	413	0	0	404	0		334	1345	1137	396	1398	1202
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	0.0	0.0	52.8	0.0	0.0	11.3	9.0	4.5	11.8	8.4	3.2
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.9	0.0	0.0	0.0	3.2	0.1	1.8	5.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.5	0.0	0.0	0.0	11.8	0.4	2.5	14.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	0.0	0.0	53.7	0.0	0.0	11.3	12.1	4.6	13.6	13.7	3.3
LnGrp LOS	D	A	A	D	A		B	B	A	B	B	A
Approach Vol, veh/h		41			51			1016			1395	
Approach Delay, s/veh		53.1			53.7			11.7			13.4	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	99.1		14.1	11.7	94.2		14.1				
Change Period (Y+Rc), s	6.0	6.5		5.0	6.0	6.5		5.0				
Max Green Setting (Gmax), s	6.0	67.5		29.0	6.0	67.5		29.0				
Max Q Clear Time (g_c+I1), s	2.1	48.1		5.5	5.6	36.5		4.6				
Green Ext Time (p_c), s	0.0	9.2		0.2	0.0	8.2		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		14.2	
HCM 6th LOS		B	

Notes

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

Signal Warrant Worksheets

Intersection: **US 40 at Dougherty Rd/Stone Lane**

Warrant 2: 4 Hour Analysis (70%) - Existing Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 1		
0:00				no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	625	17		no
7:00	1,250	21		no
8:00	**1,453**	**29**		no
9:00	1,250	25		no
10:00	1,453	12		no
11:00			Warrant is Met (yes/no)	no
12:00				no
13:00				no
14:00	1,517	16		no
15:00	1,517	10		no
16:00	1,724	0		no
17:00	**1,724**	**26**		no
18:00	1,293	23		no
19:00	1,086	18		no
20:00	655	13		no
21:00				no
22:00				no
23:00				no
Total	**15,547**	**210**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.

* Does not include westbound right-turns on Stone Lane since it has a deceleration lane and acceleration lane.

Intersection: **US 40 at Dougherty Rd/Stone Lane**

Warrant 2: 4 Hour Analysis (70%) - 2026 Bkgrd Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 1		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	650	17		no
7:00	1,299	21		no
8:00	**1,511**	**30**		no
9:00	1,299	26		no
10:00	1,511	13		no
11:00				no
12:00				no
13:00				no
14:00	1,577	16		no
15:00	1,577	11		no
16:00	1,792	0		no
17:00	**1,792**	**27**		no
18:00	1,344	24		no
19:00	1,129	19		no
20:00	681	14		no
21:00				no
22:00				no
23:00				no
Total	**16,162**	**218**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.
* Does not include westbound right-turns on Stone Lane since it has a deceleration lane and acceleration lane.

Intersection: US 40 at Dougherty Rd/Stone Lane

Warrant 2: 4 Hour Analysis (70%) - 2026 Bkgrd + Project Volumes

	Major	Minor*		Warrant 2 (Figure 4C-2)
	US 40	Dougherty Rd/Stone Ln		
Time of Day	Number of Lanes 2	1		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	667	17		no
7:00	1,335	21		no
8:00	**1,552**	**30**		no
9:00	1,335	26		no
10:00	1,552	13		no
11:00				no
12:00				no
13:00				no
14:00	1,618	16		no
15:00	1,618	11		no
16:00	1,839	0		no
17:00	**1,839**	**27**		no
18:00	1,379	24		no
19:00	1,159	19		no
20:00	699	14		no
21:00				no
22:00				no
23:00				no
Total	**16,592**	**218**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.

* Does not include westbound right-turns on Stone Lane since it has a deceleration lane and acceleration lane.

Intersection: US 40 at Dougherty Rd/Stone Lane

Warrant 2: 4 Hour Analysis (70%) - 2042 Bkgrd Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 1		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	787	20		no
7:00	1,574	25		no
8:00	**1,830**	**35**		no
9:00	1,574	30		no
10:00	1,830	15		no
11:00				no
12:00				no
13:00				no
14:00	1,918	24		no
15:00	1,918	16		no
16:00	2,180	0		no
17:00	**2,180**	**40**		no
18:00	1,635	36		no
19:00	1,373	28		no
20:00	828	20		no
21:00				no
22:00				no
23:00				no
Total	**19,627**	**289**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.

* Does not include westbound right-turns on Stone Lane since it has a deceleration lane and acceleration lane.

Intersection: US 40 at Dougherty Rd/Stone Lane

Warrant 2: 4 Hour Analysis (70%) - 2042 Bkgrd + Project Volumes

	Major	Minor*		Warrant 2 (Figure 4C-2)
	US 40	Dougherty Rd/Stone Ln		
Time of Day	Number of Lanes 2	1		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	801	20		no
7:00	1,602	25		no
8:00	**1,863**	**35**		no
9:00	1,602	30		no
10:00	1,863	15		no
11:00				no
12:00				no
13:00				no
14:00	1,952	27		no
15:00	1,952	18		no
16:00	2,218	0		no
17:00	**2,218**	**45**		no
18:00	1,664	41		no
19:00	1,397	32		no
20:00	843	23		no
21:00				no
22:00				no
23:00				no
Total	**19,975**	**311**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.

* Does not include westbound right-turns on Stone Lane since it has a deceleration lane and acceleration lane.

Intersection: **US 40 at Dougherty Rd/Stone Lane**

Warrant 2: 4 Hour Analysis (70%) - Existing Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 2		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	625	27		no
7:00	1,250	33		no
8:00	**1,453**	**47**		no
9:00	1,250	40		no
10:00	1,453	20		no
11:00				no
12:00				no
13:00				no
14:00	1,517	28		no
15:00	1,517	19		no
16:00	1,724	0		no
17:00	**1,724**	**47**		no
18:00	1,293	42		no
19:00	1,086	33		no
20:00	655	24		no
21:00				no
22:00				no
23:00				no
Total	**15,547**	**360**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.
* Includes 100% of westbound right-turns on Stone Lane for comparison purposes.

Intersection: **US 40 at Dougherty Rd/Stone Lane**

Warrant 2: 4 Hour Analysis (70%) - Existing Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 2		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	650	27		no
7:00	1,299	33		no
8:00	**1,511**	**47**		no
9:00	1,299	40		no
10:00	1,511	20		no
11:00				no
12:00				no
13:00				no
14:00	1,577	28		no
15:00	1,577	19		no
16:00	1,792	0		no
17:00	**1,792**	**47**		no
18:00	1,344	42		no
19:00	1,129	33		no
20:00	681	24		no
21:00				no
22:00				no
23:00				no
Total	**16,162**	**360**	**0**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.
* Includes 100% of westbound right-turns on Stone Lane for comparison purposes.

Intersection: US 40 at Dougherty Rd/Stone Lane

Warrant 2: 4 Hour Analysis (70%) - 2026 Bkgrd + Project Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 2		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	667	45		no
7:00	1,335	56		no
8:00	**1,552**	**79**		no
9:00	1,335	68		no
10:00	1,552	34		no
11:00				no
12:00				no
13:00				no
14:00	1,618	56		no
15:00	1,618	37		no
16:00	1,839	0		no
17:00	**1,839**	**93**		Yes
18:00	1,379	84		Yes
19:00	1,159	65		no
20:00	699	47		no
21:00				no
22:00				no
23:00				no
Total	**16,592**	**664**	**2**	**Not Met**

*The minor volume for each hour represents the higher of either minor approach.

* Includes 100% of westbound right-turns on Stone Lane for comparison purposes.

Intersection: **US 40 at Dougherty Rd/Stone Lane**

Warrant 2: 4 Hour Analysis (70%) - 2042 Bkgrd Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 2		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	787	128		Yes
7:00	1,574	160		Yes
8:00	**1,830**	**225**		Yes
9:00	1,574	194		Yes
10:00	1,830	97		Yes
11:00				no
12:00				no
13:00				no
14:00	1,918	111		Yes
15:00	1,918	74		no
16:00	2,180	0		no
17:00	**2,180**	**185**		Yes
18:00	1,635	167		Yes
19:00	1,373	130		Yes
20:00	828	93		no
21:00				no
22:00				no
23:00				no
Total	**19,627**	**1,564**	**9**	**Met**

*The minor volume for each hour represents the higher of either minor approach.

* Includes 100% of westbound right-turns on Stone Lane for comparison purposes.

Intersection: US 40 at Dougherty Rd/Stone Lane

Warrant 2: 4 Hour Analysis (70%) - 2042 Bkgrd + Project Volumes

	Major US 40	Minor* Dougherty Rd/Stone Ln		Warrant 2 (Figure 4C-2)
Time of Day	Number of Lanes 2	 2		
0:00			Warrant is Met (yes/no)	no
1:00				no
2:00				no
3:00				no
4:00				no
5:00				no
6:00	801	143		Yes
7:00	1,602	178		Yes
8:00	**1,863**	**250**		Yes
9:00	1,602	215		Yes
10:00	1,863	108		Yes
11:00				no
12:00				no
13:00				no
14:00	1,952	133		Yes
15:00	1,952	89		Yes
16:00	2,218	0		no
17:00	**2,218**	**222**		Yes
18:00	1,664	200		Yes
19:00	1,397	155		Yes
20:00	843	111		Yes
21:00				no
22:00				no
23:00				no
Total	**19,975**	**1,804**	**11**	**Met**

*The minor volume for each hour represents the higher of either minor approach.

* Includes 100% of westbound right-turns on Stone Lane for comparison purposes.

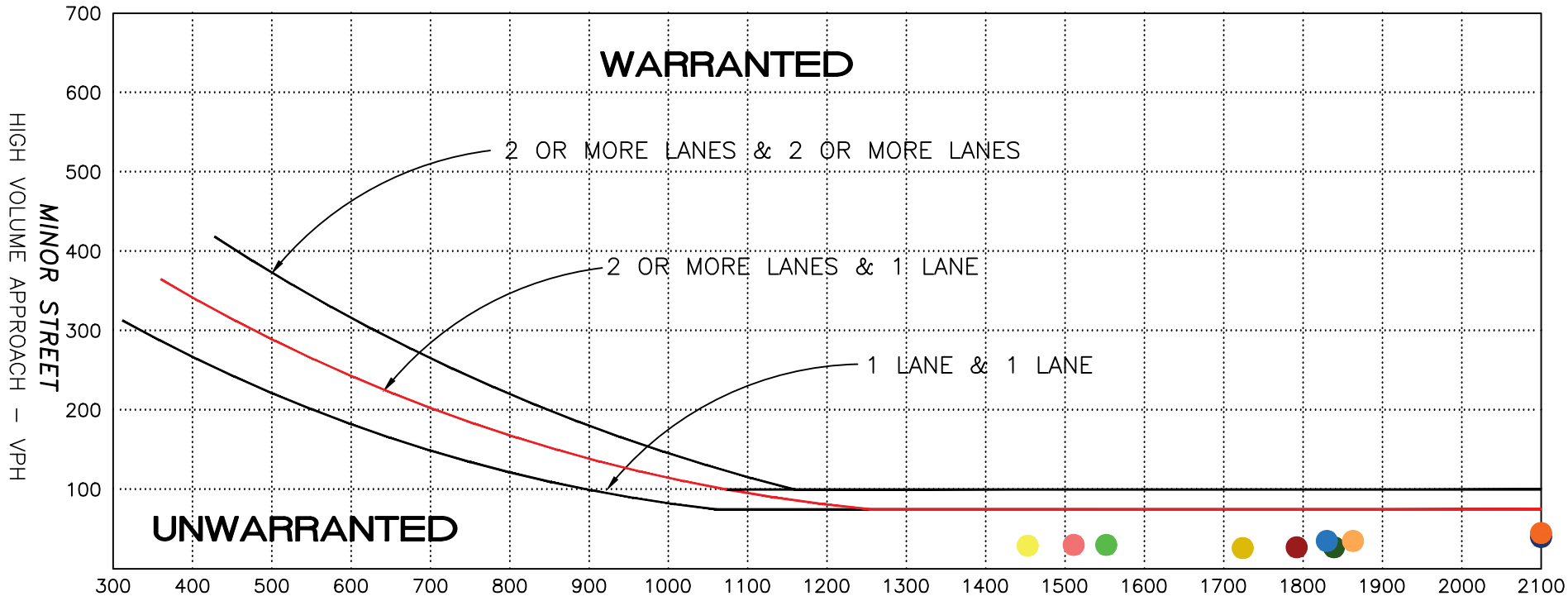
PEAK HOUR VOLUME WARRANT (70%)

APPLIED FOR PLANNING PURPOSES

ASSUMES 0% WESTBOUND RIGHT-TURNS

KEY FOR INTERSECTIONS

MET	AM	PM	
No	●	●	Year 2022 Existing
No	●	●	Year 2026 Background
No	●	●	Year 2026 Bkgrd + Project (without Stone Lane bridge)
No	●	●	Year 2042 Background
No	●	●	Year 2042 Bkgrd + Project (with Stone Lane bridge)



MAJOR STREET

TOTAL OF BOTH APPROACHES – VPH

NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FOX TUTTLE TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

PEAK HOUR SIGNAL WARRANT - US 40 AT DOUGHTERY RD/STONE LANE

FT Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	10A

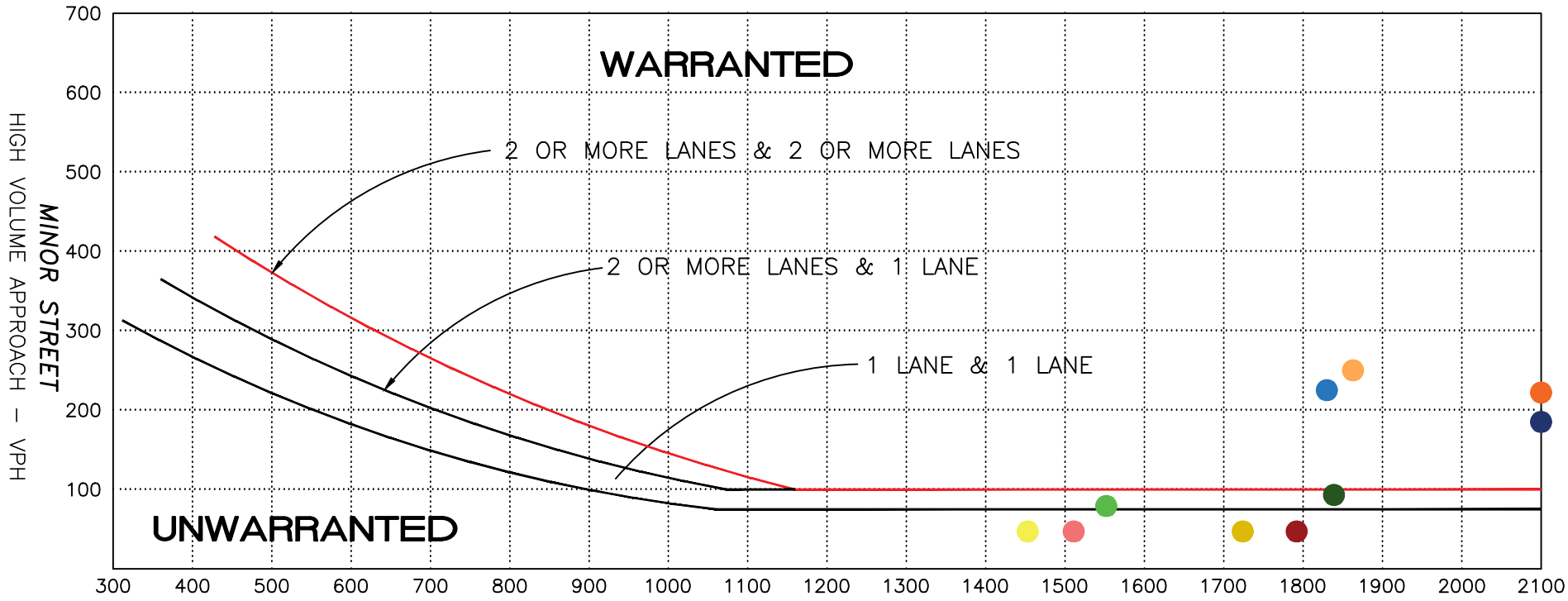
PEAK HOUR VOLUME WARRANT (70%)

APPLIED FOR PLANNING PURPOSES

ASSUMES 100% WESTBOUND RIGHT-TURNS

KEY FOR INTERSECTIONS

MET	AM	PM	
No			Year 2022 Existing
No			Year 2026 Background
No			Year 2026 Bkgrd + Project (without Stone Lane bridge)
Yes			Year 2042 Background
Yes			Year 2042 Bkgrd + Project (with Stone Lane bridge)



MAJOR STREET

TOTAL OF BOTH APPROACHES – VPH

NOTE: 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

FOX TUTTLE TRANSPORTATION GROUP

INDIAN MEADOWS LOT 1 HOTEL DEVELOPMENT - STEAMBOAT SPRINGS, CO

PEAK HOUR SIGNAL WARRANT - US 40 AT DOUGHTERY RD/STONE LANE

FT Project #	21073	Original Scale	NTS	Date	2/25/2022	Drawn by	CRS	Figure #	10B