

Traffic Impact Study

Mineral Avenue Redevelopment

Littleton, Colorado

Prepared for:

Republic Investment Group

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

Mineral Avenue Redevelopment

Littleton, Colorado

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1.0 EXECUTIVE SUMMARY

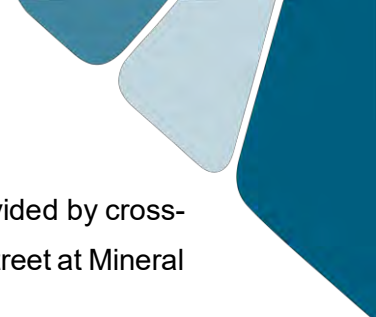
Mineral Avenue Redevelopment is proposed to be located along the south side of Mineral Avenue, between Mineral Place and Southpark Terrace in Littleton, Colorado. The project is proposed to include a retail development area and a residential area. For purposes of this traffic study, the retail development was evaluated to include a 161,000 square foot discount club, a 106,000 square foot home improvement superstore, 50,000 square feet of retail uses, 19,000 square feet of restaurant uses, and a 6,500 square foot drive-in bank. The residential portion is proposed to include 370 multifamily units. It is expected that the redevelopment project will be completed in the next five years. Therefore, analysis was conducted for the 2028 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Littleton standards and requirements:

1. Mineral Avenue & Santa Fe Dr. (US-85)	8. Mineral Avenue & Broadway
2. Mineral Avenue & Jackass Hill Road	9. Grant Way & Broadway
3. Mineral Avenue & Southpark Lane	10. Southpark Drive & Southpark Terrace
4. Mineral Avenue & Mineral Place	11. Southbound Drive & Broadway
5. Mineral Avenue & Elati Street	12. County Line Road & Southpark Terrace
6. Mineral Avenue & Southpark Terrace	13. County Line Road & Broadway
7. Mineral Avenue & Mineral 150 Avenue	18. Mineral Avenue & Peninsula Drive

In addition, the four proposed full movement accesses along Southpark Terrace were included for evaluation.

Regional access to the Mineral Avenue Redevelopment will be provided by Santa Fe Drive (US-85) and Colorado 370 (C-470). Primary access will be provided by Mineral Avenue, County Line Road, and Broadway. Direct access to the retail portion will be provided as the south legs of Mineral Place and Elati Street intersections along Mineral Avenue and three accesses along the



west side of Southpark Terrace. Direct access to the residential portion will be provided by cross-access connecting through the retail development area from the south leg of Elati Street at Mineral Avenue and one direct access along the west side of Southpark Terrace.

Accounting for internal capture, the overall Mineral Avenue Redevelopment is expected to generate approximately 24,652 daily weekday driveway trips, with 1,422 of these trips occurring during the morning peak hour and 2,062 trips occurring during the afternoon peak hour. Accounting for pass-by, expected net new (non pass-by) trips to the surrounding street network results in approximately 14,886 weekday daily trips, of which 956 trips and 1,198 trips are anticipated during the weekday morning and afternoon peak hours, respectively.

Based on the analysis presented in this report, Kimley-Horn believes the Mineral Avenue Redevelopment project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the east leg of Mineral Avenue at US-85 (Santa Fe Drive) is not anticipated to increase existing access traffic volumes by more than 20 percent, with a maximum expected increase at 16 percent during the afternoon peak hour on the east leg (379 / 2,322). Therefore, a CDOT access permit is not anticipated to be required in association with this project.
- The Mineral Avenue and Santa Fe Drive (US-85) (#1) intersection is currently under design to be improved with construction completed by 2026. The improvement includes removing all left turning vehicles that currently exist at the intersection and diverting them to three proposed intersections adjacent to existing intersection (quadrant intersection improvement). It was confirmed that this intersection would benefit from this improvement to serve existing traffic.
- At the Mineral Avenue and Jackass Hill Road (#2) intersection, the existing 200-foot eastbound left turn lane is recommended to be extended to 300 feet. Of note, the project does not contribute to this movement. It is believed that this left turn lane extension is feasible by

reconstructing the raised median along Mineral Avenue to accommodate the extra 100 feet of turn lane length.

- The existing 125-foot northbound left along Southpark Lane at Mineral Avenue (#3) has a vehicle queue exceeding its length. This left turn lane cannot be feasibly extended without blocking the northbound through lane. Of note, the project does not contribute to this movement. However, the north/south approaches operate with split phasing. It was found that removing the split phasing for the intersection would provide the most overall benefit. If the City desires, the raised medians within the north and south legs of Southpark Lane could be removed to designate a 125-foot southbound left turn lane and 150-foot dual northbound left turn lanes. The southbound left turn is recommended to operate with protected-permissive phasing with the dual northbound left turns recommended to operate with protected-only phasing. Therefore, the City may want to explore improving the north and south legs to improve queueing and remove the split phasing on the northbound and southbound approaches.
- With the addition of project traffic, the Mineral Place (#4) and Elati Street (#5) intersections along Mineral Avenue are both anticipated to meet the Four-Hour MUTCD Signal Warrant. Therefore, it is recommended that these two intersections be signalized. The eastbound and westbound left turn movements are recommended to operate with protected-permissive left turn phasing. Northbound left turn lanes are recommended to be provided at the Mineral Place (#4) and Elati Street (#5) intersections along Mineral Avenue. The northbound approaches at both intersections are recommended to include separate 200-foot left turn lanes and shared through/right turn lanes. Additionally, the westbound left turn lane at Elati Street (#5) along Mineral Avenue is recommended to be extended to 325 feet, which can be accommodated within the existing 20-foot wide median.
- The existing 125-foot westbound left turn lane along Mineral Avenue at Southpark Terrace (#6) is recommended to be extended by 25 feet to provide a length of 150 feet with the addition of project traffic. Extending this turn lane an additional 25 feet will require reconstructing the raised median by shortening the shared taper from 150 feet to 125 feet with the eastbound left turn lane at the adjacent Southpark Plaza intersection to the east. This will not affect the length of the back-to back eastbound left turn lane serving the shopping center



to the north. Likewise, the existing 50-foot northbound left turn lane is recommended to be extended to 125 feet at this Mineral Avenue at Southpark Terrace (#6) intersection. Extension of this northbound left turn lane will likely require reconstruction of the east side taper.

- The northbound approach along Broadway at Mineral Avenue (#8) is recommended to be restriped/reconstructed to provide dual northbound left turn lanes. To accomplish this, the raised median within the south leg of the intersection is recommended to be removed and the southbound lanes shifted west. The southbound through and right turn lanes will shift to the west with the existing curb, gutter, and sidewalk reconstructed. Additionally, new traffic signal poles/mast arms will likely be needed on the northwest and northeast corners of the intersection. The northbound dual left turn lanes are recommended to provide a length of 325 feet. The northbound and southbound left turns are recommended to operate with lead/lag operations. The 150-foot dual eastbound left turn lanes are recommended to be extended to the furthest possible at 225 feet and 250 feet as available without conflicting with the existing westbound left turn lane at Mineral Avenue 150 W to the west. The southbound right turn lane is recommended to provide a length of 500 feet while the movement is recommended to operate with right turn overlap phasing.
- The intersection of Southpark Drive and Southpark Terrace (#10) is recommended to be converted from an all-way stop control to either a single lane mini roundabout or signalized intersection. As stated by the City, the intersection will need to meet warrant for signalization before a signal is installed. If reconstructed as a single lane mini roundabout, the center island and splitter islands are recommended to be constructed to be traversable by trucks.
- At the intersection of Southpark Drive and Broadway (#11), the northbound left turn lane is recommended to be extended from 125 feet to 175 feet. The turn lane will extend into the shared taper with the southbound left at County Line Road (#13). However, the outside southbound left turn lane at County Line Road could be shortened from 350 feet to 300 feet and still provide a shared taper of 75 feet to accommodate the recommended northbound left turn lane extension at Southpark Drive and Broadway (#11).

- The existing 175-foot southbound left turn lane at Southpark Terrace at County Line Road (#12) intersection may need to be extended by restriping to 250 feet to accommodate the anticipated vehicle queue.
- The 100-foot inside northbound left turn lane of the dual lefts at the County Line Road and Broadway (#13) intersection is recommended to be extended by restriping to provide a length of 175 feet by reducing the striped taper from 150 feet to 75 feet. The heavy eastbound right turn movements identify the need to extend the right turn lane length to accommodate the existing and future queue lengths. The eastbound right turn lane is recommended to be a continuous acceleration-deceleration lane constructed for approximately 500 feet back to the Highlands Ranch Healthcare Plaza right-in/right-out driveway to the west.
- With completion of the Mineral Avenue Redevelopment project, four (4) accesses are proposed along Southpark Terrace, the three northernmost accesses will serve the retail area while the southernmost access will be the primary access for the residential area. These four accesses are planned to provide full turning movements into and out of the site. It is recommended that R1-1 “STOP” signs be installed on the eastbound approaches at all four accesses, exiting the development. The northbound left turn movements will be accommodated within the existing two-way left turn lane area, redesignated with a 75-foot left turn lane at the North Retail Access, a 100-foot left turn lane at the Middle Retail Access, a 150-foot left turn lane at the South Retail Access and a 50-foot left turn lane at the Residential Access. Additionally, southbound right turn lanes at the two northern retail accesses (#14-15) and the residential access (#17) are recommended to provide turn lane lengths of 125 feet.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Littleton and the Manual on Uniform Traffic Control Devices (MUTCD) – 2023 Edition.

2.0 INTRODUCTION

Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for the Mineral Avenue Redevelopment proposed to be located along the south side of Mineral Avenue, between Mineral Place and Southpark Terrace in Littleton, Colorado. This traffic study will include two separate developments, a northern retail area and a southern residential area. A vicinity map illustrating the overall Mineral Avenue Redevelopment development location is shown in **Figure 1**. For purposes of this traffic study, the retail development was evaluated to include a 161,000 square foot discount club, a 106,000 square foot home improvement superstore, 50,000 square feet of retail uses, 19,000 square feet of restaurant uses, and a 6,500 square foot drive-in bank. The residential portion is proposed to include 370 multifamily units. A conceptual site plan is attached in **Appendix H**. It is expected that the overall Mineral Avenue Redevelopment project will be completed in the next five years; therefore, analysis was conducted for the 2028 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with the City of Littleton standards and requirements:

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5. Mineral Avenue & Elati Street	12. County Line Road & Southpark Terrace
6. Mineral Avenue & Southpark Terrace	13. County Line Road & Broadway
7. Mineral Avenue & Mineral 150 Avenue	18. Mineral Avenue & Peninsula Drive

In addition, the four proposed full movement accesses along Southpark Terrace were included for evaluation.



Regional access to the Mineral Avenue Redevelopment will be provided by Santa Fe Drive (US-85) and Colorado 370 (C-470). Primary access will be provided by Mineral Avenue, County Line Road, and Broadway. Direct access to the retail portion will be provided as the south legs of Mineral Place and Elati Street intersections along Mineral Avenue and three accesses along the west side of Southpark Terrace. Direct access to the residential portion will be provided by cross-access connecting through the retail development area from the south leg of Elati Street at Mineral Avenue and one direct access along the west side of Southpark Terrace.

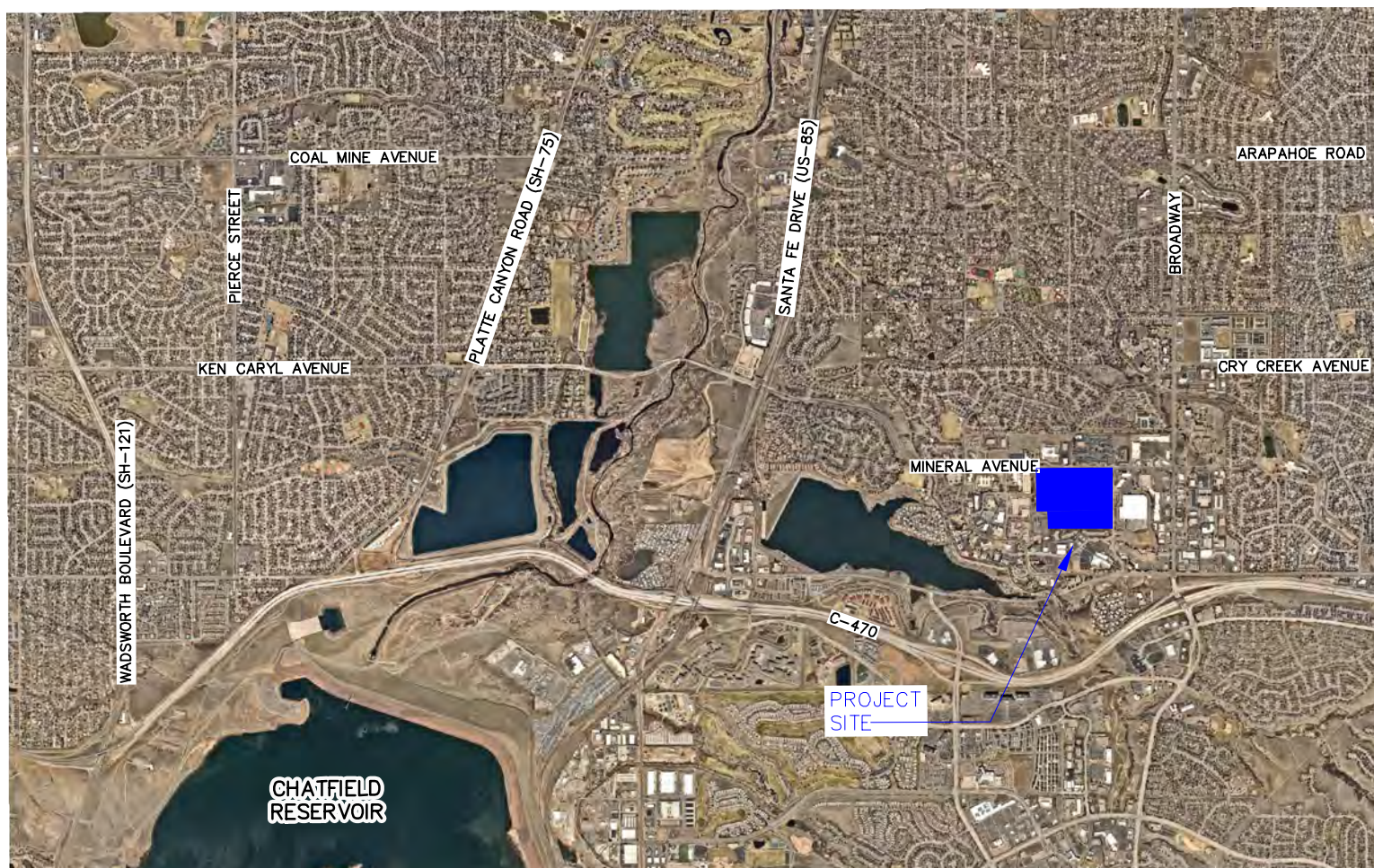


FIGURE 1
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
VICINITY MAP

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The existing site was previously a large research and development office facility for the Lumen company. However, the site is vacant and generates no traffic today. To the west of the site are storage and office buildings and to the east is a distribution building and office buildings, all part of SouthPark. Extending further to the south is C-470 which runs eastbound and westbound within this part of the Denver metro area. Further north are residential homes and residential communities within the City of Littleton.

3.2 Existing Roadway Network

Mineral Avenue extends eastbound and westbound two through lanes in each direction. The posted speed limit is 40 miles per hour. Designated bicycle lanes are provided between Jackass Hill Road/Long Avenue and Broadway. However, the bike lanes blend/terminate into the right turn lanes at every intersection along Mineral Avenue. Sidewalks are provided on both sides of the roadway throughout the study area.

Santa Fe Drive (US-85) is a north/south roadway with two lanes of travel in each direction. The posted speed limit through the study intersection of Mineral Avenue is 50 miles per hour.

Jackass Hill Road is a two-lane roadway that primarily extends in the north/south direction north of Mineral Avenue. South of Mineral Avenue, the roadway name changes to Long Avenue. The posted speed limit along Jackass Hill Road is 30 miles per hour while Long Avenue has a posted speed limit of 25 miles per hour. Both roadways provide on-street designated bicycle lanes.

Windermere Street/Southpark Lane extends in the north/south direction with one through lane in each direction. On-street bicycle facilities are provided on both sides of the roadway. The posted speed limit is 30 miles per hour.

Mineral Place extends north/south as a two-lane roadway providing access to various developments north and south of Mineral Avenue. Likewise, Elati Street is a two-lane roadway that runs parallel to Mineral Place to the east. Elati Street provides bicycle lanes on the east and west sides of the roadway.



Southpark Terrace is a north/south roadway with one through lane provided in each direction. A two-way left turn lane is provided along the roadway between just south of Mineral Avenue and Southpark Drive. The posted speed limit is 30 miles per hour. Southpark Terrace includes a sidewalk on the east side of the roadway, but not along project frontage of the west side of the roadway.

Mineral Avenue 150 W provides access to the two shopping centers on the north and south side of Mineral Avenue. Posted speed limits are not provided along Mineral Avenue 150 W.

Broadway extends northbound/southbound with a posted speed limit of 40 miles per hour. North of Mineral Avenue the roadway provides two through lanes in each direction. South of Mineral Avenue, Broadway widens to provide three through lanes in each direction.

Grant Way is a two-lane roadway that extends eastbound/westbound. Posted speed limits are not provided along the roadway. West of Broadway, Grant Way serves as an access to a shopping center.

Southpark Drive extends east/west as a three-lane roadway, with one through lane in each direction and a two-way left turn lane designated with actual left turn lanes at intersections and major accesses. The posted speed limit is 30 miles per hour.

County Line Road is an east/west road that provides two through lanes in each direction through the study intersections. The roadway has a posted speed limit of 40 miles per hour.

The signalized intersection of Mineral Avenue and Santa Fe Drive (US-85) (#1) operates with protected-only left turn phasing on all four approaches. The eastbound, northbound, and southbound approaches each provide dual left turn lanes, two through lanes, and a right turn lane. The westbound approach of Mineral Avenue provides a single left turn lane, two through lanes, and a right turn lane. Northbound and southbound acceleration lanes are provided along Santa Fe Drive (US-85) for the westbound right movement and the eastbound right movement, respectively. Likewise, a southbound to westbound acceleration lane is provided along Mineral Avenue. Additionally, the westbound right turn movement operates with overlap phasing with the dual southbound left turn movements since this turn isn't a channelized free movement. An aerial photo of the existing intersection configuration is below (north is up - typical).



Mineral Avenue & Santa Fe Dr (#1)

The signalized intersection of Mineral Avenue and Jackass Hill Road/Long Avenue (#2) operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue and permissive-only left turn phasing on the northbound Long Avenue approach and southbound Jackass Hill Road approach. The eastbound and westbound approaches of Mineral Avenue each provide a left turn lane, two through lanes, and a right turn lane. The northbound approach provides a left turn lane and a shared through/right turn lane while the southbound approach provides separate left turn lane, through lane, and right turn lane. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Jackass Hill Road/Long Avenue (#2)

The intersection of Mineral Avenue and Windermere Street/Southpark Lane (#3) is signalized and operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue. The northbound Southpark Lane and southbound Windermere Street approaches operate with split phasing. The eastbound and westbound approaches of Mineral Avenue each provide a left turn lane, two through lanes, and a right turn lane. The northbound approach provides a left turn lane and a shared through/right turn lane while the southbound approach provides a shared left turn/through lane and separate right turn lane. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Windermere Street/Southpark Lane (#3)

The unsignalized intersection of Mineral Avenue and Mineral Place (#4) operates with stop control on the northbound access approach and southbound Mineral Place approach. The eastbound and westbound approaches of Mineral Avenue both provide a left turn lane, two through lanes, and a right turn lane. The northbound and southbound approaches provide a single lane for shared movements. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Mineral Place (#4)

The Mineral Avenue and Elati Street (#5) unsignalized intersection operates with stop control on the northbound access approach and southbound Elati Street approach. The eastbound and westbound approaches of Mineral Avenue provide a left turn lane, two through lanes, and a right turn lane. The northbound and southbound approaches provide a single lane for shared movements. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Elati Street (#5)

The signalized intersection of Mineral Avenue and Mineral Court/Southpark Terrace (#6) operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue and permissive-only left turn phasing on the northbound Southpark Terrace approach and southbound Mineral Court approach. The eastbound and westbound approaches each provide a left turn lane, two through lanes, and a right turn lane. The northbound and southbound approaches each provide a left turn lane and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Mineral Court/Southpark Terrace (#6)

The Mineral Avenue and Mineral Avenue 150 W (#7) signalized intersection operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue and permissive-only left turn phasing on the northbound and southbound approaches of Mineral Avenue 150 W. The eastbound and westbound approaches each provide a left turn lane, two through lanes, and a right turn lane. The northbound and southbound approaches each provide a left turn lane and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Mineral Avenue 150 W (#7)

The Mineral Avenue and Broadway (#8) signalized intersection operates with protected-permissive left turn phasing on all four approaches. The eastbound and westbound approaches of Mineral Avenue each provide dual left turn lanes, two through lanes, and a right turn lane. A channelized eastbound right turn with an add lane along southbound Broadway allows for free right turn movements. The northbound and southbound approaches of Broadway each provide a left turn lane, two through lanes, and a right turn lane. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Broadway (#8)

The signalized Grant Way and Broadway (#9) intersection operates with protected-permissive left turn phasing on the northbound and southbound Broadway approaches. The northbound and southbound approaches both provide a left turn lane and three through lanes with the outside through lane being a shared through/right turn lane. The eastbound and westbound approaches of Grant Way provides a left turn lane and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



Grant Way & Broadway (#9)

The unsignalized intersection of Southpark Drive and Southpark Terrace (#10) operates with all-way stop control on all four approaches. All four approaches provide a left turn lane and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



Southpark Drive & Southpark Terrace (#10)

The signalized Southpark Drive and Broadway (#11) intersection operates with protected-permissive left turn phasing on the northbound and southbound approaches of Broadway and permissive-only left turn phasing on the eastbound and westbound approaches of Southpark Drive. A left turn lane and three through lanes with the outside through lane being a shared through/right turn lane are each provided on the northbound and southbound approaches. The eastbound approach provides a left turn lane and a shared through/right turn lane while the westbound approach provides a left turn lane, a through lane, and a right turn lane. An aerial photo of the existing intersection configuration is below.



Southpark Drive & Broadway (#11)

The County Line Road and Southpark Terrace (#12) intersection is signalized that operates with permissive-only northbound and southbound left turn phasing. The eastbound and westbound approaches of County Line Road operates with protected-permissive left turn phasing. The northbound and southbound Southpark Terrace approaches provide a left turn lane and a shared through/right turn lane. The eastbound and westbound approaches each provide a left turn lane, a through lane, and a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



Southpark Terrace & Broadway (#12)

The County Line Road and Broadway (#13) intersection is signalized and operates with protected-only left turn phasing on the eastbound and westbound approaches of County Line Road and protected-only left turn phasing on the northbound and southbound approaches of Broadway. The eastbound and westbound approaches each provide a left turn lane, two through lanes, and a right turn lane. The northbound approach provides dual left turn lanes, three through lanes, and a right turn lane. The southbound approach provides dual left turn lanes and three through lanes with the outside through lane being a shared through/right turn lane. An aerial photo of the existing intersection configuration is below.



County Line Road & Broadway (#13)

The intersection of Mineral Avenue and Peninsula Drive (#18) operates with stop control on the Peninsula Drive northbound approach. The northbound approach provides a single lane for shared left and right movements. The eastbound approach of Mineral Avenue provides two through lanes while the westbound approach provides a left turn lane and two through lanes. A pedestrian signal is provided with diagonal crosswalk pavement markings connecting the High Line Canal Trail across Mineral Avenue. An aerial photo of the existing intersection configuration is below.



Mineral Avenue & Peninsula Drive (#18)

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.

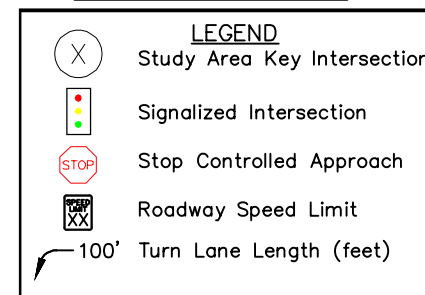
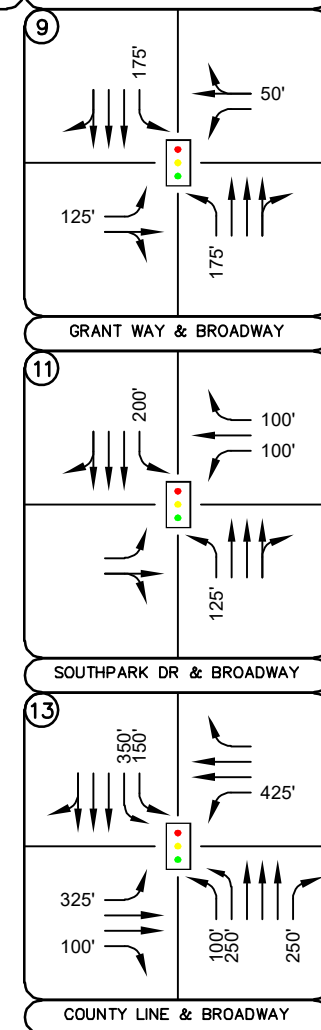
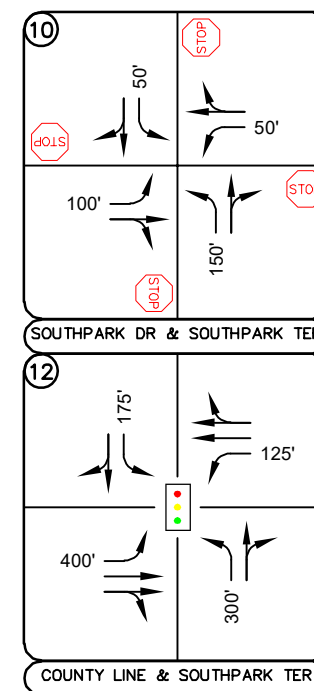
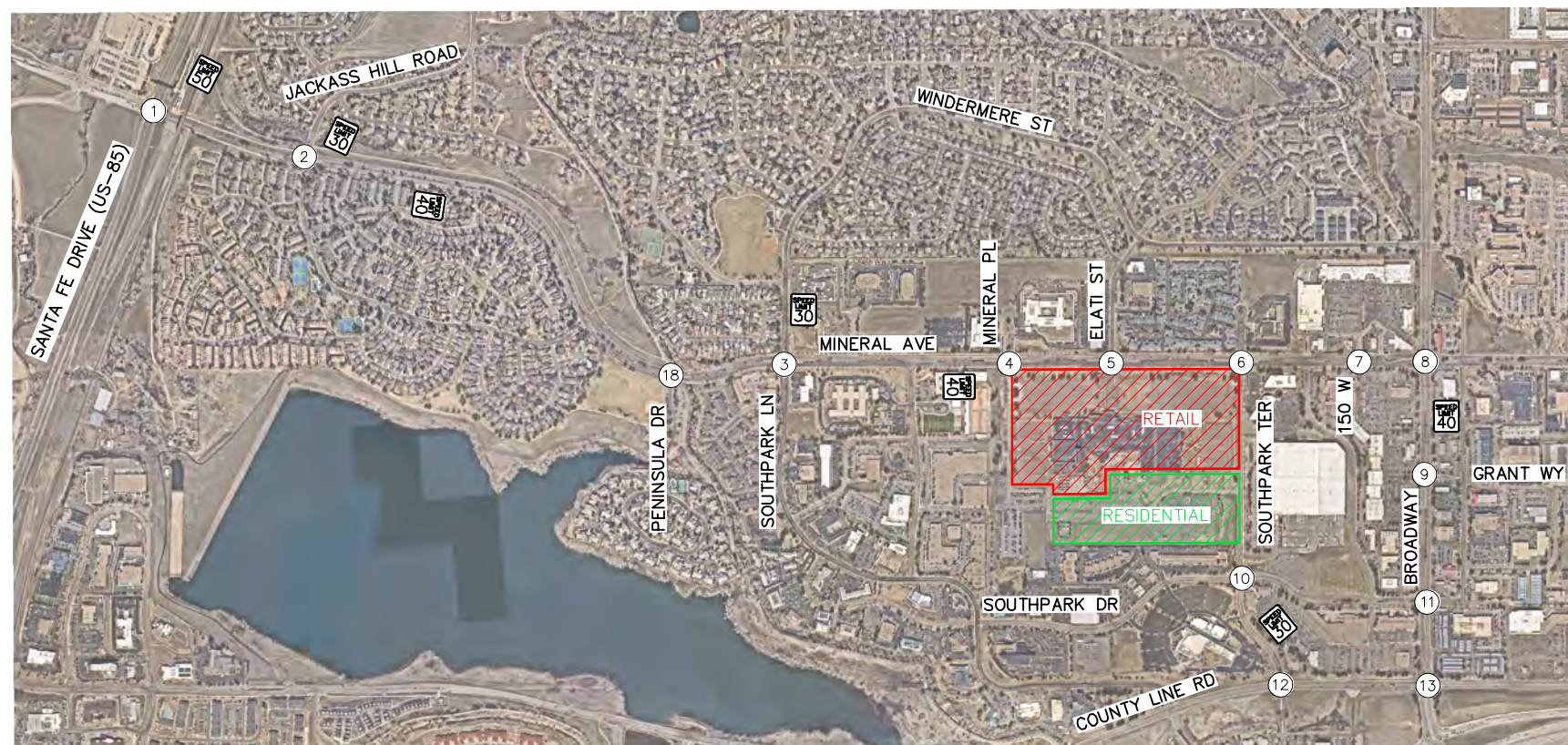
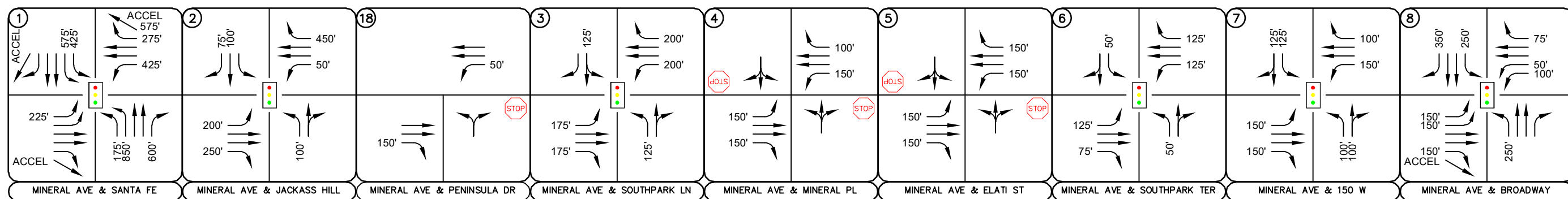


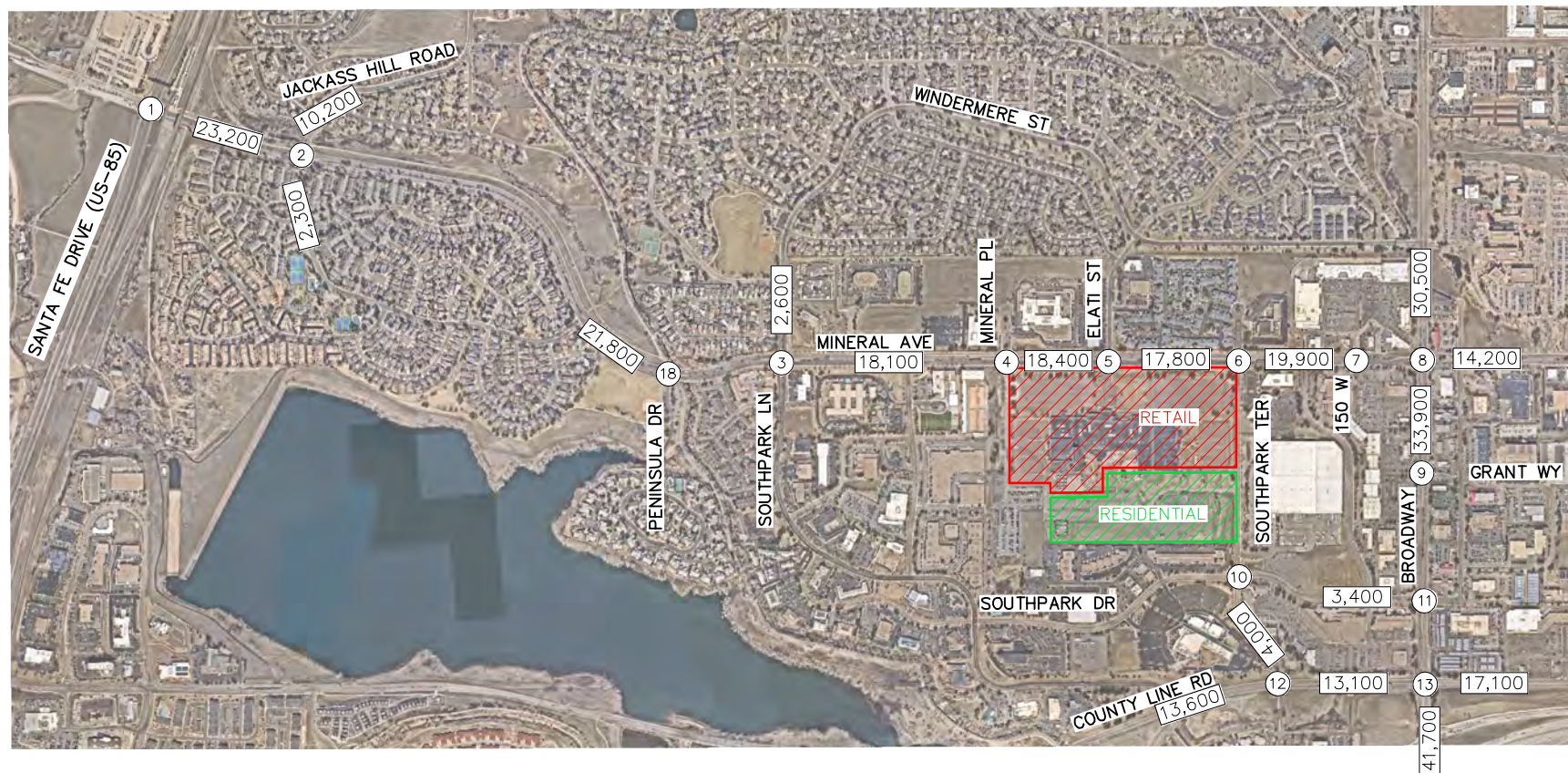
FIGURE 2
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
EXISTING GEOMETRY AND CONTROL

3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at most of the study intersections on Tuesday, July 18, 2023 during the weekday morning and afternoon peak hours at the key intersections. However, these counts were conducted while school was not in session. Therefore, turning movement counts at the intersections of Mineral Avenue/Southpark Terrace (#6) and County Line Road/Southpark Terrace (#12) were collected on September 27, 2023 during when school was in session. Additionally, the City of Littleton staff provided data for the Mineral Avenue intersections with Santa Fe Drive (US-85) (#1), Jackass Hill Road (#2), and Broadway (#8) as collected on Tuesday, April 18, 2023, when school was in session. Lastly, the intersection of Mineral Avenue and Peninsula Drive was added to the study and counts were conducted on October 31, 2023. Counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on these count dates. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

To account for school traffic, the counts collected in July were compared to the Mineral Avenue/Broadway (#8) intersection collected during the school year. Also, Jackass Hill Road was closed to traffic during the July 2023 counts due to a culvert collapse. From the count comparison, the morning peak hour April counts were 12 percent higher at the Mineral Avenue/Broadway intersection and showed no change during the afternoon peak hour. However, additional traffic counts were collected in September to provide another comparison of the July counts during the school year as requested by the City. From a comparison of intersection counts collected in September at the Mineral Avenue/Southpark Terrace (#6) and County Line Road/South Terrace (#12) intersections, traffic volumes were 12 percent higher during the morning peak hour. However, the Mineral Avenue/Southpark Terrace (#6) afternoon peak hour counts were six percent higher while the County Line Road/South Terrace (#12) afternoon peak hour counts were 13 percent higher than the July counts. Therefore, the morning peak hour counts collected during July were adjusted by a factor of 1.12 whereas the afternoon peak hour counts collected along the Mineral Avenue intersections were adjusted to a factor of 1.06, the County Line Road intersections were adjusted to a factor of 1.13, and all other intersections were adjusted to an average factor of 1.10. Of note, the April and September counts were not adjusted since both count dates coincided with school being in session. The adjusted existing traffic volumes are shown in **Figure 4**.

Tues, April 18, 2023 7:45 to 8:45AM (4:30 to 5:30PM)	Tues, April 18, 2023 7:30 to 8:30AM (4:30 to 5:30PM)	Tues, April 18, 2023 7:30 to 8:30AM (4:30 to 5:30PM)	Tues, July 18, 2023 8:00 to 9:00AM (4:30 to 5:30PM)	Tues, July 18, 2023 7:45 to 8:45AM (4:30 to 5:30PM)	Tues, July 18, 2023 8:00 to 9:00AM (4:30 to 5:30PM)	Wed, Sept 27, 2023 7:30 to 8:30AM (4:30 to 5:30PM)	Tues, July 18, 2023 8:00 to 9:00AM (4:45 to 5:45PM)	Tues, July 18, 2023 8:00 to 9:00AM (4:45 to 5:45PM)
1 120(237) 1423(1350) 315(205) 259(196) 423(775) 161(210) 207(126) 911(715) 762(665) 157(330) 1614(1268) 198(221) MINERAL AVE & SANTA FE	2 231(262) 43(71) 174(200) 209(199) 533(905) 7(16) 358(244) 850(612) 14(33) 63(40) 68(44) 14(23) MINERAL AVE & JACKASS HILL	18 709(1330) 9(23) 1106(836) 4(12) 9(5) 7(16) MINERAL AVE & PENINSULA DR	3 76(47) 24(34) 44(37) 23(36) 397(885) 50(63) 49(48) 721(594) 204(89) 108(233) 16(54) 41(72) MINERAL AVE & SOUTHPARK LN	4 2(53) 3(0) 4(40) 43(12) 542(940) 7(11) 24(4) 789(814) 2(2) 0(1) 8(0) 3(5) MINERAL AVE & MINERAL PL	5 31(95) 25(31) 52(30) 553(882) 2(0) 40(27) 767(832) 1(1) 1(0) 0(2) MINERAL AVE & ELATI ST	6 15(14) 8(2) 42(16) 12(37) 605(960) 83(82) 3(20) 871(820) 37(39) 25(57) 1(14) 27(70) MINERAL AVE & SOUTHPARK TER	7 10(30) 6(9) 54(196) 49(157) 549(764) 48(96) 10(30) 688(752) 63(85) 48(27) 9(11) 59(145) MINERAL AVE & 150 W	8 236(367) 950(1150) 92(101) 63(70) 298(464) 126(184) 257(314) 432(453) 45(106) 279(209) 1223(1047) 193(147) MINERAL AVE & BROADWAY



Tues, July 18, 2023
7:45 to 8:45AM
(5:00 to 6:00PM)

10 33(15) 44(88) 9(13) 21(115) 162(51) 7(33) 22(36) 83(138) 19(36) 47(29) 52(47) 13(14)	

SOUTHPARK DR & SOUTHPARK TER

12 32(109) 4(10) 28(97) 90(100) 381(521) 96(42) 78(81) 416(610) 28(9) 9(25) 5(6) 39(83)	

COUNTY LINE & SOUTHPARK TER

Wed, Sept 27, 2023
7:45 to 8:45AM
(4:45 to 5:45PM)

Tues, July 18, 2023
7:45 to 8:45AM
(4:45 to 5:45PM)

Tues, July 18, 2023
7:45 to 8:45AM
(4:45 to 5:45PM)

Tues, July 18, 2023
7:45 to 8:45AM
(4:45 to 5:45PM)

9 82(48) 1175(1635) 44(38) 23(60) 11(21) 42(104) 57(60) 10(10) 80(59) 121(133) 1508(1552) 25(28)	

GRANT WAY & BROADWAY

11 50(27) 1218(1751) 25(21) 28(42) 16(29) 86(175) 24(60) 6(20) 73(136) 159(71) 1592(1613) 163(128)	

SOUTHPARK DR & BROADWAY

13 113(105) 1070(1759) 188(222) 167(284) 188(351) 140(271) 114(124) 150(276) 147(296) 255(160) 1620(1378) 217(305)	

COUNTY LINE & BROADWAY

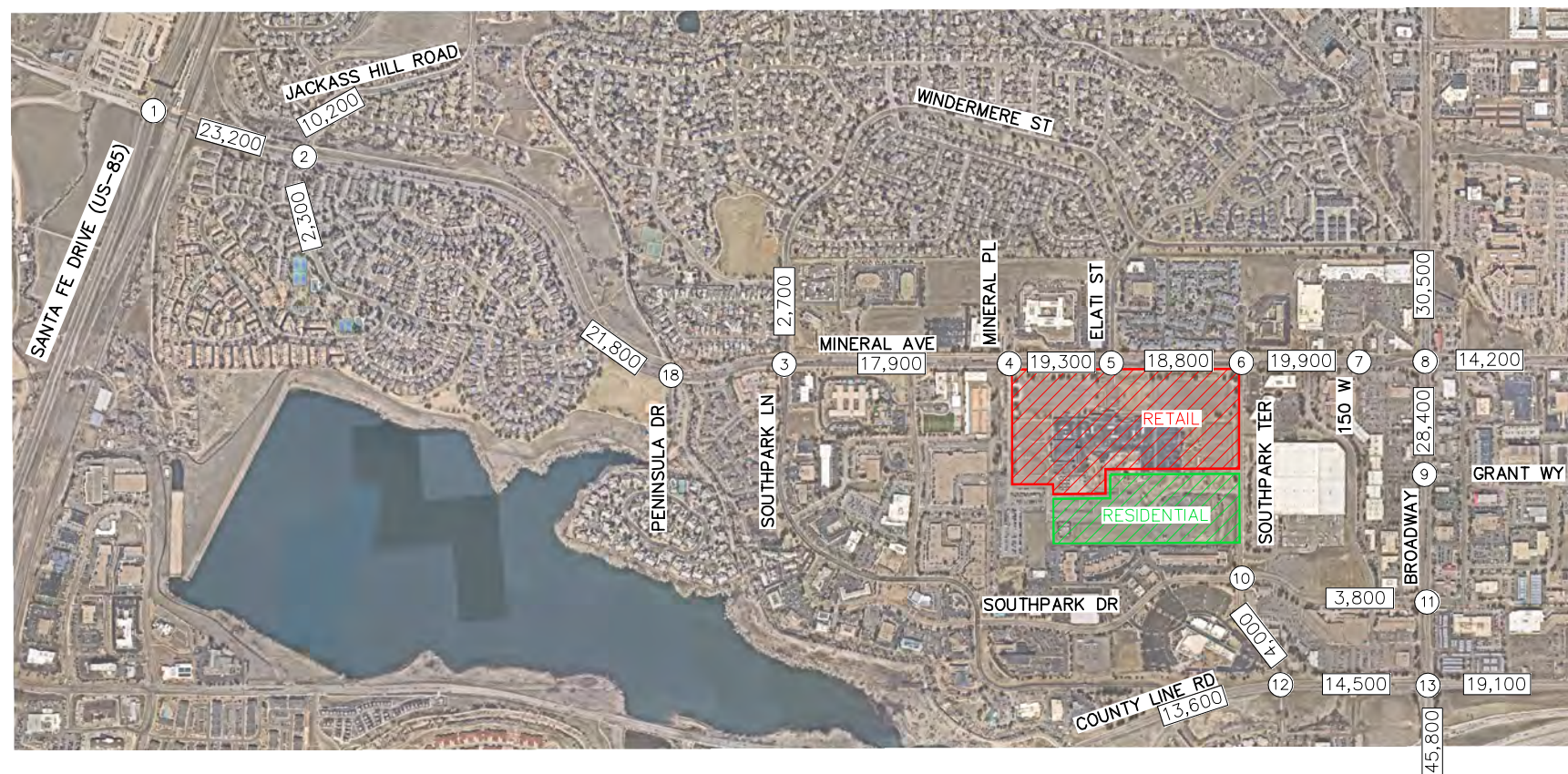


FIGURE 3
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
EXISTING TRAFFIC VOLUMES

LEGEND	
(X)	Study Area Key Intersection
xxx(xxx)	Weekday AM(PM) Peak Hour Traffic Volumes
xx,x00	Estimated Daily Traffic Volume



1	2	18	3	4	5	6	7	8
120(237) 1423(1350) 315(205) 259(196) 423(775) 161(210) 207(126) 911(715) 762(665) 157(330) 1614(1268) 198(221)	231(262) 43(71) 174(200) 209(199) 533(905) 7(16) 358(244) 850(612) 14(33) 63(40) 68(44) 14(23)	709(1330) 9(23) 1106(836) 4(12) 9(5) 7(16)	85(50) 27(36) 49(39) 26(38) 445(938) 56(67) 55(51) 808(630) 229(94) 121(247) 18(57) 46(76)	2(56) 3(0) 4(42) 48(13) 608(996) 8(12) 27(4) 884(863) 2(2) 0(1) 9(0) 3(5)	35(101) 28(33) 58(32) 620(935) 2(0) 45(29) 860(882) 1(1) 1(0) 0(2)	15(14) 8(2) 42(16) 12(37) 605(960) 83(82) 3(20) 871(820) 37(39) 25(57) 1(14) 27(70)	11(32) 7(10) 61(208) 55(166) 615(810) 54(102) 11(32) 771(797) 71(90) 54(29) 10(12) 66(154)	236(367) 950(1150) 92(101) 63(70) 298(464) 126(184) 257(314) 432(453) 45(106) 279(209) 1223(1047) 193(147)
MINERAL AVE & SANTA FE	MINERAL AVE & JACKASS HILL	MINERAL AVE & PENINSULA DR	MINERAL AVE & SOUTHPARK LN	MINERAL AVE & MINERAL PL	MINERAL AVE & ELATI ST	MINERAL AVE & SOUTHPARK TER	MINERAL AVE & 150 W	MINERAL AVE & BROADWAY



9	10	11	12	13
92(53) 1317(1790) 49(42) 26(66) 12(23) 47(114) 64(66) 11(11) 90(65) 136(146) 1690(1699) 28(31)	37(16) 49(96) 10(14) 24(126) 182(56) 8(36) 25(39) 93(151) 21(39) 53(32) 58(51) 15(15)	56(30) 1365(1917) 28(23) 31(46) 18(32) 96(192) 27(66) 7(22) 82(149) 178(78) 1785(1766) 183(140)	32(109) 4(10) 28(97) 90(100) 381(521) 96(42) 78(81) 416(610) 28(9) 9(25) 5(6) 39(83)	127(119) 1199(1988) 211(251) 187(321) 211(397) 157(306) 128(140) 168(312) 165(334) 286(181) 1816(1557) 243(345)
GRANT WAY & BROADWAY	SOUTHPARK DR & SOUTHPARK TER	SOUTHPARK DR & BROADWAY	COUNTY LINE & SOUTHPARK TER	COUNTY LINE & BROADWAY

FIGURE 4
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
ADJUSTED EXISTING TRAFFIC VOLUMES

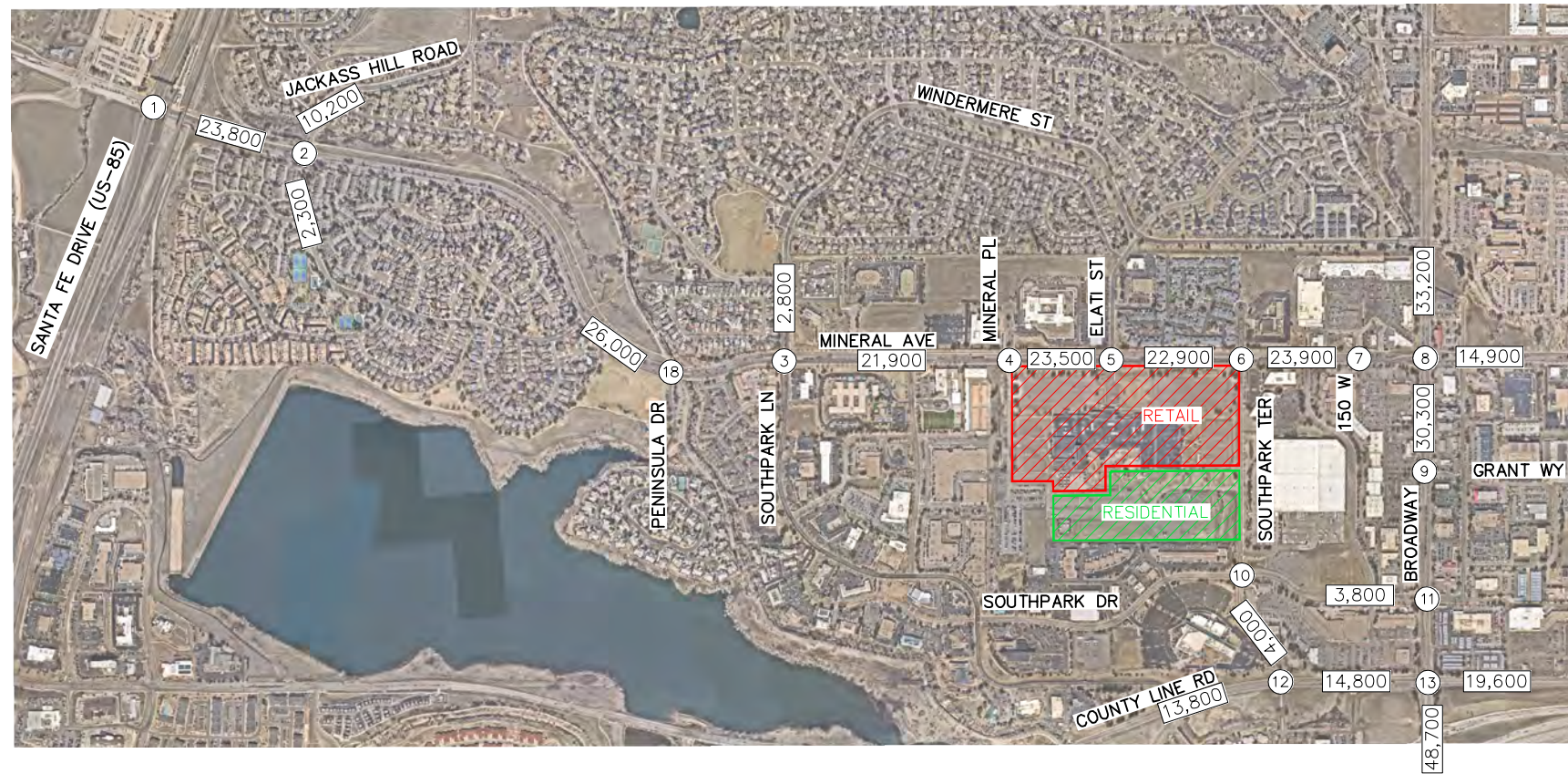
LEGEND	
(X)	Study Area Key Intersection
xxx(xxx)	Weekday AM(PM) Peak Hour Traffic Volumes
xx,x00	Estimated Daily Traffic Volume

3.4 Unspecified Development Traffic Growth

According to traffic projections from the Denver Regional Council of Governments (DRCOG) traffic model, the area surrounding the site is expected to have an average 30-year growth factor of 1.14. This growth factor equates to an annual growth rate of 0.44 percent. Future traffic volume projections and growth rate calculations are provided in **Appendix B**. Therefore, a half-percent (0.5%) annual growth rate was used to calculate future traffic volumes at the study area intersections. Of note, the annual growth rate was not applied to the north and south legs of Jackass Hill Road, Peninsula Drive, Southpark Lane/Windermere Street, Mineral Place, Elati Street, Southpark Terrace, and 150 W along Mineral Avenue. Additionally, the roadways of Southpark Drive and Southpark Terrace were not grown. These roadways were not grown due to the developments being served by the roadway is built out and a site-specific traffic study will be completed for redevelopments or new developments. The half-percent annual growth rate was used to estimate short-term 2028 and long-term 2045 traffic volume projections at the key intersections.

An O'Toole's Garden Center is proposed to be located at the northern terminus of Mineral Place near the northwest corner of the Mineral Avenue & Mineral Place intersection. The traffic assignment associated with O'Toole's Garden Center is included in the background traffic volumes. Additionally, the Littleton Adventist Hospital expansion (LEMC) and RiverPark/Santa Fe development project traffic volumes were included in the background traffic volumes. The applicable traffic impact study excerpts are also provided in **Appendix B**. The calculated background traffic volumes for 2028 and 2045 are shown in **Figure 5** and **Figure 6**, respectively.

1	2	18	3	4	5	6	7	8
123(243) 1782(1594) 266(201) 599(1010)	231(262) 43(71) 174(200) 209(199) 711(1118) 7(16)	892(1554) 9(23)	85(50) 27(36) 52(45) 28(45) 621(1152) 58(74)	6(69) 3(0) 8(57) 53(26) 788(1211) 8(12)	38(108) 28(33) 58(32) 804(1156) 2(0)	15(14) 8(2) 42(16) 12(37) 788(1181) 83(82)	11(32) 7(10) 61(208) 55(166) 799(1027) 54(102)	336(484) 974(1179) 94(104) 65(72) 323(495) 129(189)
934(733) 781(682) 1867(1429) 526(437)	358(244) 1051(777) 14(33) 63(40) 68(44) 14(23)	1314(1007) 4(12) 9(5) 7(16)	55(51) 1008(796) 229(94) 121(247) 18(57) 49(82)	32(15) 1086(1035) 2(2) 0(1) 9(0) 3(5)	47(37) 1064(1062) 1(1) 1(0) 0(2)	3(20) 1075(999) 37(39) 25(57) 1(14) 27(70)	11(32) 972(975) 71(90) 54(29) 10(12) 66(154)	366(408) 461(479) 105(159) 340(277) 1254(1073) 198(151)
MINERAL AVE & SANTA FE	MINERAL AVE & JACKASS HILL	MINERAL AVE & PENINSULA DR	MINERAL AVE & SOUTHPARK LN	MINERAL AVE & MINERAL PL	MINERAL AVE & ELATI ST	MINERAL AVE & SOUTHPARK TER	MINERAL AVE & 150 W	MINERAL AVE & BROADWAY

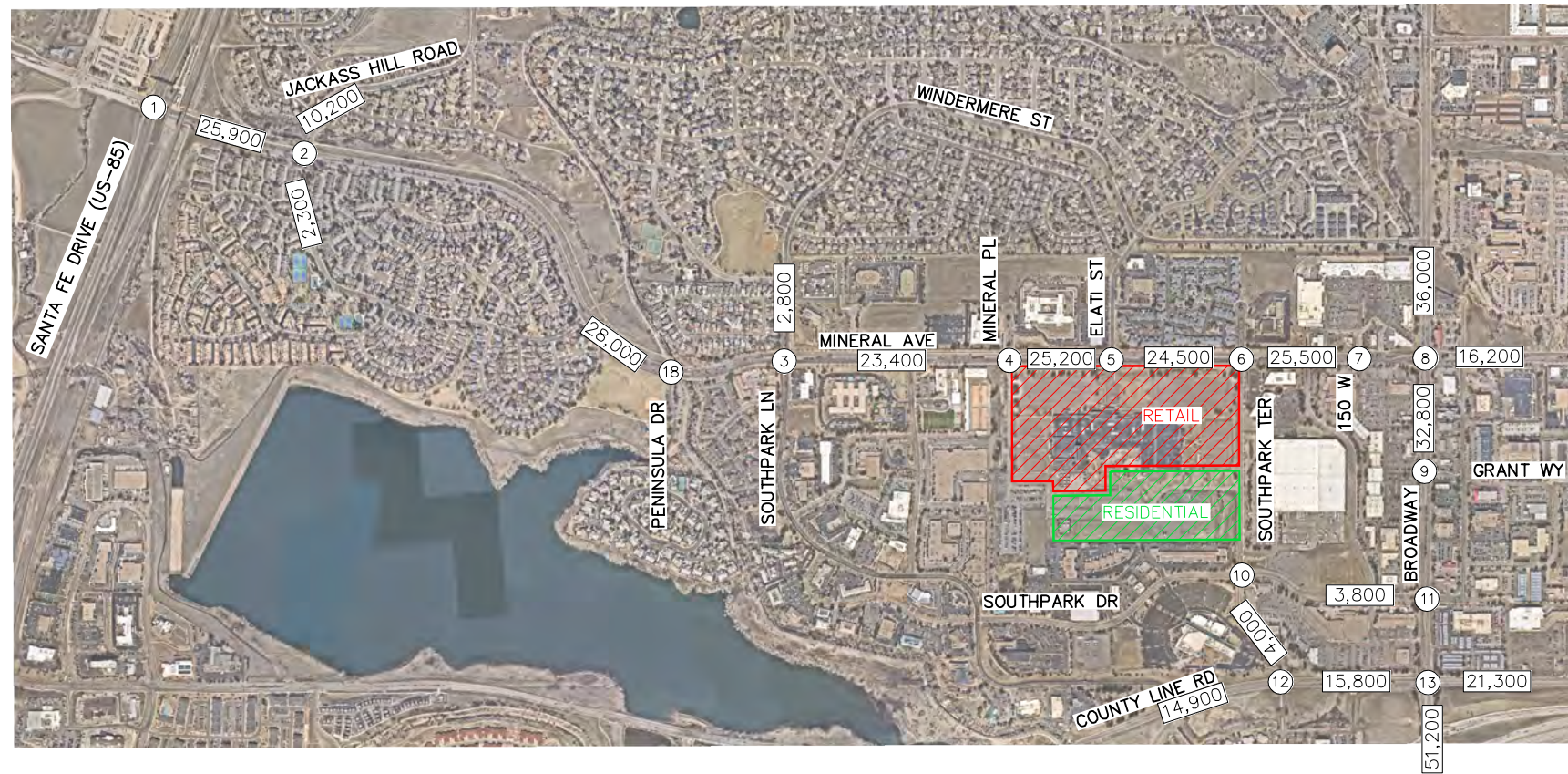


9	10	11	12	13
92(53) 1444(1943) 49(42) 26(66) 12(23) 47(114)	37(16) 49(96) 10(14) 24(126) 182(56) 8(36)	56(30) 1493(2073) 28(23) 31(46) 18(32) 96(192)	25(39) 93(151) 21(39) 53(32) 58(51) 15(15)	130(118) 1323(2083) 216(249) 192(329) 216(407) 161(314)
64(66) 11(11) 90(65) 136(146) 1787(1805) 28(31)	27(66) 7(22) 82(149) 178(78) 1884(1874) 183(140)	78(81) 427(625) 28(9) 9(25) 5(6) 39(83)	90(100) 391(534) 96(42)	131(144) 172(320) 169(342) 293(179) 1916(1610) 249(342)
GRANT WAY & BROADWAY	SOUTHPARK DR & SOUTHPARK TER	SOUTHPARK DR & BROADWAY	COUNTY LINE & SOUTHPARK TER	COUNTY LINE & BROADWAY

FIGURE 5
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
2028 BACKGROUND TRAFFIC VOLUMES

LEGEND	
(X)	Study Area Key Intersection
xxx(xxx)	Weekday AM(PM) Peak Hour Traffic Volumes
xx,x00	Estimated Daily Traffic Volume

1	2	18	3	4	5	6	7	8
134(264) 1940(1736) 289(219) 652(1099) 1017(798) 850(742) 2032(1556) 573(476)	231(262) 43(71) 174(200) 209(199) 760(1200) 7(16) 358(244) 1124(833) 14(33) 63(40) 68(44) 14(23)	956(1674) 9(23) 1409(1083) 4(12) 9(5) 7(16)	85(50) 27(36) 52(45) 28(45) 662(1237) 58(74) 55(51) 1077(853) 229(94) 121(247) 18(57) 49(82)	6(69) 3(0) 8(57) 53(26) 844(1302) 8(12) 32(15) 1162(1113) 2(2) 0(1) 9(0) 3(5)	38(108) 28(33) 58(32) 860(1240) 2(0) 47(37) 1137(1142) 1(1) 1(0) 0(2)	15(14) 8(2) 42(16) 12(37) 843(1268) 83(82) 3(20) 1149(1073) 37(39) 25(57) 1(14) 27(70)	11(32) 7(10) 61(208) 55(166) 854(1101) 54(102) 11(32) 1037(1047) 71(90) 54(29) 10(12) 66(154)	357(518) 1060(1283) 103(113) 70(78) 350(537) 141(205) 387(436) 500(521) 108(168) 365(296) 1365(1168) 215(164)
MINERAL AVE & SANTA FE	MINERAL AVE & JACKASS HILL	MINERAL AVE & PENINSULA DR	MINERAL AVE & SOUTHPARK LN	MINERAL AVE & MINERAL PL	MINERAL AVE & ELATI ST	MINERAL AVE & SOUTHPARK TER	MINERAL AVE & 150 W	MINERAL AVE & BROADWAY



9	10	11	12	13
92(53) 1564(2106) 49(42) 26(66) 12(23) 47(114) 64(66) 11(11) 90(65) 136(146) 1940(1959) 28(31)	37(16) 49(96) 10(14) 24(126) 182(56) 8(36) 25(39) 93(151) 21(39) 53(32) 58(51) 15(15)	56(30) 1617(2247) 28(23) 31(46) 18(32) 96(192) 27(66) 7(22) 82(149) 178(78) 2046(2034) 183(140)	32(109) 4(10) 28(97) 90(100) 425(581) 96(42) 78(81) 464(681) 28(9) 9(25) 5(6) 39(83)	142(128) 1432(2257) 235(271) 209(358) 235(443) 175(341) 143(156) 187(348) 184(373) 319(195) 2081(1747) 271(373)
GRANT WAY & BROADWAY	SOUTHPARK DR & SOUTHPARK TER	SOUTHPARK DR & BROADWAY	COUNTY LINE & SOUTHPARK TER	COUNTY LINE & BROADWAY

FIGURE 6
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES

LEGEND	
(X)	Study Area Key Intersection
xxx(xxx)	Weekday AM(PM) Peak Hour Traffic Volumes
xx,x00	Estimated Daily Traffic Volume

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Shopping Plaza (ITE Land Use Code 821), Home Improvement Superstore (ITE 862), Drive-in Bank (ITE 912), Fast Casual Restaurant (ITE 930), Fast-Food with Drive-Through (ITE 934), and Coffee/Donut with Drive-Through (ITE 937) and fitted curve equations that apply to Multifamily Low-Rise Housing (ITE 220) for traffic associated with the development. Of note, site specific trips are provided for the Discount Club (Costco) user. The client provided trip generation data generates more trips than the ITE 857 land use. The Costco gas station is an ancillary user to the warehouse retail building and provides another product to Costco members. Therefore, regardless of the number of fueling positions proposed at the gas station, the trip generation is based on the size of the retail building. The primary outcome of providing a larger fuel facility is not to significantly increase trips to the site, but to reduce wait times and queues to provide better service and experiences for Costco members. A technical memorandum comparing the user specific trips and the ITE use as well as more information pertaining to the Costco gas station use are provided in **Appendix C**.

Since full buildout of Mineral Avenue Redevelopment is proposed to contain a mix of uses, internal capture trips are expected to occur on site as well. These internal capture trips are shared trips from vehicles already within the internal street network. These shared trips reduce the number of total external trips and were calculated directly per the ITE procedure. Additionally, some uses proposed are commercial or retail, and so being, pass-by/diverted link trips are expected. These pass-by/diverted link trips are vehicles already on the street network that will be attracted to the project site en route to another destination. The pass-by percentages were obtained from the ITE

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

“Trip Generation Manual”, Eleventh Edition. The pass-by/diverted link percentage for Costco was estimated to be 48% during both peak hours.

Accounting for internal capture, the overall Mineral Avenue Redevelopment is expected to generate approximately 24,652 daily weekday driveway trips, with 1,422 of these trips occurring during the morning peak hour and 2,062 trips occurring during the afternoon peak hour. Accounting for pass-by, expected net new (non pass-by) trips to the surrounding street network results in approximately 14,886 weekday daily trips, of which 956 trips and 1,198 trips are anticipated during the weekday morning and afternoon peak hours, respectively.

Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User’s Guide and Handbook*, 2021. **Table 1** summarizes the estimated weekday trip generation for the Mineral Avenue Redevelopment. The trip generation worksheets are included in **Appendix C**.

Table 1 – Mineral Avenue Redevelopment Weekday Trip Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Retail Portion							
Shopping Plaza (ITE 821) 50,000 Square Feet	3,376	54	33	87	127	133	260
Discount Club (Client Provided) 161,000 Square Feet	10,552	113	101	214	559	582	1,141
Home Improvement Superstore (ITE 862) 106,000 Square Feet	3,260	91	69	160	119	124	243
Drive-In Bank (ITE 912) – 6,500 Square Feet	652	38	27	65	68	69	137
Fast Casual Restaurant (ITE 930) 4,500 Square Feet	438	3	3	6	31	25	56
High-Turnover Restaurant (ITE 932) 10,000 Square Feet	1,072	53	43	96	56	35	91
Fast-Food w DT (ITE 934) 12,000 Square Feet	5,610	273	262	535	206	190	396
Coffee/Donut Shop w DT (ITE 937) 2,500 Square Feet	1,334	110	105	215	49	49	98
Total Project Generation Trips	26,294	735	643	1,378	1,215	1,207	2,422
Total Project Trips with Internal Capture	22,204	688	596	1,284	945	937	1,882
Total Non-Passby Trips	12,438	447	372	818	512	506	1,018
Total Passby Trips	9,766	241	224	466	433	431	864
Residential Portion							
Multifamily Low-Rise Housing (ITE 220) 370 Dwelling Units	2,448	33	105	138	113	67	180
Overall Total Project Trips w Internal Capture	24,652	721	701	1,422	1,058	1,004	2,062
Overall Total Non-Passby Trips	14,886	480	476	956	625	573	1,198
Overall Total Passby Trips	9,766	241	224	466	433	431	864

Of note, this development area was occupied by a large office facility which had a staff of approximately 3,400 employees. Therefore, **Table 2** summarizes a trip generation comparison of the previous use with this number of employees to the current redevelopment plan.

Table 2 – Mineral Avenue Redevelopment Trip Generation Comparison

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Previous Use							
General Office Building (ITE 710) 3,400 Employees	7,480	1,225	167	1,392	170	830	1,000
Proposed Redevelopment Land Uses							
Shopping Plaza (ITE 821) 50,000 Square Feet	3,376	54	33	87	127	133	260
Discount Club (Client Provided) 161,000 Square Feet	10,552	113	101	214	559	582	1,141
Home Improvement Superstore (ITE 862) 106,000 Square Feet	3,260	91	69	160	119	124	243
Drive-In Bank (ITE 912) – 6,500 Square Feet	652	38	27	65	68	69	137
Fast Casual Restaurant (ITE 930) 4,500 Square Feet	438	3	3	6	31	25	56
High-Turnover Restaurant (ITE 932) 10,000 Square Feet	1,072	53	43	96	56	35	91
Fast-Food w DT (ITE 934) 12,000 Square Feet	5,610	273	262	535	206	190	396
Coffee/Donut Shop w DT (ITE 937) 2,500 Square Feet	1,334	110	105	215	49	49	98
Shopping Plaza (ITE 821) 50,000 Square Feet	2,448	33	105	138	113	67	180
Total Project Generation Trips	28,742	768	748	1,516	1,328	1,274	2,602
Net Trips After Internal Capture & Pass-By	14,886	480	476	956	625	573	1,198
Net Difference in Proposals	7,406	-745	+309	-436	+455	-257	+198
Percent Increase in Trips	+99%	-61%	+185%	-31%	+268%	-31%	+20%

As shown in the trip generation comparison table, the previous development with the large office use generated 7,480 daily trips, with 1,392 of these trips occurring during the morning peak hour and 1,000 of these trips occurring during the afternoon peak hour. Compared to the proposed redevelopment new external traffic (non-pass by), the project is anticipated to generate 7,406 more daily trips (99 percent increase), 436 fewer morning peak hour trips (31 percent decrease), and 198 more afternoon peak hour trips (20 percent increase) new to the surrounding street network than previously generated.

Additionally, a Saturday trip generation has been prepared for the proposed retail portion of the development. Since the peak hours of the generator of all these uses likely do not occur during

the same hour, this table below is conservative in the summation. Accounting for internal capture, the Saturday peak hour of the generator may generate 3,147 trips with 1,773 of these trips being net new external peak hour trips. The Saturday trip generation is summarized in **Table 3**.

Table 3 – Mineral Avenue Redevelopment Saturday Trip Generation

Land Use and Size	Daily	Peak Hour of Generator		
		In	Out	Total
Shopping Plaza (ITE 821) 50,000 Square Feet	4,054	162	149	311
Discount Club (Client Provided) 161,000 Square Feet	12,634	883	883	1,766
Home Improvement Superstore (ITE 862) 106,000 Square Feet	5,906	236	227	463
Drive-In Bank (ITE 912) – 6,500 Square Feet	562	87	84	171
Fast Casual Restaurant (ITE 930) 4,500 Square Feet	-	61	58	119
High-Turnover Restaurant (ITE 932) 10,000 Square Feet	-	179	147	326
Fast-Food w DT (ITE 934) 12,000 Square Feet	7,393	338	325	663
Coffee/Donut Shop w DT (ITE 937) 2,500 Square Feet	-	110	110	220
Multifamily Low-Rise Housing (ITE 220) 370 Dwelling Units	1,684	79	73	152
Total Project Generation Trips	-	2,135	2,056	4,191
Total Trips with Internal Capture	-	1,613	1,534	3,147
Total Non-Pass-By trips	-	910	863	1,773
Total Pass-By Trips	-	703	671	1,374

4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic, employment, school, and attraction information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. Since the commercial development will have non-pass-by and pass-by trips, separate trip distributions were prepared. The external retail non-pass-by trip distribution is illustrated in **Figure 7** while the morning and afternoon peak hour external retail pass-by/diverted link trip distributions are shown in **Figure 8** and **Figure 9**, respectively. The external residential trip distribution is illustrated in **Figure 10**. The trip distribution for the Costco, other retail uses, and the residential use at each intersection is shown in the calculation figures included in **Appendix D**.

4.3 Traffic Assignment

Mineral Avenue Redevelopment traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. The retail non-pass-by traffic assignment is shown in **Figure 11** while the retail pass-by/diverted link traffic assignment is illustrated in **Figure 12**. The residential traffic assignment is shown in **Figure 13**.

4.4 Total (Background Plus Project) Traffic

Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2028 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2028 and 2045 horizon years in **Figures 14** and **15**, respectively.

LEGEND

 Study Area Key Intersection

 Project Access Intersection

 External Trip Distribution Percentage



FIGURE 8
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
EXTERNAL RETAIL AM PASS-BY
/DIVERTED LINK PROJECT TRIP DISTRIBUTION

LEGEND	
(X)	Study Area Key Intersection
(X)	Project Access Intersection
XX%	External Trip Distribution Percentage



FIGURE 9
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
EXTERNAL RETAIL PM PASS-BY
/DIVERTED LINK PROJECT TRIP DISTRIBUTION

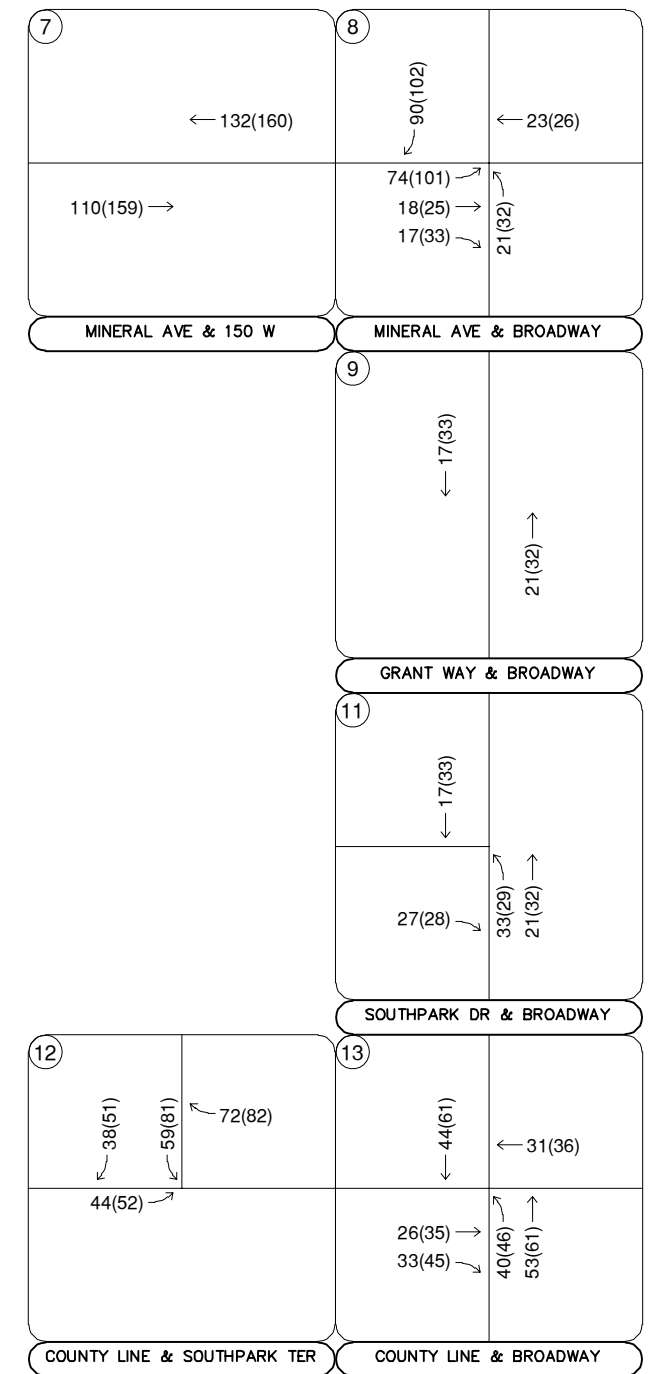
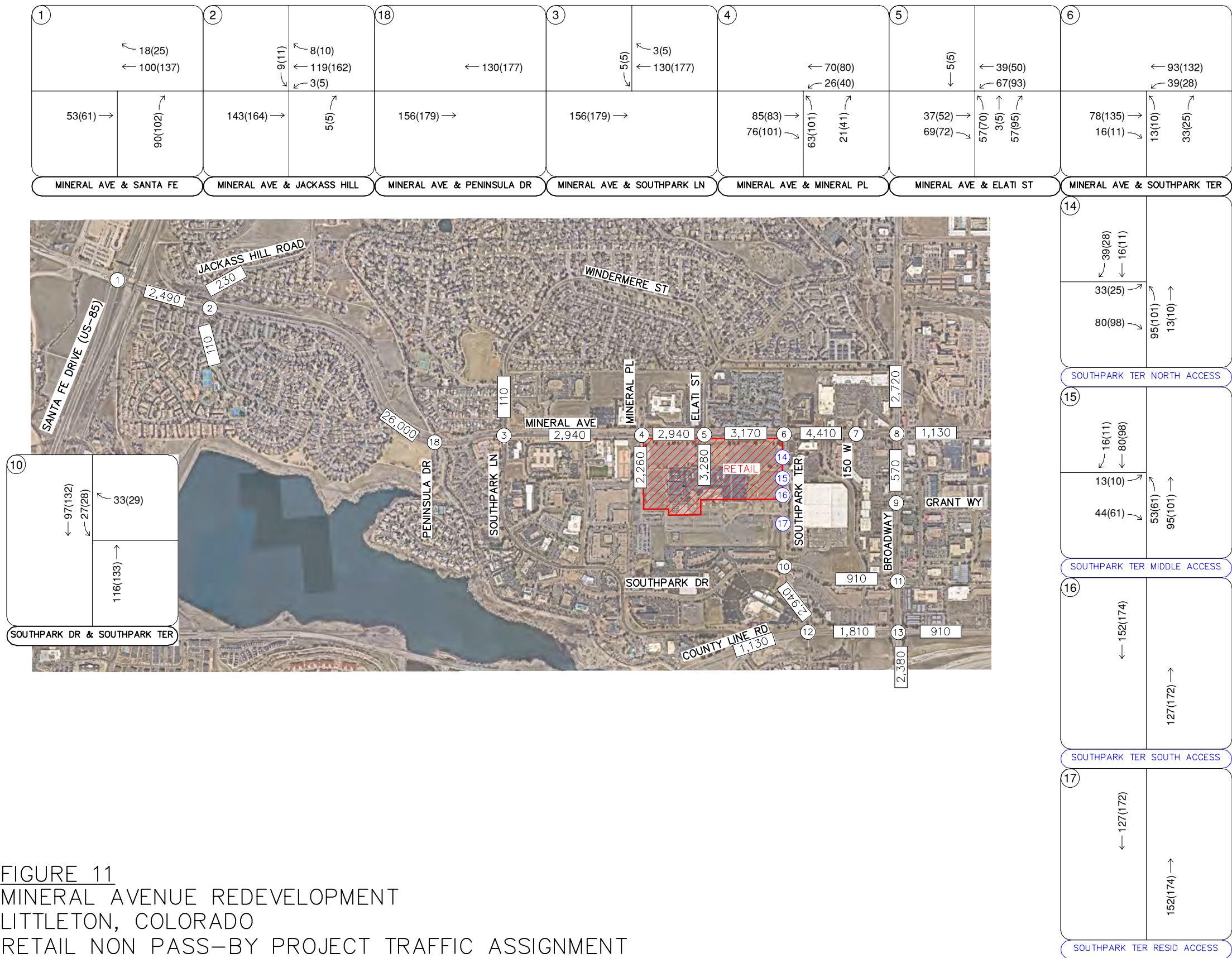
LEGEND	
(X)	Study Area Key Intersection
(X)	Project Access Intersection
XX%	External Trip Distribution Percentage

LEGEND

 Study Area Key Intersection

 Project Access Intersection

 External Trip Distribution Percentage



LEGEND

(X) Study Area Key Intersection

(X) Project Access Intersection

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

XX,X00 Estimated Daily Traffic Volume

FIGURE 11
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RETAIL NON PASS-BY PROJECT TRAFFIC ASSIGNMENT

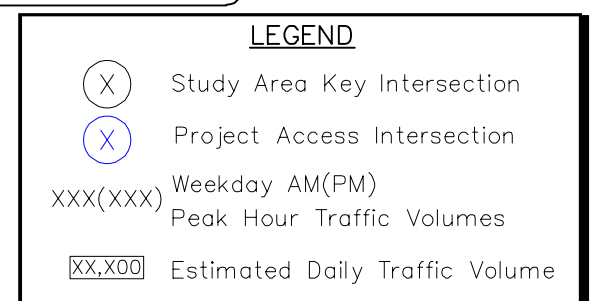
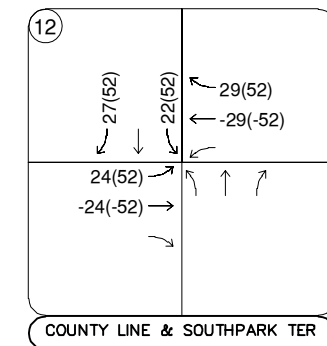
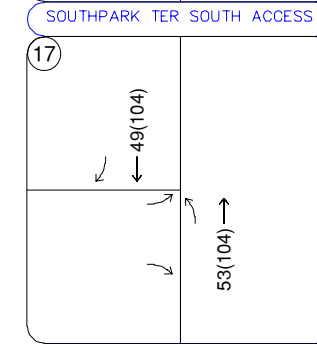
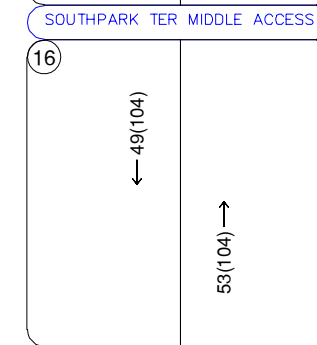
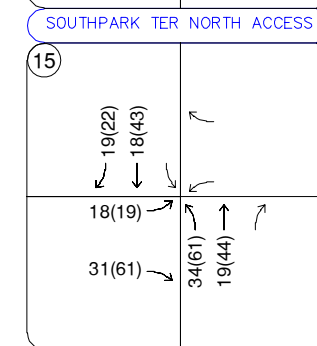
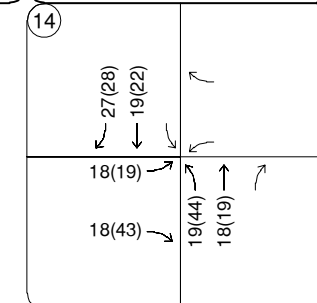
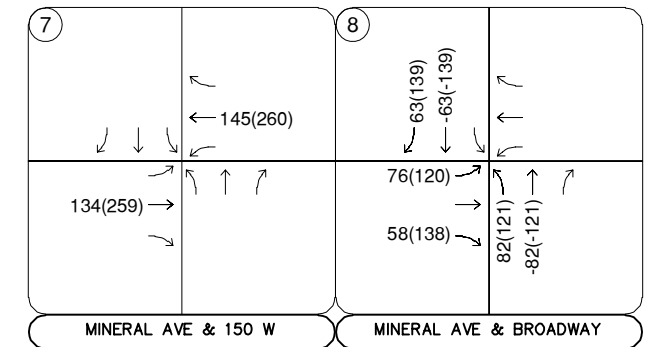
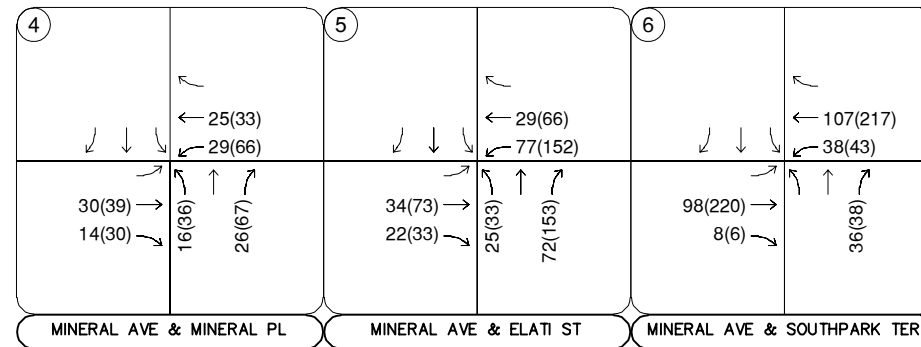
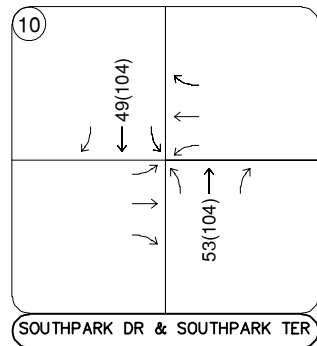
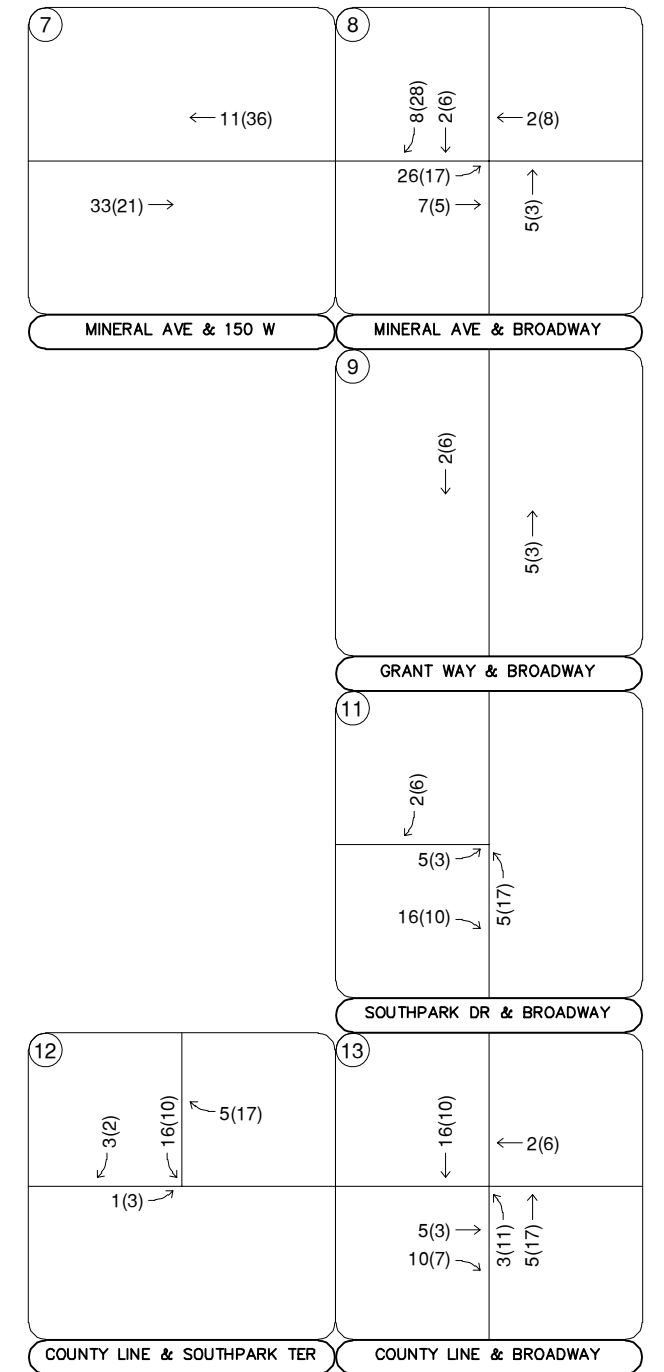


FIGURE 12
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RETAIL PASS-BY/DIVERTED LINK PROJECT TRAFFIC ASSIGNMENT

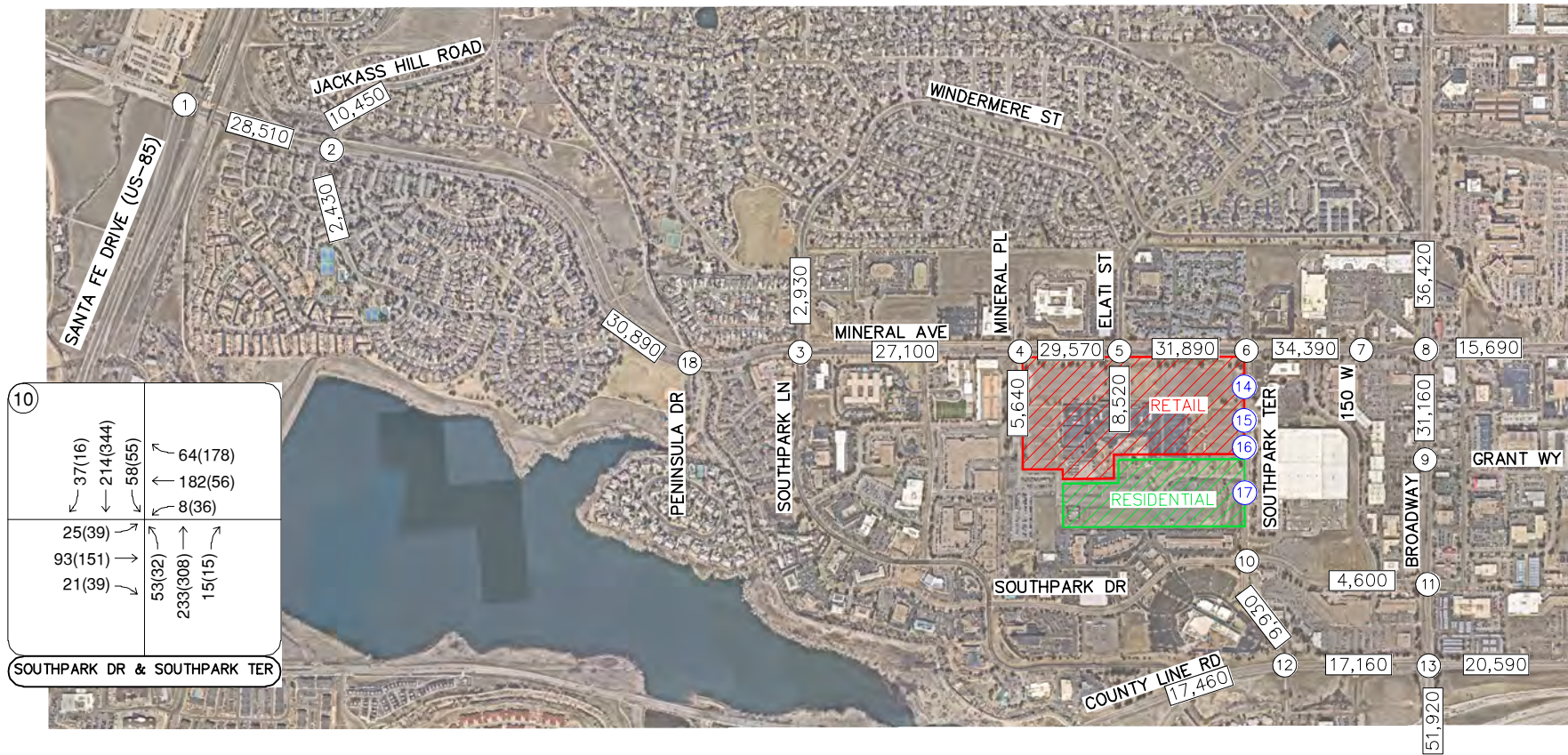


LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 13
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RESIDENTIAL PROJECT TRAFFIC ASSIGNMENT

1	2	18	3	4	5	6
123(243) 1782(1594) 305(239) 709(1154)	231(262) 43(71) 183(211) 217(209) 861(1300) 10(21)	1053(1751) 9(23)	85(50) 27(36) 57(50) 31(50) 782(1349) 58(74)	6(69) 3(0) 8(57) 53(26) 914(1344) 63(118)	38(108) 5(5) 28(33) 58(32) 898(1289) 148(251)	15(14) 8(2) 42(16) 12(37) 990(1536) 169(184)
989(800) 781(682) 1867(1429) 624(567)	358(244) 1204(975) 14(33) 63(40) 68(44) 19(28)	1480(1220) 4(12) 9(5) 7(16)	55(51) 1174(1009) 229(94) 121(247) 18(57) 49(82)	32(15) 1211(1191) 92(133) 79(138) 9(0) 50(113)	47(37) 1143(1215) 94(112) 88(106) 3(5) 134(253)	3(20) 1256(1357) 69(84) 64(84) 1(14) 124(151)
MINERAL AVE & SANTA FE	MINERAL AVE & JACKASS HILL	MINERAL AVE & PENINSULA DR	MINERAL AVE & SOUTHPARK LN	MINERAL AVE & MINERAL PL	MINERAL AVE & ELATI ST	MINERAL AVE & SOUTHPARK TER



10
37(16) 214(344) 58(55) 64(178) 182(56) 8(36)
25(39) 93(151) 21(39) 53(32) 233(308) 15(15)
SOUTHPARK DR & SOUTHPARK TER

7	8
11(32) 7(10) 61(208) 55(166) 1087(1483) 54(102)	497(753) 913(1046) 94(104) 65(72) 348(529) 129(189)
11(32) 1249(1414) 71(90) 54(29) 10(12) 66(154)	542(646) 486(509) 180(330) 443(430) 1177(955) 198(151)
MINERAL AVE & 150 W	MINERAL AVE & BROADWAY

14
66(56) 157(213) 23(2) 2(22) 2(16)
51(44) 98(141) 114(145) 136(183) 17(2)
SOUTHPARK TER NORTH ACCESS

15
35(33) 182(334) 40(3) 3(38) 3(22)
31(29) 75(122) 87(122) 233(263) 23(3)
SOUTHPARK TER MIDDLE ACCESS

16
285(471)
299(394)
SOUTHPARK TER SOUTH ACCESS

17
17(59) 243(410)
54(35) 40(25) 13(43) 270(361)
SOUTHPARK TER RESID ACCESS

9
92(53) 1463(1982) 49(42) 26(66) 12(23) 47(114)
64(66) 11(11) 90(65) 136(146) 1813(1840) 28(31)
GRANT WAY & BROADWAY

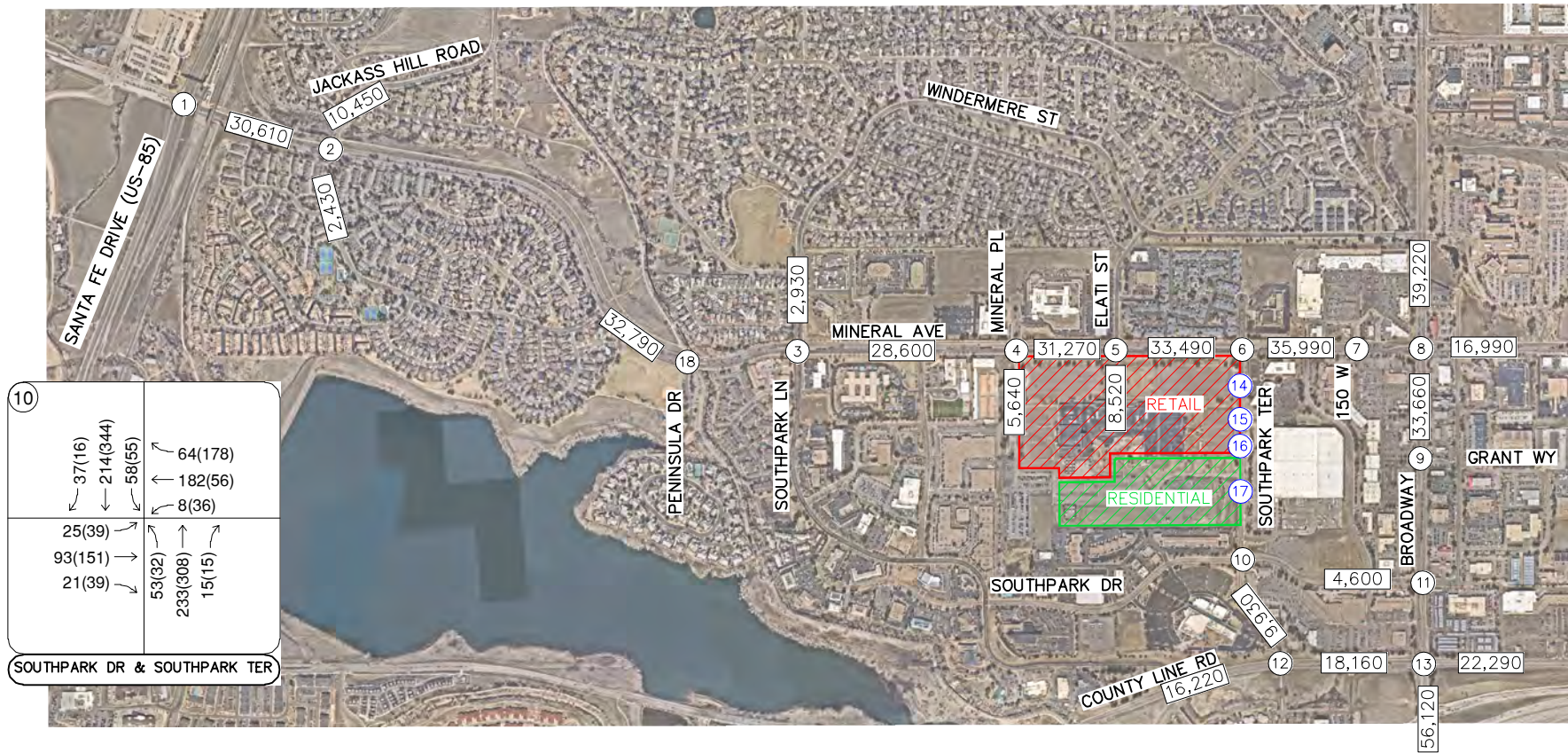
11
58(36) 1510(2106) 28(23) 31(46) 18(32) 96(192)
32(69) 7(22) 125(187) 216(124) 1905(1906) 183(140)
SOUTHPARK DR & BROADWAY

12	13
100(214) 4(10) 125(240) 196(251) 362(482) 96(42)	130(118) 1383(2154) 216(249) 192(329) 249(449) 161(314)
147(188) 403(573) 28(9) 9(25) 5(6) 39(83)	131(144) 203(358) 212(394) 336(236) 1974(1688) 249(342)
COUNTY LINE & SOUTHPARK TER	COUNTY LINE & BROADWAY

LEGEND	
(X)	Study Area Key Intersection
(X)	Project Access Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

FIGURE 14
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
2028 TOTAL TRAFFIC VOLUMES

1	2	18	3	4	5	6
134(264) 1940(1736) 328(257) 762(1243) 1072(865) 850(742) 2032(1556) 671(606)	231(262) 43(71) 183(211) 217(209) 910(1382) 10(21) 358(244) 1277(1031) 14(33) 63(40) 68(44) 19(28)	1117(1871) 9(23) 1575(1296) 4(12) 9(5) 7(16)	85(50) 27(36) 57(50) 31(50) 823(1434) 58(74) 55(51) 1243(1066) 229(94) 121(247) 18(57) 49(82)	6(69) 3(0) 8(57) 53(26) 970(1435) 63(118) 32(15) 1287(1269) 92(133) 79(138) 9(0) 50(113)	38(108) 5(5) 28(33) 58(32) 954(1373) 148(251) 47(37) 1216(1295) 94(112) 88(106) 3(5) 134(253)	15(14) 8(2) 42(16) 12(37) 1045(1623) 169(184) 3(20) 1330(1431) 69(84) 64(84) 1(14) 124(151)
MINERAL AVE & SANTA FE	MINERAL AVE & JACKASS HILL	MINERAL AVE & PENINSULA DR	MINERAL AVE & SOUTHPARK LN	MINERAL AVE & MINERAL PL	MINERAL AVE & ELATI ST	MINERAL AVE & SOUTHPARK TER



10
37(16) 214(344) 58(55) 64(178) 182(56) 8(36)
25(39) 93(151) 21(39) 53(32) 233(308) 15(15)
SOUTHPARK DR & SOUTHPARK TER

14
66(56) 155(213) 25(2) 2(23) 2(18)
51(44) 98(141) 114(145) 136(182) 19(2)
SOUTHPARK TER NORTH ACCESS

15
35(33) 176(336) 44(3) 3(41) 3(23)
31(29) 75(122) 87(122) 235(259) 25(3)
SOUTHPARK TER MIDDLE ACCESS

16
279(473) 301(390)
SOUTHPARK TER SOUTH ACCESS

17
17(59) 237(412) 54(35) 40(25)
13(43) 272(357)
SOUTHPARK TER RESID ACCESS

7	8
11(32) 7(10) 61(208) 55(166) 1142(1557) 54(102)	518(787) 999(1150) 103(113) 70(78) 375(571) 141(205)
11(32) 1314(1486) 71(90) 54(29) 10(12) 66(154)	563(674) 525(551) 183(339) 468(449) 1288(1050) 215(164)
MINERAL AVE & 150 W	MINERAL AVE & BROADWAY

9
92(53) 1583(2145) 49(42) 26(66) 12(23) 47(114)
64(66) 11(11) 90(65) 136(146) 1966(1994) 28(31)
GRANT WAY & BROADWAY

11
58(36) 1634(2280) 28(23) 31(46) 18(32) 96(192)
32(69) 7(22) 125(187) 216(124) 2067(2066) 183(140)
SOUTHPARK DR & BROADWAY

12	13
100(214) 4(10) 125(240) 196(251) 396(529) 96(42)	142(128) 1492(2328) 235(271) 209(358) 268(485) 175(341)
147(188) 440(629) 28(9) 9(25) 5(6) 39(83)	143(156) 218(386) 227(425) 362(252) 2139(1825) 271(373)
COUNTY LINE & SOUTHPARK TER	COUNTY LINE & BROADWAY

LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XXX(XXX) Weekday AM(PM)
- Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 15
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
2045 TOTAL TRAFFIC VOLUMES

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2028 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 4** shows the definition of level of service for signalized and unsignalized intersections.

Table 4 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the whole intersection. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix E**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the analysis. The signalized intersection analysis utilizes the observed cycle lengths with optimized phasing and timing. Based on increased national attention given to establishing appropriate yellow and all-red clearance intervals to improve intersection safety, these have been calculated and are applied for approaches at the signalized intersections. The increase in yellow and all red time sacrifices intersection capacity for improved safety. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

Mineral Avenue and Santa Fe Drive (US-85) (#1)

The signalized intersection of Mineral Avenue and Santa Fe Drive (US-85) (#1) operates with protected-only left turn phasing on all four approaches. The intersection currently operates with LOS F during the morning peak hour and LOS E during the afternoon peak hour. However, it is understood that there are planned improvements underway that would eliminate left turning traffic at this intersection by providing adjacent quadrant signalized intersections for left turns. The quadrant roadway system will allow all left turning movements to occur outside of the intersection and allow more green time to Santa Fe Drive (US-85) and Mineral Avenue with this intersection operating as a two-phase signal. This intersection improvement is planned to start construction in 2024 and be completed by 2026. With these improvements, the intersection is expected to operate at an acceptable level of service C during the weekday peak hours with or without the addition of project traffic throughout the 2045 horizon. **Table 5** provides the results of the LOS analysis conducted at this intersection.

Table 5 – Mineral Avenue and Santa Fe Drive (US-85) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	82.7	F	66.5	E
2028 Background #	26.9	C	26.7	C
2028 Background Plus Project #	28.6	C	28.6	C
2045 Background #	29.3	C	27.8	C
2045 Background Plus Project #	31.1	C	29.8	C

Improved Quadrant System with Left Turn Removed (Two Phase Signal)

Mineral Avenue and Jackass Hill Road/Long Avenue (#2)

The signalized intersection of Mineral Avenue and Jackass Hill Road/Long Avenue (#2) operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue and permissive-only left turn phasing on the northbound Long Avenue approach and southbound Jackass Hill Road approach. The intersection operates acceptably at LOS C during both peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating with a LOS C throughout the 2045 horizon. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 6** provides the results of the LOS analysis conducted at this intersection.

Table 6 – Mineral Avenue and Jackass Hill Road/Long Avenue LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	21.7	C	22.3	C
2028 Background	22.5	C	22.8	C
2028 Background Plus Project	24.5	C	24.5	C
2045 Background	22.8	C	23.0	C
2045 Background Plus Project	25.2	C	25.6	C

Mineral Avenue and Windermere Street/Southpark Lane (#3)

The intersection of Mineral Avenue and Windermere Street/Southpark Lane (#3) is signalized and operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue. The northbound Southpark Lane and southbound Windermere Street approaches operate with split phasing. Under existing conditions, the intersection operates with LOS C during both morning and afternoon peak hours. With the addition of project traffic, the intersection is anticipated to continue operating acceptably through the long-term 2045 horizon. However, it was identified that there is a queuing issue for the northbound left turn based on existing conditions. It was found that removing the split phasing for the intersection would provide the most overall benefit. If the City desires, the raised medians within the north and south legs of Southpark Lane could be removed to designate a southbound left turn lane and dual northbound left turn lanes. The southbound left turn is recommended to operate with protected-permissive phasing while the dual northbound left turns are recommended to operate with project-only phasing. Therefore, the City may want to explore removing the landscaped islands within the north and south legs to improve queueing and remove the split phasing on the northbound and southbound approaches. **Table 7** provides the results of the LOS analysis conducted at this intersection.

Table 7 – Mineral Avenue and Windermere Street/Southpark Lane LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	19.9	B	26.1	C
2028 Background	20.7	C	28.7	C
2028 Background Plus Project	25.9	C	39.4	D
2028 Background Plus Project #	15.0	B	27.6	C
2045 Background	22.3	C	29.2	C
2045 Background Plus Project	26.4	C	42.0	D
2045 Background Plus Project #	15.2	B	28.7	C

= Dual NB Left Turn Lanes and SB Left Turn Phase with Split Phase Removal

Mineral Avenue and Mineral Place (#4)

The unsignalized intersection of Mineral Avenue and Mineral Place (#4) operates with stop control on the northbound and southbound approaches of Mineral Place. The intersection movements operate acceptably at LOS B or better during both peak hours under existing conditions. With project traffic, the south leg will be used to provide access to Mineral Avenue Redevelopment and the Discount Club. As such with this traffic volume increase, a traffic signal warrant analysis was completed, as it is believed a traffic signal will be needed for all movements to operate acceptably at this intersection. All four hours of the MUTCD Four Hour Signal Warrant Analysis are anticipated to be met with project traffic. The signal warrant analysis worksheet is included in **Appendix G**. Therefore, the Mineral Avenue and Mineral Place intersection is recommended to be signalized with the development. The eastbound and westbound left turn movements are recommended to operate with protected-permissive left turn phasing. A separate northbound left turn lane is recommended. The northbound and southbound approaches can operate acceptably permissive only due to the southbound approach containing just a single lane for shared left turn, through, and right turn movements. With signalization, the intersection is anticipated to operate acceptably at LOS A during both weekday peak hours. **Table 8** provides the results of the LOS analysis conducted at this intersection.

Table 8 – Mineral Avenue and Mineral Place LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing				
Northbound Approach	13.5	B	10.5	B
Eastbound Left	7.8	A	8.5	A
Westbound Left	8.2	A	8.3	A
Southbound Approach	12.3	B	13.2	B
2028 Background				
Northbound Approach	16.5	C	11.6	B
Eastbound Left	8.2	A	9.2	A
Westbound Left	7.8	A	8.7	A
Southbound Approach	13.7	B	17.8	C
2028 Background Plus Project #	7.1	A	7.0	A
2045 Background				
Northbound Approach	17.3	C	12.3	B
Eastbound Left	8.4	A	9.7	A
Westbound Left	9.0	A	9.0	A
Southbound Approach	14.3	B	20.1	C
2045 Background Plus Project #	3.8	A	6.7	A

= Signalized with separate left turn lane on the northbound approach

Mineral Avenue and Elati Street (#5)

The Mineral Avenue and Elati Street (#5) unsignalized intersection operates with stop control on the northbound and southbound approaches of Elati Street. Under existing conditions, the intersection movements operate acceptably at LOS B or better during both peak hours. With project traffic, the south leg will be used to provide access to the Discount Club. As such with this traffic volume increase, a traffic signal warrant analysis was completed, as it is believed a traffic signal will be needed for all movements to operate acceptably at this intersection. All four hours of the MUTCD Four Hour Signal Warrant Analysis are anticipated to be met with project traffic. The signal warrant analysis worksheet is included in **Appendix G**. Therefore, the intersection of Mineral Avenue and Elati Street is recommended to be signalized with the development. The eastbound and westbound left turn movements are recommended to operate with protected-permissive left turn phasing. The northbound and southbound approaches can operate permissive-only. A separate northbound left turn lane is recommended at this intersection to improve the efficiency for traffic exiting the development. With signalization, the intersection is anticipated to operate with LOS A during the morning peak hour and LOS B during the afternoon peak hour. **Table 9** provides the results of the LOS analysis conducted at this intersection.

Table 9 – Mineral Avenue and Elati Street LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing				
Northbound Approach	11.6	B	9.9	A
Eastbound Left	8.0	A	8.5	A
Westbound Left	8.2	A	0.0	A
Southbound Approach	10.6	B	12.3	B
2028 Background				
Northbound Approach	13.8	B	10.7	B
Eastbound Left	8.4	A	9.1	A
Westbound Left	8.7	A	0.0	A
Southbound Approach	12.2	B	15.2	C
2028 Background Plus Project #	6.8	A	14.7	B
2045 Background				
Northbound Approach	14.9	C	11.0	B
Eastbound Left	8.4	A	9.6	A
Westbound Left	9.0	A	0.0	A
Southbound Approach	12.9	B	17.2	C
2045 Background Plus Project #	6.6	A	16.5	B

= Signalized with separate left turn lane on the northbound approach

Mineral Avenue and Mineral Court/Southpark Terrace (#6)

The signalized intersection of Mineral Avenue and Mineral Court/Southpark Terrace (#6) operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue and permissive-only left turn phasing on the northbound Southpark Terrace approach and southbound Mineral Court approach. The intersection operates at LOS A during the morning and afternoon peak hours under existing conditions. With project traffic, the intersection is anticipated to continue operating at LOS A throughout the 2045 horizon. Of note, the future traffic conditions can sometimes report less delays than the existing condition when background and project traffic assignment volumes are added to movements that have less delay than the average intersection delay. Additionally, since Mineral Avenue signals are coordinated the platoon ratio may improve to provide better coordination. Based on the queueing analysis in the subsequent section, the westbound left turn lane may need to be extended. The extension of this turn lane does not affect the operations of the intersection. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 10** provides the results of the LOS analysis conducted at this intersection.

Table 10 – Mineral Avenue and Mineral Court/Southpark Terrace LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	7.0	A	7.5	A
2028 Background	6.6	A	7.1	A
2028 Background Plus Project	5.7	A	6.5	A
2045 Background	7.0	A	7.0	A
2045 Background Plus Project	5.8	A	6.5	A

Mineral Avenue and Mineral Avenue 150 W (#7)

The Mineral Avenue and Mineral Avenue 150 W (#7) signalized intersection operates with protected-permissive left turn phasing on the eastbound and westbound approaches of Mineral Avenue and permissive-only left turn phasing on the northbound and southbound approaches of Mineral Avenue 150 W. The intersection currently operates with LOS B during the morning peak hour and LOS C during the afternoon peak hour under existing conditions. The addition of project traffic is anticipated to continue LOS C or better operations through the 2045 horizon. Therefore, no improvements are anticipated to be needed at this intersection with or without project traffic. Of note, the total traffic condition can sometimes report less delays than the background condition when traffic assignment volumes are added to movement that have less movement delay than the average intersection delay (volume added to movements experiencing less delay than the average, bringing down the overall average). Additionally, since Mineral Avenue signals are coordinated the platoon ratio may increase to provide better coordination. **Table 11** provides the results of the LOS analysis conducted at this intersection.

Table 11 – Mineral Avenue and Mineral Avenue 150 W (#7) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	8.9	A	21.3	C
2028 Background	8.3	A	22.9	C
2028 Background Plus Project	13.2	B	20.9	C
2045 Background	15.1	B	23.1	C
2045 Background Plus Project	8.7	A	22.2	C

Mineral Avenue and Broadway (#8)

The Mineral Avenue and Broadway (#8) signalized intersection operates with protected-permissive left turn phasing on all four approaches. The intersection currently operates with LOS C during the morning and afternoon peak hours. With project traffic, the intersection may operate with LOS F during the weekday afternoon peak hour. To improve traffic operations, dual northbound left turn lanes will be needed. To accommodate the dual left turn lanes while maintaining the existing northbound Broadway bus stop location, the southbound through lanes will shift to the west, requiring the existing curb, gutter, and sidewalk on the west side of Broadway to be reconstructed. Additionally, new signal poles/mast arms will likely be needed on the northwest and northeast corners. The volumes support this as lane balancing will improve. With this, the right turn lane will be absorbed by the outside through lane. The dual left turn lanes are recommended to operate with protected-only lag phasing. Additionally, the southbound right turn movement is recommended to operate with overlap right turn phasing. With these improvements, the intersection is anticipated to operate with LOS D during both weekday peak hours with project traffic. The conceptual exhibit of **Figure 17** is provided to illustrate how dual northbound left turn lanes can be accommodated at the intersection. **Table 12** provides the results of the LOS analysis conducted at this intersection.

Table 12 – Mineral Avenue and Broadway (#8) LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	28.9	C	32.0	C
2028 Background	32.3	C	43.5	D
2028 Background Plus Project	46.3	D	95.1	F
2028 Background Plus Project #	39.4	D	45.9	D
2045 Background	39.5	D	51.5	D
2045 Background Plus Project	52.0	D	108.4	F
2045 Background Plus Project #	41.5	D	52.2	D

= Dual NB Left Turn Lanes (Shifted Southbound Through Lanes to the West)

Grant Way and Broadway (#9)

The signalized Grant Way and Broadway (#9) intersection operates with protected-permissive left turn phasing on the northbound and southbound Broadway approaches. The intersection operates acceptably at LOS A during both peak hours under existing conditions. With project traffic, the intersection is anticipated to continue to operate at LOS A through the long-term 2045 horizon. Therefore, no improvements are recommended to this intersection. Of note, the total traffic condition can sometimes report less delays than the background condition when traffic assignment volumes are added to movement that have less movement delay than the average intersection delay (volume added to movements experiencing less delay than the average, bringing down the overall average). **Table 13** provides the results of the LOS analysis conducted at this intersection.

Table 13 – Grant Way and Broadway LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	4.5	A	5.1	A
2028 Background	5.1	A	5.1	A
2028 Background Plus Project	5.1	A	5.1	A
2045 Background	5.5	A	6.0	A
2045 Background Plus Project	7.8	A	4.8	A

Southpark Drive and Southpark Terrace (#10)

The unsignalized intersection of Southpark Drive and Southpark Terrace (#10) operates with all-way stop control on all four approaches. The overall intersection and movements operate at LOS B or better during both peak hours under existing conditions. With project traffic, the intersection is expected to operate with long delays in the afternoon peak hour. Therefore, the intersection is recommended to have a control improvement to either be converted to a single-lane mini roundabout or to a traffic signal, if warranted. A single lane mini roundabout is an acceptable recommendation in order to improve capacity at the intersection, provide traffic calming, and accommodate heavy vehicles by having a fully traversable center island and splitter islands. As a single-lane mini roundabout, the intersection is anticipated to operate with LOS A during both peak hours through the long-term horizon. Recent traffic counts were collected at this intersection for 12-hours for the signal warrant analysis on Thursday, February 1, 2024. These counts are included in **Appendix A**. It was found that the volumes only warrant three of the needed four hours of the MUTCD Four Hour Signal Warrant criteria. This intersection could be monitored in the future if a signal is desired to determine if warranted once traffic patterns have been determined by the project traffic. With signalization, the intersection is anticipated to operate with LOS B through the long-term horizon. As requested by the City, the intersection as analyzed with two-way stop control. With two-way stop control the eastbound and westbound movements operate with LOS F. **Table 14** provides the results of the LOS analysis conducted at this intersection.

Table 14 – Southpark Drive and Southpark Terrace LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	9.3	A	9.9	B
Eastbound Approach	8.9	A	10.4	B
Westbound Approach	9.9	A	9.6	A
Northbound Approach	9.0	A	9.5	A
Southbound Approach	8.7	A	10.0	A
2028 Background	9.7	A	10.4	B
Eastbound Approach	9.2	A	10.9	B
Westbound Approach	10.5	B	10.2	B
Northbound Approach	9.3	A	9.8	A
Southbound Approach	9.1	A	10.4	B
2028 Background Plus Project	14.6	B	39.4	E
Eastbound Approach	11.9	B	20.6	C
Westbound Approach	15.8	C	23.1	C
Northbound Approach	14.8	B	44.3	E
Southbound Approach	14.6	B	56.3	F
2028 Background Plus Project #	6.3	A	8.2	A
2028 Background Plus Project \$	18.3	B	19.2	B
2028 Background Plus Project				
Northbound Left	7.9	A	8.3	A
Eastbound Left	50.9	F	86.2	F
Eastbound Through/Right	21.4	C	74.7	F
Westbound Left	24.0	C	206.9	F
Westbound Through/Right	40.4	E	25.2	D
Southbound Left	7.9	A	8.2	A
2045 Background	9.7	A	10.4	B
Eastbound Approach	9.2	A	10.9	B
Westbound Approach	10.5	B	10.2	B
Northbound Approach	9.3	A	9.8	A
Southbound Approach	9.1	A	10.4	B
2045 Background Plus Project	14.6	B	39.4	E
Eastbound Approach	11.9	B	20.6	C
Westbound Approach	15.8	C	23.1	C
Northbound Approach	14.8	B	44.3	E
Southbound Approach	14.6	B	56.3	F
2045 Background Plus Project #	6.3	A	8.2	A
2045 Background Plus Project \$	18.3	B	19.2	B
2045 Background Plus Project				
Northbound Left	7.9	A	8.3	A
Eastbound Left	50.9	F	86.2	F
Eastbound Through/Right	21.4	C	74.7	F
Westbound Left	24.0	C	206.9	F
Westbound Through/Right	40.4	E	25.2	D
Southbound Left	7.9	A	8.2	A

= Single-Lane Mini Roundabout

\$ = Convert to a Signalized Intersection

Two-Way Stop Control -Stop Control EB and EB Approaches

Southpark Drive and Broadway (#11)

The signalized Southpark Drive and Broadway (#11) intersection operates with protected-permissive left turn phasing on the northbound and southbound approaches of Broadway and permissive-only left turn phasing on the eastbound and westbound approaches of Southpark Drive. The intersection currently operates at LOS A during the morning and afternoon peak hours and is anticipated to continue operating at LOS A with or without project traffic. Therefore, no improvements or modifications are anticipated to be needed at this intersection based on the addition of project traffic and this operational level of service analysis. **Table 15** provides the results of the LOS analysis conducted at this intersection.

Table 15 – Southpark Drive and Broadway LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	4.3	A	6.5	A
2028 Background	4.3	A	7.0	A
2028 Background Plus Project	4.9	A	8.0	A
2045 Background	4.5	A	7.1	A
2045 Background Plus Project	6.8	A	8.6	A

County Line Road and Southpark Terrace (#12)

The County Line Road and Southpark Terrace (#12) intersection is signalized that operates with protected-permissive eastbound and westbound left turn phasing and with permissive-only northbound and southbound left turn phasing. The overall intersection operates at LOS B during the morning and afternoon peak hours. With the addition of project traffic, the intersection is planned to continue operating acceptably at LOS B during the morning peak hour and LOS C during the afternoon peak hour through 2045. Of note, the future traffic conditions can sometimes report less delays than the existing condition when background traffic and project traffic assignment volumes are added to movements that have less delay than the average intersection delay. **Table 16** provides the results of the LOS analysis conducted at this intersection.

Table 16 – County Line Road and Southpark Terrace LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	11.7	B	19.5	B
2028 Background	11.6	B	19.4	B
2028 Background Plus Project	17.9	B	26.9	C
2045 Background	11.5	B	19.1	B
2045 Background Plus Project	17.6	B	26.9	C

County Line Road and Broadway (#13)

The County Line Road and Broadway (#13) intersection is signalized and operates with protected-only left turn phasing on the eastbound and westbound approaches of County Line Road and protected-only left turn phasing on the northbound and southbound approaches of Broadway. The intersection operates at LOS C during the morning peak hour and LOS D during the afternoon peak hour under existing conditions. With project traffic, the intersection is anticipated to continue operating acceptably during the morning peak hour but at LOS E during the afternoon peak hour in the short-term 2028 horizon. Due to this, the eastbound and westbound right turn lanes are recommended to operate with overlap phasing. With this recommendation, the morning and afternoon peak hours are anticipated to operate with LOS D during both peak hours. Of note, if 2045 traffic volumes are realized, then the afternoon peak hour may operate with LOS E during the afternoon peak hour. Therefore, further improvements may be needed to mitigate the eastbound and westbound delays in the long-term if future projected traffic volumes are realized. **Table 17** provides the results of the LOS analysis conducted at this intersection.

Table 17 – County Line Road and Broadway LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing	30.4	C	39.9	D
2028 Background	35.4	D	51.9	D
2028 Background Plus Project	39.2	D	63.6	E
2028 Background Plus Project #	37.1	D	46.5	D
2045 Background	36.2	D	66.4	E
2045 Background Plus Project	39.6	D	81.0	F
2045 Background Plus Project #	40.2	D	60.4	E

= EB and WB Right Turn Overlap Phasing

Mineral Avenue and Peninsula Drive (#18)

The intersection of Mineral Avenue and Peninsula Drive (#18) operates with stop control on the Peninsula Drive northbound approach. The intersection movements operate at LOS C or better during the morning peak hour and LOS B during the afternoon peak hour under existing conditions. With project traffic, the intersection is anticipated to continue operating acceptably at LOS D or better during the studied peak hours. Therefore, no improvements are anticipated to be needed at this intersection; however, if desired, the City could consider constructing a westbound acceleration lane within the median of Mineral Avenue to allow for two stage northbound left turns (High T configuration). This would not impact the pedestrian crosswalk through the intersection. **Table 18** provides the results of the LOS analysis conducted at this intersection.

Table 18 – Mineral Avenue and Peninsula Drive LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing				
Northbound Left	19.5	C	13.1	B
Eastbound Approach	11.9	B	10.2	B
2028 Background				
Westbound Left	24.8	C	15.7	C
Northbound Approach	13.6	B	11.1	B
2028 Background Plus Project				
Westbound Left	26.5	D	17.4	C
Northbound Approach	14.2	B	12.4	B
2045 Background				
Westbound Left	27.2	D	15.9	C
Northbound Approach	14.5	B	11.6	B
2045 Background Plus Project				
Westbound Left	33.7	D	19.7	C
Northbound Approach	16.3	C	13.4	B

Project Accesses

With completion of the Mineral Avenue Redevelopment project, four (4) accesses are proposed along Southpark Terrace, the three northernmost accesses will serve the retail area while the southernmost access will be the primary access for the residential area. These four accesses are planned to provide full turning movements into and out of the site. The northbound left turn movement will be accommodated within the existing two-way left turn center lane. Southbound right turn lanes are warranted at the north access (#14), middle access (#15), and residential access (#16). Of note, the south retail access along Southpark Terrace (#16) will serve the delivery vehicles. Minimal truck traffic will utilize this access during the morning and afternoon peak hours. It is recommended that R1-1 "STOP" signs be installed on the eastbound approaches at all four accesses, exiting the development. **Table 19** provides the results of the level of service for the proposed project accesses. As shown in the table, the project access intersections along Southpark Terrace are anticipated to have all movements operating with acceptable LOS B or better during the peak hours in both the buildout year 2028 and the 2045 long-term horizons.

Table 19 – Project Access Level of Service Results

Intersection	2028 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Southpark Ter North Access (#14)								
Northbound Left	8.0	A	8.2	A	8.0	A	8.2	A
Eastbound Approach	12.4	B	13.4	B	12.4	B	13.4	B
Westbound Approach	12.1	B	13.6	B	12.1	B	13.8	B
Southbound Left	7.6	A	7.6	A	7.6	A	7.6	A
Southpark Ter Middle Access (#15)								
Northbound Left	7.9	A	8.5	A	7.9	A	8.5	A
Eastbound Approach	12.0	B	14.2	B	12.0	B	14.2	B
Westbound Approach	12.6	B	14.8	B	12.6	B	14.8	B
Southbound Left	7.9	A	7.8	A	7.9	A	7.8	A
Southpark Ter South Access (#16)								
Northbound Left	0.0	A	0.0	A	0.0	A	0.0	A
Eastbound Approach	0.0	A	0.0	A	0.0	A	0.0	A
Southpark Ter Residential (#17)								
Northbound Left	7.8	A	8.6	A	7.8	A	8.6	A
Eastbound Approach	11.8	B	13.8	B	11.8	B	13.7	B

5.3 CDOT Turn Bay Length Analysis

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the east leg of Mineral Avenue at US-85 (Santa Fe Drive) is not anticipated to increase existing access traffic volumes by more than 20 percent, with a maximum expected increase at 16 percent during the afternoon peak hour on the east leg (379 / 2,322). Therefore, a CDOT access permit is not anticipated to be required in association with this project.

5.4 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections containing defined storage bays. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 20** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and **Appendix F** for signalized intersections.

Table 20 – Turn Lane Queuing Analysis Results

Intersection Turn Lane	Existing Turn Lane Length	2028 Background Calculated Queue	2028 Total Calculated Queue	2028 Rec Length	2045 Background Calculated Queue	2045 Calculated Queue	2045 Rec Length	Project Trips Added?
Mineral & Santa Fe (#1)								
Eastbound Right	C	0'	0' Free	C	0'	0' Free	C	N
Westbound Right	275'	0'	0' Free	275'	0'	0' Free	275'	Y
Northbound Right	600'	455'	598'	850'	542'	686'	850'	Y
Southbound Right	C	0'	0' Free	500'	0'	0' Free	500'	N
Mineral & Jackass Hill (#2)								
Eastbound Left	200'	211'	270'	300'	227'	292'	300'	N
Eastbound Right	250'	0'	0'	250'	0'	0'	250'	N
Westbound Left	50'	10'	9'	50'	10'	6'	50'	Y
Westbound Right	450'	140'	150'	450'	139'	79'	450'	Y
Northbound Left	100'	85'	87'	100'	86'	87'	100'	N
Southbound Left	C	230'	266'	C	222'	284'	C	Y
Southbound Right	75'	67'	110'	75'	65'	131'	75'	N
Mineral & Southpark Ln (#3)								
N/S Split Phasing								
Eastbound Left	175'	37'	58'	175'	32'	36'	175'	N
Eastbound Right	175'	152'	192'	175'	32'	129'	175'	N
Westbound Left	200'	77'	71'	200'	43'	67'	200'	N
Westbound Right	200'	8'	6'	200'	8'	4'	200'	Y
Northbound Left	125'	341'	365'	125'	353'	400'	125'	N
Southbound Right	125'	17'	17'	125'	17'	17'	125'	N
Mineral & Southpark Ln (#3)								
N/S Left Turn Lanes								
Eastbound Left	175'	Not Studied	21'	175'	Not Studied	23'	175'	N
Eastbound Right	175'		147'	175'		5'	175'	N
Westbound Left	200'		52'	200'		51'	200'	N
Westbound Right	200'		0'	200'		1'	200'	Y
Northbound Left	125'		161'	150' DL		173'	150' DL	N
Southbound Left	DNE		80'	125'		80'	125'	Y
Southbound Right	125'		18'	125'		18'	125'	N

Intersection Turn Lane	Existing Turn Lane Length	2028 Background Calculated Queue	2028 Total Calculated Queue	2028 Rec Length	2045 Background Calculated Queue	2045 Calculated Queue	2045 Rec Length	Project Trips Added?
Mineral & Mineral PI (#4)								
Eastbound Left	150'	25'	9'	150'	25'	10'	150'	N
Eastbound Right	150'	25'	51'	150'	25'	61'	150'	Y
Westbound Left	150'	25'	48'	150'	25'	67'	150'	Y
Westbound Right	100'	25'	1'	100'	25'	8'	100'	N
Northbound Left	DNE	-	201'	200'	-	180'	200'	Y
Mineral & Elati St (#5)								
Eastbound Left	150'	25'	24'	150'	25'	20'	150'	N
Eastbound Right	150'	25'	39'	150'	25'	31'	150'	Y
Westbound Left	150'	25'	256'	325'	25'	268'	325'	Y
Westbound Right	150'	25'	17'	150'	25'	23'	150'	N
Northbound Left	DNE	-	145'	200'	-	159'	200'	Y
Mineral & Southpark Ter (#6)								
Eastbound Left	125'	7'	7'	125'	3'	5'	125'	N
Eastbound Right	75'	19'	8'	75'	13'	3'	75'	Y
Westbound Left	125'	10'	151'	150'	13'	142'	150'	Y
Westbound Right	125'	0'	1'	125'	0'	0'	125'	N
Northbound Left	50'	88'	117'	125'	88'	117'	125'	Y
Southbound Left	50'	71'	71'	50'	71'	71'	50'	N
Mineral & 150 W (#7)								
Eastbound Left	150'	16'	19'	150'	16'	21'	150'	N
Eastbound Right	150'	8'	29'	150'	14'	34'	150'	N
Westbound Left	150'	28'	16'	150'	28'	14'	150'	N
Westbound Right	100'	58'	25'	100'	53'	23'	100'	N
Northbound Left	100'	84'	84'	100'	84'	84'	100'	N
Southbound Left	125'	234'	302'	125'	231'	318'	125'	N

Intersection Turn Lane	Existing Turn Lane Length	2028 Background Calculated Queue	2028 Total Calculated Queue	2028 Rec Length	2045 Background Calculated Queue	2045 Calculated Queue	2045 Rec Length	Project Trips Added?
Mineral & Broadway (#8)		<i>Existing</i>	<i>Improved</i>		<i>Existing</i>	<i>Improved</i>		
Eastbound Left	150' DL	257' DL	326' DL	225'/250'	270' DL	376' DL	225'/250'	Y
Eastbound Right	150'	0'	0'	150'	0'	0'	150'	Y
Westbound Left	100'/50'	92'	78' DL	100'/50'	96'	85' DL	100'/50'	N
Westbound Right	75'	0'	0'	75'	0'	0'	75'	N
Northbound Left	250'	370'	308' DL	325' DL	418'	314' DL	325' DL	Y
Northbound Right	C	84'	111'	C	74'	146'	C	N
Southbound Left	250'	59'	126'	250'	80'	149'	250'	N
Southbound Right	350'	330'	505'	500'	377'	711'	725'	Y
Grant Wy & Broadway (#9)								
Eastbound Left	125'	95'	95'	125'	95'	95'	125'	N
Westbound Left	C	147'	149'	C	145'	149'	C	N
Northbound Left	175'	153'	146'	175'	146'	136'	175'	N
Southbound Left	175'	10'	17'	175'	17'	18'	175'	N
Southpark Dr & Southpark Ter (#10) <i>Signalized</i>								
Eastbound Left	100'	Not Studied	40'	100'	Not Studied	40'	100'	N
Westbound Left	50'		37'	50'		37'	50'	N
Northbound Left	150'		44'	150'		44'	150'	N
Southbound Left	50'		47'	50'		47'	50'	Y
Southpark Dr & Broadway (#11)								
Eastbound Left	C	80'	82'	C	80'	84'	C	N
Westbound Left	100'	243'	270'	100'	243'	282'	100'	N
Westbound Right	100'	10'	10'	100'	10'	10'	100'	N
Northbound Left	125'	131'	167'	175'	128'	169'	175'	Y
Southbound Left	200'	16'	15'	200'	23'	16'	200'	N
County Line & Southpark Ter (#12)								
Eastbound Left	400'	42'	105'	400'	40'	102'	400'	Y
Westbound Left	125'	16'	18'	125'	17'	16'	125'	N
Northbound Left	175'	41'	38'	175'	42'	38'	175'	N
Southbound Left	125'	114'	247'	250'	116'	250'	250'	Y

Intersection Turn Lane	Existing Turn Lane Length	2028 Background Calculated Queue	2028 Total Calculated Queue	2028 Rec Length	2045 Background Calculated Queue	2045 Calculated Queue	2045 Rec Length	Project Trips Added?
County Line & Broadway (#13)		<i>Existing</i>	<i>Improved</i>		<i>Existing</i>	<i>Improved</i>		
Eastbound Left	325'	158'	148'	325'	179'	179'	325'	N
Eastbound Right	100'	248'	362'	C	375'	465'	C	Y
Westbound Left	425'	363'	416'	425'	430'	483'	425'	N
Westbound Right	C	221'	260'	C	347'	298'	C	N
Northbound Left	100'/225'	150' DL	184' DL	175'/250'	178' DL	213' DL	175'/250'	Y
Northbound Right	250'	139'	184'	250'	202'	225'	250'	N
Southbound Left	150'/350'	150' DL	140' DL	150'/325'	164' DL	161' DL	150'/325'	N
Mineral & Peninsula (#18)								
Westbound Left	50'	25'	25'	50'	25'	25'	50'	N
Southpark Ter North (#14)								
Northbound Left	TWLTL	Not Studied	25'	75'	Not Studied	25'	75'	Y
Southbound Left	TWLTL	Not Studied	25'	50'	Not Studied	25'	50'	N
Southpark Ter Middle (#15)								
Northbound Left	TWLTL	Not Studied	25'	100'	Not Studied	25'	100'	Y
Southbound Left	TWLTL	Not Studied	25'	75'	Not Studied	25'	75'	N
Southpark Ter South (#16)								
Northbound Left	TWLTL	Not Studied	25'	150'	Not Studied	25'	150'	Y
Southpark Ter Resident (#17)								
Northbound Left	TWLTL	Not Studied	25'	50'	Not Studied	25'	50'	Y

DNE = Does Not Exist; C = Continuous; TWLTL = Two-Way Left Turn Lane; **Red** Text = Turn Lane Length Constraint; **Blue** Text = Recommendation; *Existing/Improved* = Denoted Existing Conditions and Improved Conditions
 Shaded Blue = Alternative Analysis



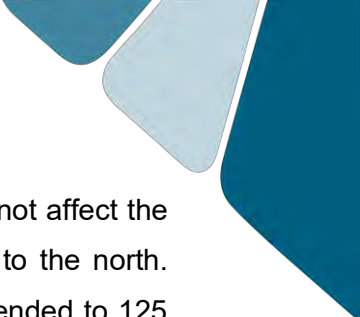
As part of the improvements being constructed at Mineral Avenue and Santa Fe Drive (#1), a 850-foot northbound right turn lane and a 500-foot southbound left turn lane are planned. These turn lane lengths will accommodate the future projected vehicle queues through 2045.

At the Mineral Avenue and Jackass Hill Road (#2) intersection, the existing 200-foot eastbound left turn lane is recommended to be extended to 300 feet. Of note, the project does not contribute to this movement. It is believed that this left turn lane extension is feasible by reconstructing the raised median along Mineral Avenue to accommodate the extra 100 feet of turn lane length.

The existing 125-foot northbound left along Southpark Lane at Mineral Avenue (#3) has a vehicle queue exceeding its length. This left turn lane cannot be feasibly extended without blocking the northbound through lane. Of note, the project does not contribute to this movement. However, the north/south approaches operate with split phasing. It was found that removing the split phasing for the intersection would provide the most overall benefit. If the City desires, the raised medians within the north and south legs of Southpark Lane could be removed to designate a 125-foot southbound left turn lane and 150-foot dual northbound left turn lanes. The southbound left turn is recommended to operate with protected-permissive phasing while the dual northbound left turns are recommended to operate with projected-only phasing. Therefore, the City may want to explore improving the north and south legs by removing the raised median islands to construct designate these turn lanes to improve queueing and remove the split phasing on the northbound and southbound approaches.

Northbound left turn lanes are recommended to be provided at the Mineral Place (#4) and Elati Street (#5) intersections along Mineral Avenue. The northbound approaches at both intersections are recommended to include separate 200-foot left turn lanes and shared through/right turn lanes. Additionally, the westbound left turn lane at Elati Street (#5) along Mineral Avenue is recommended to be extended from 150 feet to 325 feet, which can be accommodated within the existing 20-foot wide median.

The existing 125-foot westbound left turn lane along Mineral Avenue at Southpark Terrace (#6) is recommended to be extended by 25 feet to provide a length of 150 feet with the addition of project traffic. Extending this turn lane an additional 25 feet will require reconstructing the raised median by shortening the shared taper from 150 feet to 125 feet with the eastbound left turn lane



at the adjacent Southpark Plaza intersection to the east. Shortening the taper will not affect the length of the back-to back eastbound left turn lane serving the shopping center to the north. Likewise, the existing 50-foot northbound left turn lane is recommended to be extended to 125 feet at this Mineral Avenue at Southpark Terrace (#6) intersection. Extension of this northbound left turn lane will likely require reconstruction of the east side taper.

The southbound approach on Mineral Avenue 150 W along Mineral Avenue (#7) has a reported queue extending past the available stacking distance. However, this queue is an existing deficiency, and the queues remain within the shopping center site. This is unrelated to the project, but a possible solution that the shopping center could consider is converting to just a single inbound lane so that dual southbound left turn lanes could be designated. If a redevelopment occurs within this retail center, the City of Littleton could consider requesting this modification to improve traffic flow out of this retail center.

The 150-foot dual eastbound left turn queues along Mineral Avenue at Broadway (#8) extend past the provided storage with or without project traffic. The turn lanes can be extended to 225 feet and 250 feet prior to conflicting with the existing westbound left turn lane at Mineral Avenue 150 W (#7). However, the turn lanes cannot be extended further to accommodate the 95th percentile queue length without impacting the westbound left turn lane for the King Soopers retail center on the southwest corner of this intersection. At this intersection, dual northbound left turn lanes are recommended to provide a length of 325 feet.

At the intersection of Southpark Drive and Broadway (#11), the northbound left turn lane is recommended to be extended from 125 feet to 175 feet. The turn lane will extend into the shared taper with the southbound left at County Line Road (#13). However, the outside southbound left turn lane at County Line Road can be shortened from 350 feet to 325 feet and a shared taper of 75 feet can still be provided, which will successfully accommodate the queues. The 75-foot shared taper will be shifted to the south to accommodate this proposed modification. Of note, the westbound left turn queue extends past the provided storage length. The project does not contribute to this movement and the reported queue length extending past the existing storage length is a background deficiency. However, vehicles can stack for 250 feet prior to encroaching into the Lincoln Street intersection to the east.

The 100-foot inside northbound left turn lane of the dual lefts at the County Line Road and Broadway (#13) intersection is recommended to be extended by restriping to provide a length of 175 feet by reducing the striped taper from 150 feet to 75 feet. Additionally, the heavy eastbound right movements and queue from the existing condition indicate that the eastbound right turn lane should be lengthened. The eastbound right turn lane is recommended to be extended to the west to be a continuous acceleration-deceleration lane with the Highlands Ranch Healthcare Plaza right-out only driveway located along the south side of County Line Road to the west of Broadway. This continuous eastbound right turn lane along County Line Road will provide a length of approximately 500 feet between the right-in/right-out access and Broadway.

Lastly, the southbound left turn lane at Southpark Terrace at County Line Road (#12) may need to be extended to 250 feet to accommodate the reported queue. This left turn lane extension can be accommodated by striping only.

The queues anticipated to extend beyond recommended or available turn lane lengths through 2045 include the following turn lanes:

• Mineral Avenue & Jackass Hill (#2):	Southbound Right
• Mineral Avenue & Southpark Lane (#3):	Northbound Left
• Mineral Avenue & Mineral Avenue 150 W (#7):	Southbound Left
• Mineral Avenue & Broadway (#8):	Eastbound Left
• Southpark Drive & Broadway (#11):	Westbound Left
• County Line Road & Broadway (#13):	Westbound Left

These lanes cannot be further extended due to existing constraints like back-to back turn lanes or expensive bridge widening. However, the project does not contribute to these movements except the eastbound left turn lanes at Mineral Avenue & Broadway (#8).

5.5 Traffic Signal Progression Analysis

A traffic signal progression analysis was conducted along Mineral Avenue between the existing signalized intersections at Windermere Street and Mineral Avenue 150 W with the two new proposed signalized intersections at Mineral Place and Elati Street. Bandwidth is the window of time within the cycle length of a traffic signal that allows vehicles to travel through coordinated intersections without stopping. The goal of signal coordination is to provide sufficient bandwidth

to allow for the progression of traffic along a corridor. Intersection coordination bandwidths for the study area were estimated using *Synchro 11* and were evaluated under short-term 2028 and long-term 2045 total traffic conditions during the weekday morning and afternoon peak hours. A platoon efficiency for Mineral Avenue is recommended to be 30 percent or better for desirable conditions or 20 percent or better as a minimum.

With the signalized intersections along Mineral Avenue to include Windermere Street, Mineral Place, Elati Street, Mineral Court, and Mineral Avenue 150 W, the vehicle bandwidth through the Mineral Avenue corridor is anticipated to be 40 seconds in the eastbound and westbound directions during the morning peak hour and 30 seconds in the eastbound and westbound directions during the afternoon peak hour. The cycle length is 120 seconds at all the signalized intersections. Therefore, the morning peak hour meets the desired 30 percent efficiency recommendation at 33.3% (40/120). However, the afternoon peak hour only meets the minimum 25.0 percent platoon efficiency target (30/120). Likewise, by 2045, the desirable percent efficiency is met during the morning peak hour at 33.3% (40/120), but only the minimum is met during the afternoon peak hour at 25.0% (30/120). The time space diagrams are attached in **Appendix H**.

5.6 Pedestrian, Bicycle, and Transit Evaluation

Pedestrian, bicycle, and transit evaluations were conducted to address multimodal components of the Mineral Avenue Redevelopment project. Sidewalk facilities currently exist along Mineral Avenue and the east side of Southpark Terrace between Mineral Avenue and Southpark Drive. Bicycle facilities are provided along Mineral Avenue. However, the bike lanes presently terminate at right turn lanes and resume again past the driveway/intersection. There are no bus stops along Mineral Avenue or surrounding the redevelopment area. Bus stops are provided at the southwest and northeast corners of Mineral Avenue/Broadway intersection which are located approximately 1,500 feet east of Southpark Terrace. Additionally, there is a Regional Transportation District (RTD) Littleton/Mineral Station located at the Mineral Avenue/Santa Fe Drive intersection, approximately 1.5 miles west of Mineral Place. This station provides accessibility to Downtown Denver along with light rail connections and bus routes throughout the metropolitan area.

The project will construct eastbound right turn bays along Mineral Avenue of sufficient width to provide buffered bicycle lanes at the intersections with right turn lanes. This will improve the safety for bicyclists over the existing condition where near intersections along Mineral Avenue, the

bicycle lanes become shared with the right turn lanes. These improvements will be provided at the proposed signalized intersections at Mineral Place and Elati Street and the existing signalized intersect at Southpark Terrace along Mineral Avenue.

Additionally, sidewalk will be provided on the west side of Southpark Terrace along the project's frontage. The sidewalk will tie into the existing intersection on the southwest corner of Mineral Avenue/Southpark Terrace intersection and to the existing sidewalk, located 1,500 feet south of Mineral Avenue. The sidewalk along Mineral Avenue will be reconstructed by the project to provide a 10-foot buffer between the street and the sidewalk. Lastly, sidewalk will also be provided internally to the site at the accesses along Mineral Avenue and Southpark Terrace to tie into the existing and future external sidewalk network.

The proposed signalized intersections of Mineral Avenue/Mineral Place and Mineral Avenue/Elati Street will provide protected intersections that are designed to increase bicycle and pedestrian safety. This will provide improved pedestrian connectivity and safety for walking and bicycling in the area.

5.7 Improvement Summary

Based on the results of the operation and turn lane analysis, improvements were identified as being needed at the key study intersections during the short-term and long-term horizons. The key intersection recommended improvements and control are shown in **Figure 16**. Additionally, a conceptual improvement exhibit for the Mineral Avenue and Broadway intersection is shown in **Figure 17**. A summary of improvements and the project contribution to each improvement is provided in **Table 21**. The percent project contribution is based on the controlling afternoon peak hour split between the retail users, Costco specific, and the residential use.

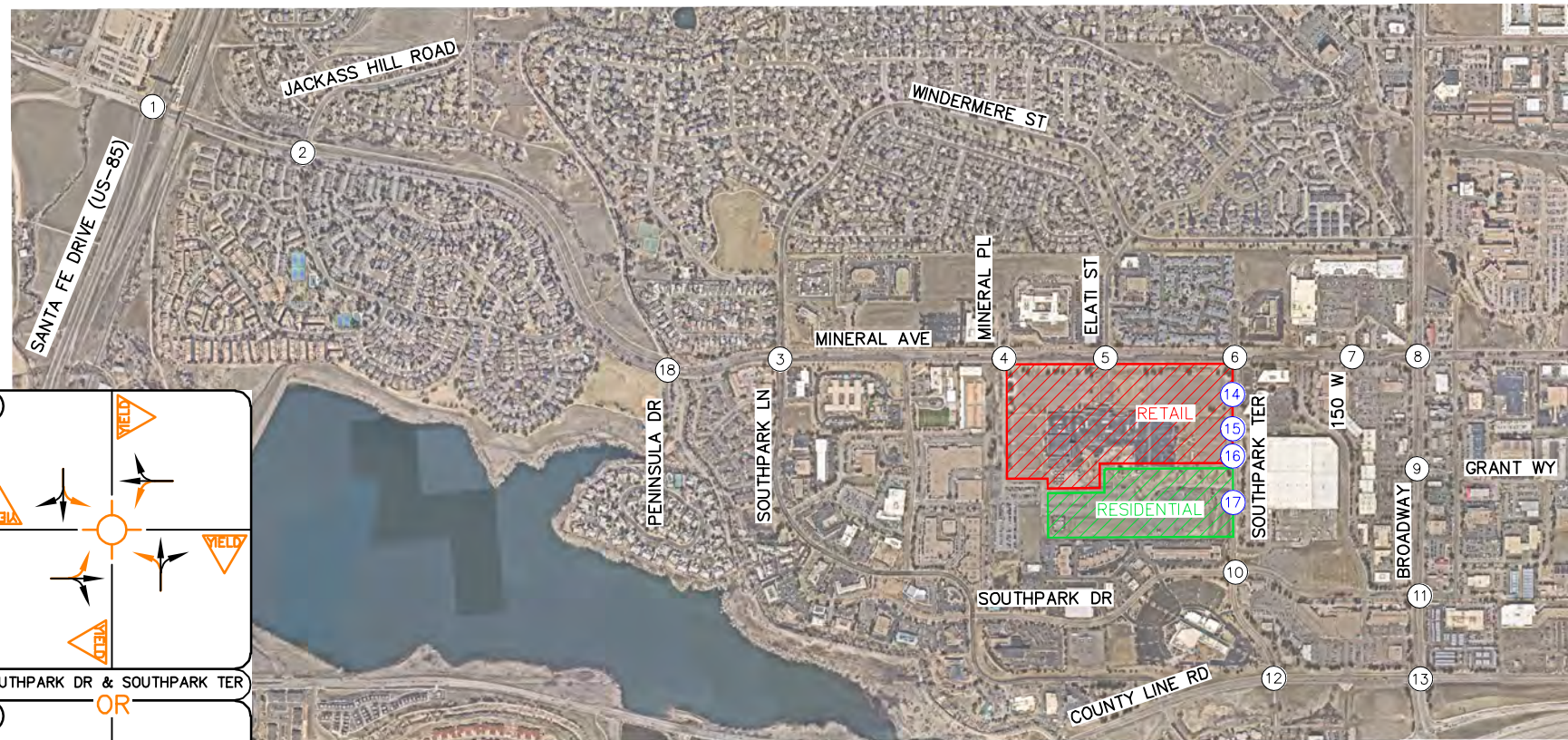
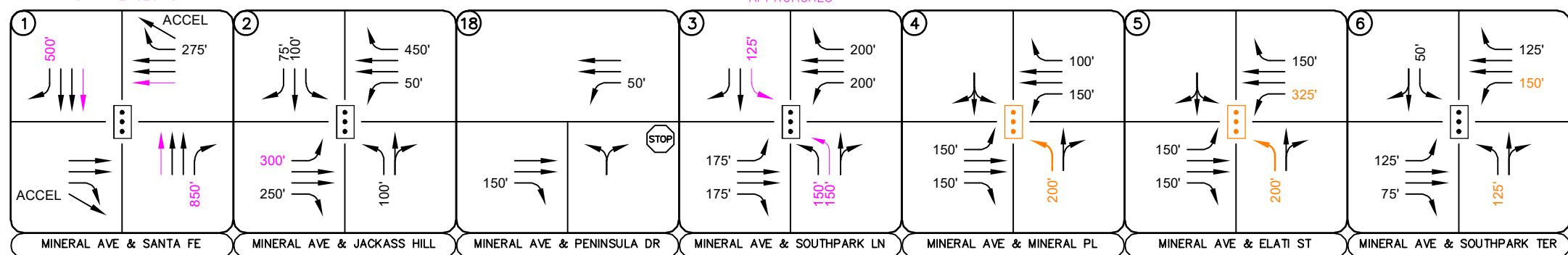
Table 21 – Intersection Improvements and Project Traffic Contribution Summary

#	Intersection	Improvement	Retail Users	Costco	Embry	Total	Responsibility
1	Mineral Avenue & Santa Fe Drive	Approved Quadrant Intersection	Existing Deficiency				N/A
2	Mineral Avenue & Jackass Hill Road	Extend Eastbound Left Turn Lane from 200' to 300'	Existing Deficiency				N/A
3	Mineral Avenue & Southpark Lane	Remove Split Phasing on N/S Approaches	Existing Deficiency				N/A
		Provide Dual NB Left Turn Lanes and Separate SB Left Turn Lane					N/A
4	Mineral Avenue & Mineral Place	Convert to a Signal	31.9%	65.7%	0.0%	97.61%	Costco
5	Mineral Avenue & Elati Street	Convert to a Signal	42.3%	55.5%	1.6%	99.45%	Costco
		Extend WB Left Turn Lane from 150' to 325'	41.4%	56.2%	2.4%	100.00%	Costco
6	Mineral Avenue & Southpark Terrace	Extend WB Left Turn Lane from 125' to 150'	38.6%	0.0%	16.8%	55.43%	Embry
		Extend NB Left Turn Lane from 50' to 125'	11.9%	0.0%	20.2%	32.14%	Embry
8	Mineral Avenue & Broadway	Overall Intersection Improvements	4.6%	6.2%	1.3%	12.11%	F-I-L
10	Southpark Drive & Southpark Terrace	Convert to Roundabout or Signal	21.7%	25.3%	6.8%	53.85%	Costco
11	Southpark Drive & Broadway	Extend NB Left Turn Lane from 125' to 175' and Reconstruct 75' Shared Taper	17.7%	5.6%	13.7%	37.10%	Embry
12	County Line Road & Southpark Terrace	Extend SB Left Turn Lane from 175' to 250'	25.8%	29.6%	4.2%	59.58%	Costco
13	County Line Road & Broadway	Restripe Outside SB Left Turn Lane from 350' to 325' and Reconstruct 75' Shared Taper	17.7%	5.6%	13.7%	37.10%	Embry
		Extend EB Right Turn Lane with Overlap Phasing	5.6%	5.8%	1.8%	13.20%	F-I-L
		Restripe Inside NB Left Turn Lane from 100' to 175'	10.6%	8.9%	4.7%	24.15%	Costco

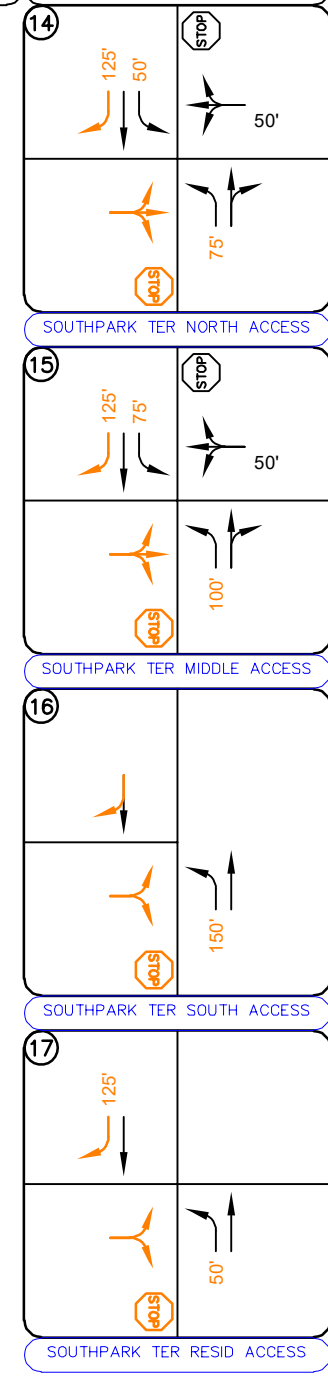
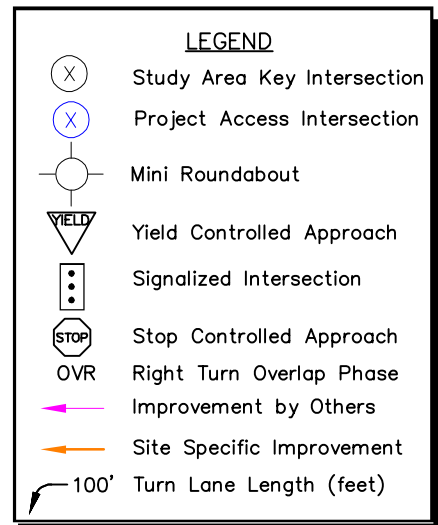
F-I-L = Fee in Lieu

REMOVE ALL LEFT TURN MOVEMENTS FROM INTERSECTION

REMOVED SPLIT PHASING ON N/S APPROACHES



Note: Signal warrant criteria must be met prior to installing the proposed signals.



*BY 2045, EXTEND TO 725'

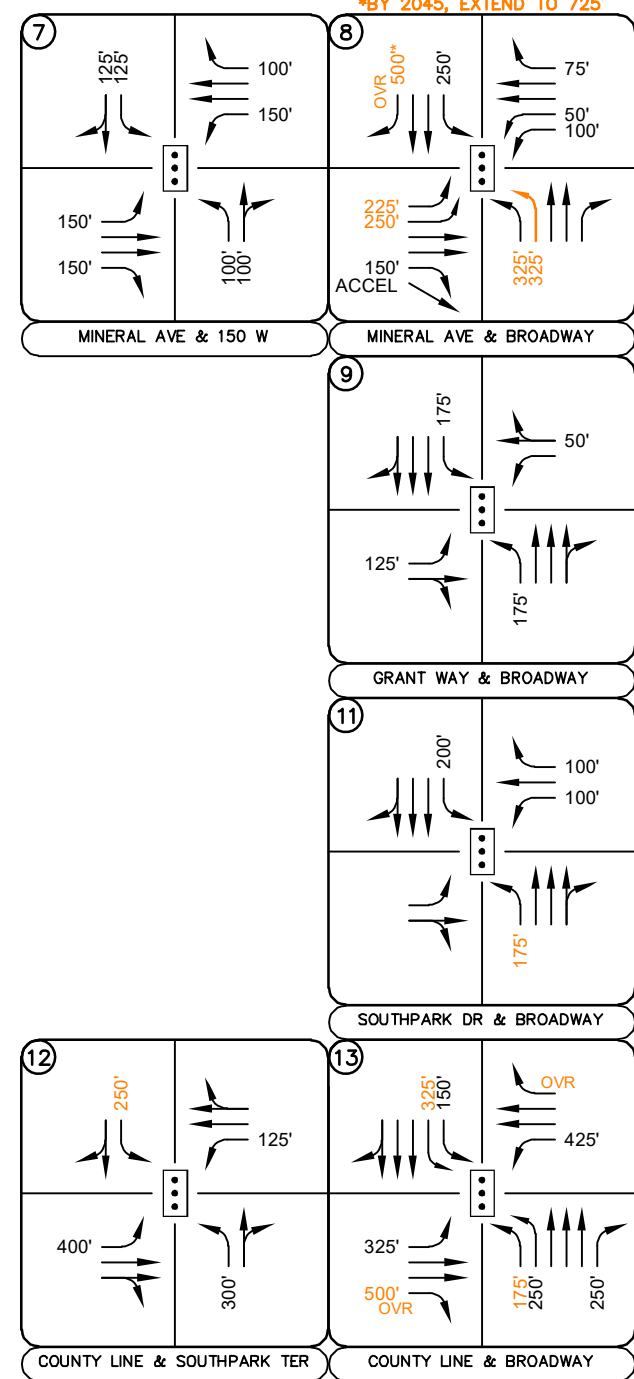


FIGURE 16
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RECOMMENDED GEOMETRY AND CONTROL



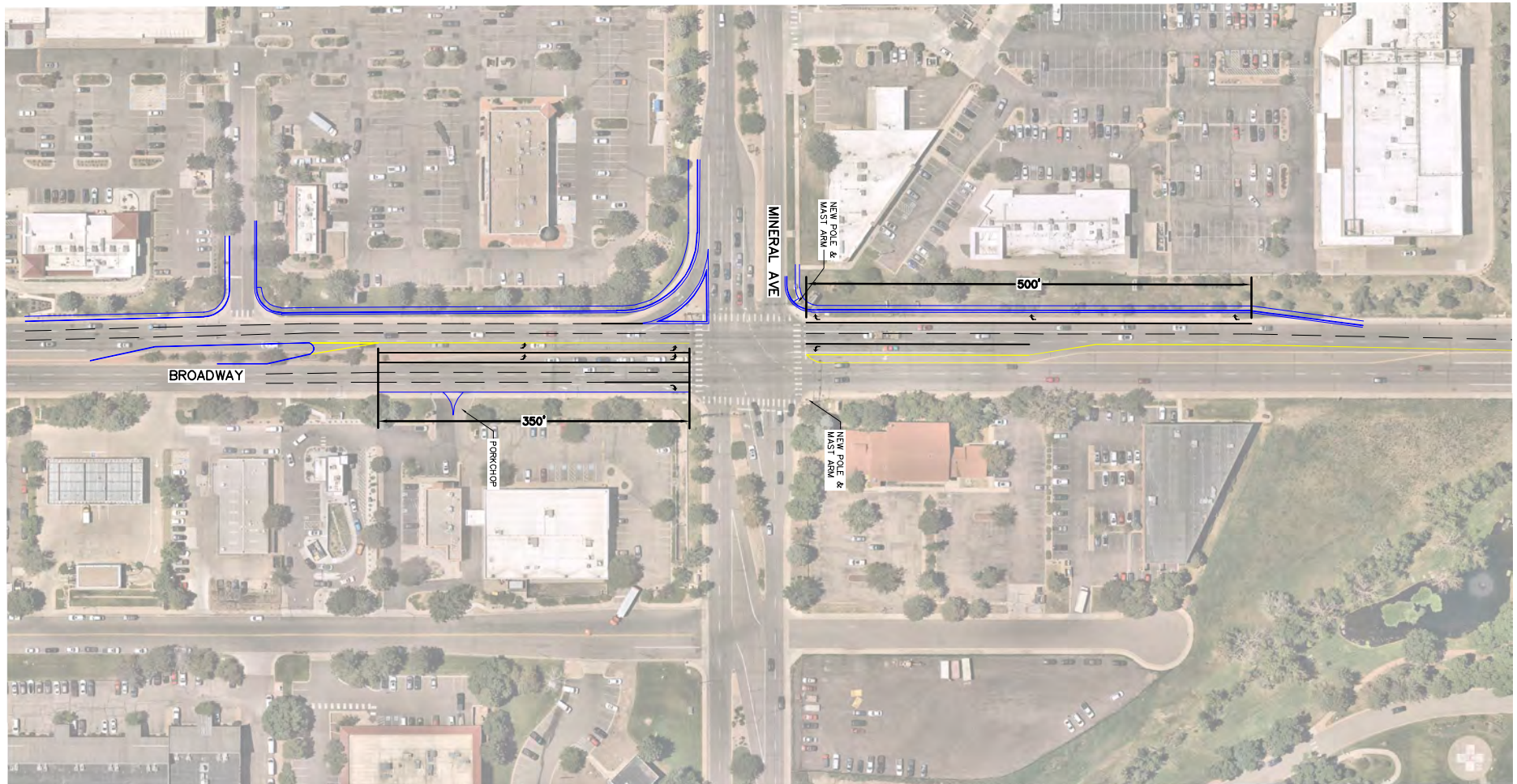
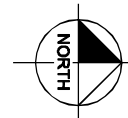


FIGURE 17
 MINERAL AVENUE REDEVELOPMENT
 LITTLETON, COLORADO
 MINERAL AVE & BROADWAY CONCEPTUAL IMPROVEMENT EXHIBIT

GRAPHIC SCALE IN FEET
 0 43.7 87.5 175



6.0 ALTERNATIVE SIGNALIZED ACCESS ANALYSES

The City of Littleton has requested an alternate analysis to determine if only the Mineral Place or the Elati Street intersection being signalized along Mineral Avenue would provide a benefit. Therefore, an alternative intersection analysis has been completed with the first scenario having Mineral Place signalized and Elati Street unsignalized and the second scenario showing Elati Street signalized and Mineral Place unsignalized. The intersections of Mineral Avenue / Mineral Place (#4) and Mineral Avenue / Elati Street (#5) will be the main two intersections affected by the change in intersection control for the total conditions. The unsignalized intersection cannot operate acceptably with full-movement control with long delays on the demand for left turns exiting the site. Therefore, the unsignalized intersections were studied as three-quarter accesses. The three-quarter movement accesses would still allow vehicles to enter the existing developments on the north legs of the two intersections. Specifically, the Restaurant Accounting Services, Inc, Encompass Health Rehabilitation Hospital of Littleton, and future O-Toole's Garden Center are all served only by the north leg of the Mineral Place intersection. Therefore, it is recommended to provide the least restrictive access control. The alternative analysis level of service results are summarized below in **Table 22**.

Table 22 – Alternative Signalized Access Level of Service Results

Intersection	2028 Total				2045 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Scenario 1: Elati Street Three-Quarter Access								
Mineral Ave & Mineral PI (#4) Signalized	11.2	B	27.5	C	16.0	B	28.6	C
Mineral Ave & Elati St (#5)								
Northbound Right	12.5	B	16.5	C	13.2	B	18.7	C
Eastbound Left	8.5	A	9.8	A	8.7	A	10.1	B
Westbound Left	9.7	A	11.2	B	10.0	B	11.9	B
Southbound Right	10.6	B	14.6	B	10.9	B	15.4	C
Scenario 2: Mineral Place Three-Quarter Access								
Mineral Ave & Mineral PI (#4)								
Northbound Right	14.8	B	17.4	C	15.5	C	18.6	C
Eastbound Left	8.7	A	10.5	B	8.9	A	10.8	B
Westbound Left	13.1	B	15.6	C	13.8	B	16.7	C
Southbound Right	10.5	B	16.5	C	10.8	B	17.5	C
Mineral Ave & Elati St (#5) Signalized	13.6	B	34.9	C	13.7	B	37.0	D

The reported queue lengths for the alternative intersection analysis is shown in **Table 23**. The intersection level of service and queue analysis worksheets are included in **Appendix I**.

Table 23 – Turn Lane Queuing Analysis Results

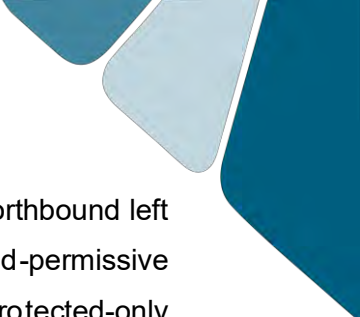
Intersection Turn Lane	Existing Turn Lane Length (feet)	Rec Queue (feet)	2028 Calculated Length (feet)	2045 Calculated Queue (feet)
Scenario 1: Elati Street Three-Quarter Access				
Mineral & Mineral PI (#4) Signalized				
Eastbound Left	150'	150'	19'	26'
Eastbound Right	150'	150'	66'	65'
Westbound Left	150'	150'	125'	131'
Westbound Right	100'	100'	18'	7'
Northbound Left	DNE	200'	287'	307'
Scenario 2: Mineral Place Three-Quarter Access				
Mineral & Elati St (#5) Signalized				
Eastbound Left	150'	150'	26'	25'
Eastbound Right	150'	150'	27'	26'
Westbound Left	150'	275'	297'	295'
Westbound Right	150'	150'	7'	7'
Northbound Left	DNE	175'	341'	349'

As shown in the intersection operational analysis, the two alternative intersection controls operate acceptably. However, as shown in the queueing analysis, the northbound left queues exiting the development have doubled in length at the signalized intersection under each scenario. The northbound left queues are anticipated to extend into the drive isles to the south and may block through and right turn movements if the northbound left turns are consolidated to one signalized intersection exiting the site along Mineral Avenue. Likewise, from the previous referenced traffic signal progression time space diagrams, not signaling one of the two proposed accesses will not provide a platoon benefit eastbound and westbound along Mineral Avenue. The platoon efficiency is controlled by intersections beyond these two intersections. Therefore, it is believed that the best operation includes traffic signals at both intersections.

7.0 CONCLUSIONS AND RECOMMENDATIONS

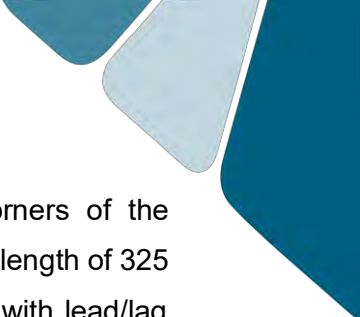
Based on the analysis presented in this report, Kimley-Horn believes the Mineral Avenue Redevelopment project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the east leg of Mineral Avenue at US-85 (Santa Fe Drive) is not anticipated to increase existing access traffic volumes by more than 20 percent, with a maximum expected increase at 16 percent during the afternoon peak hour on the east leg (379 / 2,322). Therefore, a CDOT access permit is not anticipated to be required in association with this project.
- The Mineral Avenue and Santa Fe Drive (US-85) (#1) intersection is currently under design to be improved with construction completed by 2026. The improvement includes removing all left turning vehicles that currently exist at the intersection and diverting them to three proposed intersections adjacent to existing intersection (quadrant intersection improvement). It was confirmed that this intersection would benefit from this improvement to serve existing traffic.
- At the Mineral Avenue and Jackass Hill Road (#2) intersection, the existing 200-foot eastbound left turn lane is recommended to be extended to 300 feet. Of note, the project does not contribute to this movement. It is believed that this left turn lane extension is feasible by reconstructing the raised median along Mineral Avenue to accommodate the extra 100 feet of turn lane length.
- The existing 125-foot northbound left along Southpark Lane at Mineral Avenue (#3) has a vehicle queue exceeding its length. This left turn lane cannot be feasibly extended without blocking the northbound through lane. Of note, the project does not contribute to this movement. However, the north/south approaches operate with split phasing. It was found that removing the split phasing for the intersection would provide the most overall benefit. If the City desires, the raised medians within the north and south legs of Southpark Lane could be



removed to designate a 125-foot southbound left turn lane and 150-foot dual northbound left turn lanes. The southbound left turn is recommended to operate with protected-permissive phasing with the dual northbound left turns recommended to operate with protected-only phasing. Therefore, the City may want to explore improving the north and south legs to improve queueing and remove the split phasing on the northbound and southbound approaches.

- With the addition of project traffic, the Mineral Place (#4) and Elati Street (#5) intersections along Mineral Avenue are both anticipated to meet the Four-Hour MUTCD Signal Warrant. Therefore, it is recommended that these two intersections be signalized. The eastbound and westbound left turn movements are recommended to operate with protected-permissive left turn phasing. Northbound left turn lanes are recommended to be provided at the Mineral Place (#4) and Elati Street (#5) intersections along Mineral Avenue. The northbound approaches at both intersections are recommended to include separate 200-foot left turn lanes and shared through/right turn lanes. Additionally, the westbound left turn lane at Elati Street (#5) along Mineral Avenue is recommended to be extended to 325 feet, which can be accommodated within the existing 20-foot wide median.
- The existing 125-foot westbound left turn lane along Mineral Avenue at Southpark Terrace (#6) is recommended to be extended by 25 feet to provide a length of 150 feet with the addition of project traffic. Extending this turn lane an additional 25 feet will require reconstructing the raised median by shortening the shared taper from 150 feet to 125 feet with the eastbound left turn lane at the adjacent Southpark Plaza intersection to the east. This will not affect the length of the back-to-back eastbound left turn lane serving the shopping center to the north. Likewise, the existing 50-foot northbound left turn lane is recommended to be extended to 125 feet at this Mineral Avenue at Southpark Terrace (#6) intersection. Extension of this northbound left turn lane will likely require reconstruction of the east side taper.
- The northbound approach along Broadway at Mineral Avenue (#8) is recommended to be restriped/reconstructed to provide dual northbound left turn lanes. To accomplish this, the raised median within the south leg of the intersection is recommended to be removed and the southbound lanes shifted west. The southbound through and right turn lanes will shift to the west with the existing curb, gutter, and sidewalk reconstructed. Additionally, new traffic signal



poles/mast arms will likely be needed on the northwest and northeast corners of the intersection. The northbound dual left turn lanes are recommended to provide a length of 325 feet. The northbound and southbound left turns are recommended to operate with lead/lag operations. The 150-foot dual eastbound left turn lanes are recommended to be extended to the furthest possible at 225 feet and 250 feet as available without conflicting with the existing westbound left turn lane at Mineral Avenue 150 W to the west. The southbound right turn lane is recommended to provide a length of 500 feet while the movement is recommended to operate with right turn overlap phasing.

- The intersection of Southpark Drive and Southpark Terrace (#10) is recommended to be converted from an all-way stop control to either a single lane mini roundabout or signalized intersection. As stated by the City, the intersection will need to meet warrant for signalization before a signal is installed. If reconstructed as a single lane mini roundabout, the center island and splitter islands are recommended to be constructed to be traversable by trucks.
- At the intersection of Southpark Drive and Broadway (#11), the northbound left turn lane is recommended to be extended from 125 feet to 175 feet. The turn lane will extend into the shared taper with the southbound left at County Line Road (#13). However, the outside southbound left turn lane at County Line Road could be shortened from 350 feet to 300 feet and still provide a shared taper of 75 feet to accommodate the recommended northbound left turn lane extension at Southpark Drive and Broadway (#11).
- The existing 175-foot southbound left turn lane at Southpark Terrace at County Line Road (#12) intersection may need to be extended by restriping to 250 feet to accommodate the anticipated vehicle queue.
- The 100-foot inside northbound left turn lane of the dual lefts at the County Line Road and Broadway (#13) intersection is recommended to be extended by restriping to provide a length of 175 feet by reducing the striped taper from 150 feet to 75 feet. The heavy eastbound right turn movements identify the need to extend the right turn lane length to accommodate the existing and future queue lengths. The eastbound right turn lane is recommended to be a continuous acceleration-deceleration lane constructed for approximately 500 feet back to the Highlands Ranch Healthcare Plaza right-in/right-out driveway to the west.

- With completion of the Mineral Avenue Redevelopment project, four (4) accesses are proposed along Southpark Terrace, the three northernmost accesses will serve the retail area while the southernmost access will be the primary access for the residential area. These four accesses are planned to provide full turning movements into and out of the site. It is recommended that R1-1 “STOP” signs be installed on the eastbound approaches at all four accesses, exiting the development. The northbound left turn movements will be accommodated within the existing two-way left turn lane area, redesignated with a 75-foot left turn lane at the North Retail Access, a 100-foot left turn lane at the Middle Retail Access, a 150-foot left turn lane at the South Retail Access and a 50-foot left turn lane at the Residential Access. Additionally, southbound right turn lanes at the two northern retail accesses (#14-15) and the residential access (#17) are recommended to provide turn lane lengths of 125 feet.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Littleton and the Manual on Uniform Traffic Control Devices (MUTCD) – 2023 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets

Mineral Avenue Redevelopment
Peak Hour Turning Movement Comparison

Mineral Avenue and Southpark Terrace

	Jul-23		September 2023	
	AM Peak	PM Peak	AM Peak	PM Peak
EBL	8	16	3	20
EBT	750	828	871	820
EBR	37	23	37	39
WBL	39	71	83	82
WBT	574	852	605	960
WBR	8	45	12	37
NBL	18	49	25	57
NBT	5	11	1	14
NBR	41	77	27	70
SBL	26	16	42	16
SBT	6	3	8	2
SBR	14	13	15	14
Total	1526	2004	1729	2131
Percent Difference			13%	6%

County Line Road and Southpark Terrace

	Jul-23		September 2023	
	AM Peak	PM Peak	AM Peak	PM Peak
EBL	67	62	78	81
EBT	342	527	416	610
EBR	22	8	28	9
WBL	99	52	86	42
WBT	346	492	381	521
WBR	67	49	80	100
NBL	7	22	9	25
NBT	5	7	5	6
NBR	51	98	39	83
SBL	24	54	28	97
SBT	7	6	4	10
SBR	42	123	32	109
Total	1079	1500	1186	1693
Percent Difference			10%	13%

Average	12%	10%

Santa Fe Dr & Mineral
4/18/2023

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:00 AM	44	443	17	46	353	17	68	105	165	38	63	57	1416
7:15 AM	56	389	20	67	334	23	72	150	201	31	78	45	1466
7:30 AM	42	424	43	68	377	36	72	204	219	31	86	55	1657
7:45 AM	37	397	51	101	347	26	53	240	204	45	108	66	1675
8:00 AM	34	403	69	77	354	22	42	237	170	47	120	76	1651
8:15 AM	45	390	35	69	345	36	40	230	169	38	109	62	1568
8:30 AM	58	399	28	67	295	26	64	192	123	34	130	57	1473
8:45 AM	42	400	34	86	291	30	59	150	106	28	99	54	1379
Total	358	3245	297	581	2696	216	470	1508	1357	292	793	472	

Peak Hour													
7:30 AM	158	1614	198	315	1423	120	207	911	762	161	423	259	6551
PHF	0.681	0.911	0.717	0.780	0.944	0.833	0.719	0.949	0.870	0.856	0.813	0.852	0.978

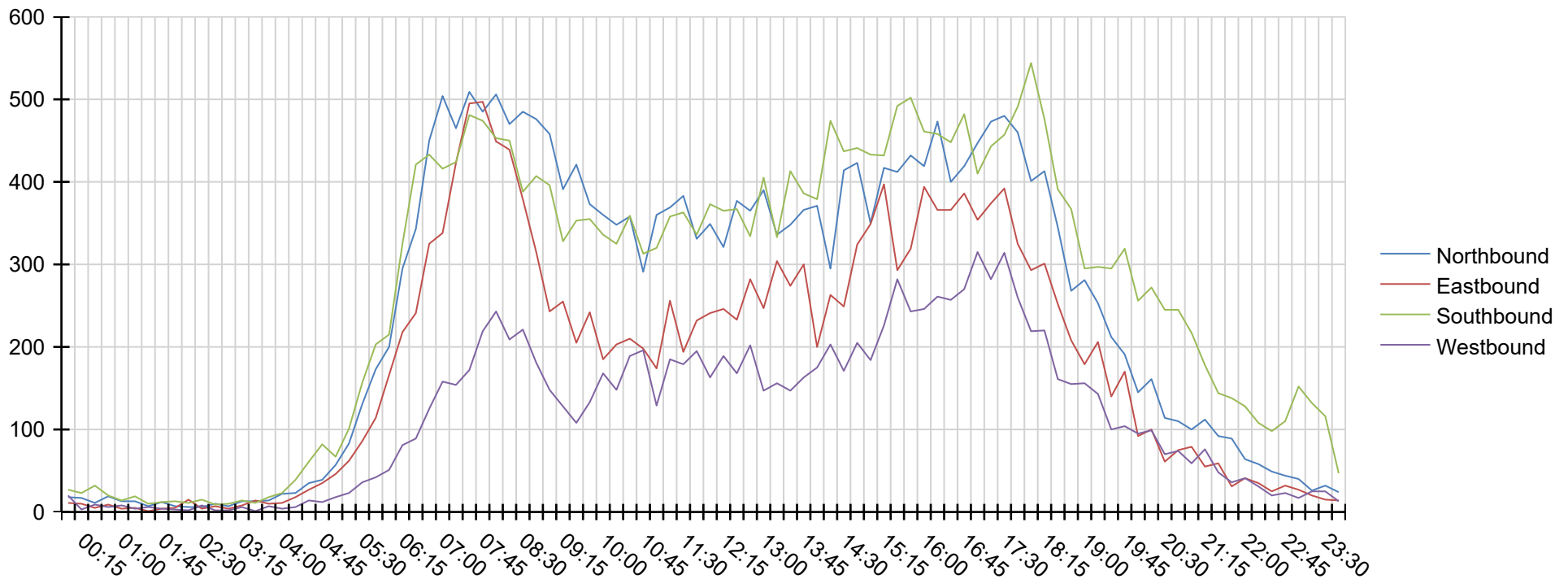
Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
4:00 PM	69	301	49	78	326	57	30	208	156	37	169	40	1520
4:15 PM	63	358	52	71	337	50	41	181	144	41	177	43	1558
4:30 PM	74	274	52	47	343	58	39	201	126	41	183	33	1471
4:45 PM	77	287	55	81	332	69	22	208	156	51	179	40	1557
5:00 PM	89	296	62	37	319	54	36	157	161	53	209	53	1526
5:15 PM	85	334	54	35	355	53	38	166	170	50	192	40	1572
5:30 PM	79	351	50	52	344	61	30	184	178	56	195	63	1643
5:45 PM	83	337	40	71	336	84	23	146	156	43	170	47	1536
Total	619	2538	414	472	2692	486	259	1451	1247	372	1474	359	

Peak Hour													
4:45 PM	330	1268	221	205	1350	237	126	715	665	210	775	196	6298
PHF	0.927	0.885	0.891	0.633	0.951	0.705	0.768	0.859	0.934	0.938	0.927	0.778	0.958

Intersection Santa Fe & Mineral

Date 4/18/2023

	Right	Through	Left	UTurn	Total
Northbound	1897	18399	3244	1	23541
Eastbound	7065	7974	2342	4	17385
Southbound	2765	19306	3723	12	25806
Westbound	2869	6498	1924	3	11294
Total	14596	52177	11233	20	78026





Turning Movement Counts

Intersection Santa Fe & Mineral

Date 4/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00		15	3		8	2	1		6	17	4		11	8	1	
00:15	1	14	2		4	4	2		3	19	1		2	1		
00:30	1	8	2		1	4			4	24	4		5	4		
00:45		17	2		2	5	2		4	14	2		4	2		
01:00		13				2	2		4	8	2		6	2		
01:15	2	9	2		1	2	2		2	15	2		2	2		
01:30		7				1			2	5	3		3	2	1	
01:45	2	9	1		1	2	1		4	8			2	1	1	
02:00	1	6			1		4			12	1		2	1		
02:15		6			7	8			2	7	2		1	1		
02:30		4	2		3	1			1	13	1		5	2	1	
02:45		10			1	4	2		1	8				1	1	
03:00	1	6			3	1			1	8	1		1	1		
03:15		12	1		1	2	5			14			2	4		
03:30		13			6	3	5		1	8	2		1			
03:45	1	10	3		4	1	5		1	16	1		3	4		
04:00		18	4		3	5	3		1	19	3		2	1	1	
04:15		22	1		8	5	5		1	34	4		1	3	2	
04:30		34	1		16	6	5		4	49	8		3	7	4	
04:45	1	35	3		10	14	11		3	69	10		8	3	1	
05:00	2	48	7		21	13	12		2	59	6		6	5	7	
05:15	2	78	3		23	21	18		6	89	6		10	7	6	
05:30	4	121	6		32	37	17		4	135	18		12	10	14	
05:45	4	149	20		31	55	28		8	172	23		18	13	11	
06:00	7	179	14		74	51	41		8	176	31		17	12	22	
06:15	10	248	37		114	66	38		11	281	33		33	27	21	



Turning Movement Counts

Intersection Santa Fe & Mineral

Date 4/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
06:30	9	308	26		106	81	54		17	340	64		30	37	22	
06:45	20	394	36		150	119	56		15	356	62		42	53	30	
07:00	17	443	44		165	105	68		17	353	46		57	63	38	
07:15	20	389	56		201	150	72		23	334	67		45	78	31	
07:30	43	424	42		219	204	72		36	377	68		55	86	31	
07:45	51	397	36	1	204	240	53		26	347	101		66	108	45	
08:00	69	403	34		170	237	42		22	354	77		76	120	47	
08:15	35	390	45		169	230	40		36	345	69		62	109	38	
08:30	28	399	58		123	192	63	1	26	295	66	1	57	130	34	
08:45	34	400	42		106	150	59		30	291	85	1	54	99	28	
09:00	26	384	48		73	132	38		16	314	66		37	80	31	
09:15	20	329	42		72	135	48		29	258	41		36	73	19	
09:30	29	341	51		65	101	39		38	264	51		22	59	27	
09:45	22	297	54		68	120	54		25	277	53		33	84	16	
10:00	27	289	44		67	94	24		38	250	48		50	90	28	
10:15	18	282	48		66	104	33		30	246	49		41	82	25	
10:30	16	294	48		82	96	32		37	260	62		63	98	28	
10:45	18	224	49		72	100	26		35	224	54		60	104	31	1
11:00	22	279	59		70	74	30		41	218	61		36	76	17	
11:15	20	306	43		102	105	49		49	250	59		50	104	31	
11:30	18	307	58		90	74	30		30	281	52		58	96	25	
11:45	24	258	49		96	99	37		36	237	62	1	50	129	16	
12:00	27	267	55		91	104	46		51	274	48		48	91	24	
12:15	18	265	38		93	116	37		37	254	74		50	94	45	
12:30	18	296	63		104	104	25		44	269	54		54	85	29	
12:45	31	279	55		103	134	45		27	248	59		73	101	28	



Turning Movement Counts

Intersection Santa Fe & Mineral

Date 4/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
13:00	27	299	64		116	103	28		49	290	65	1	46	71	30	
13:15	20	267	49		111	152	41		27	233	73		48	81	27	
13:30	21	276	51		127	112	35		48	292	72	1	39	94	14	
13:45	29	287	50		89	173	37	1	42	271	73		36	101	26	
14:00	26	286	59		84	90	26		39	276	64		53	100	22	
14:15	33	212	50		108	132	23		68	328	78		47	128	28	
14:30	35	313	66		94	117	38		56	332	47	2	39	102	30	
14:45	64	297	62		106	175	43		55	314	72		46	119	40	
15:00	41	244	65		136	178	35		55	319	58	1	40	117	27	
15:15	42	305	70		172	182	43		62	303	67		46	139	41	
15:30	53	307	52		123	134	36		77	345	70		59	174	49	
15:45	38	312	82		145	145	29		73	369	60		49	152	42	
16:00	49	301	69		156	208	30		57	326	78		40	169	37	
16:15	52	358	63		144	181	41		50	337	71		43	177	41	
16:30	52	274	74		126	201	39		58	343	47		33	183	41	
16:45	55	287	77		156	208	22		69	332	80	1	40	179	51	
17:00	62	296	89		161	157	34	2	54	319	37		53	209	53	
17:15	54	334	85		170	166	38		53	355	34	1	40	192	50	
17:30	50	351	79		178	184	30		61	344	52		63	195	56	
17:45	40	337	83		156	146	23		84	336	70	1	47	170	43	
18:00	46	294	61		139	121	33		74	398	72		39	149	31	
18:15	44	306	63		132	132	37		45	355	76		47	135	38	
18:30	37	254	54		101	117	34		51	287	52	1	26	115	20	
18:45	21	197	50		76	109	23		51	263	53		37	86	32	
19:00	22	213	46		76	88	15		39	217	39		41	89	26	
19:15	17	207	29		97	91	18		33	215	49		38	84	19	2



Turning Movement Counts

Intersection Santa Fe & Mineral

Date 4/18/2023

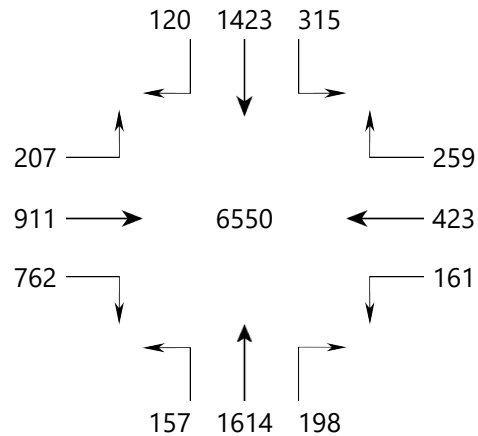
	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
19:30	17	161	34		67	47	26		42	224	29		34	55	11	
19:45	13	141	37		73	75	22		41	230	48		24	63	17	
20:00	22	100	23		50	33	9		37	198	21		24	54	17	
20:15	14	123	24		44	51	5		37	205	30		21	54	24	
20:30	8	84	22		31	24	6		28	191	26		19	32	19	
20:45	9	87	14		31	35	9		24	206	15		16	46	12	
21:00	14	75	11		36	39	4		26	159	32		16	36	7	
21:15	9	82	21		21	30	4		24	128	26		14	44	18	
21:30	8	73	11		26	28	5		24	103	17		13	29	6	
21:45	12	65	12		14	15	2		19	103	16		12	21	3	
22:00	6	51	7		12	18	11		21	97	10		14	24	3	
22:15	2	46	10		16	12	7		17	79	12		14	15	2	
22:30	2	38	9		12	10	3		13	70	15		5	11	4	
22:45	4	28	12		15	13	4		12	83	15		4	17	2	
23:00	2	33	5		12	9	6		23	116	13		8	7	2	
23:15	3	21	2		10	6	4		24	95	13		13	8	4	
23:30		28	4		9	5	1		20	89	7		12	12	1	
23:45	3	14	7		5	7	2		8	36	3		6	7		
Total	1897	18399	3244	1	7065	7974	2342	4	2765	19306	3723	12	2869	6498	1924	3

Intersection Santa Fe & Mineral

Date 4/18/2023

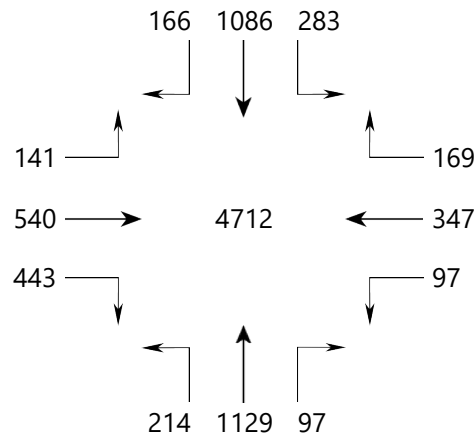
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 07:30 TO 08:30



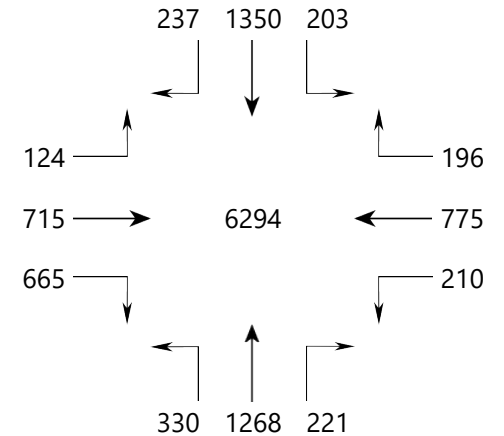
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 13:00 TO 14:00



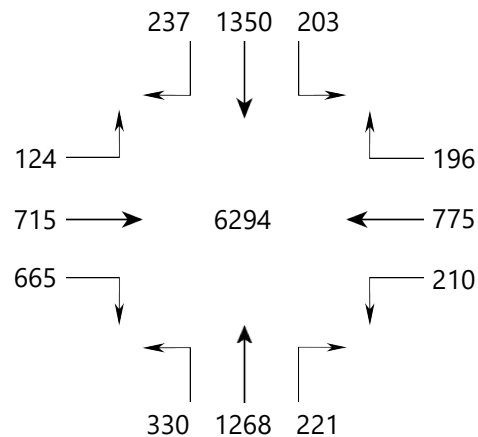
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 16:45 TO 17:45



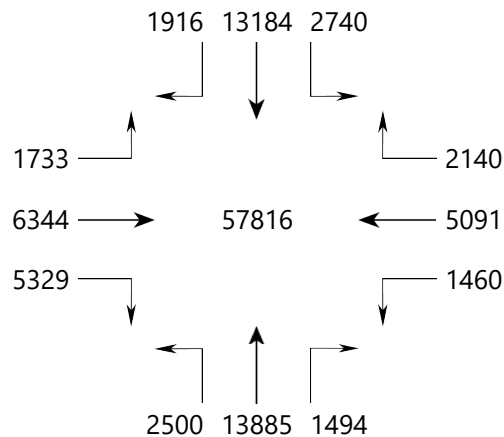
OVERALL PEAK HOUR VOLUME

FROM 16:45 TO 17:45



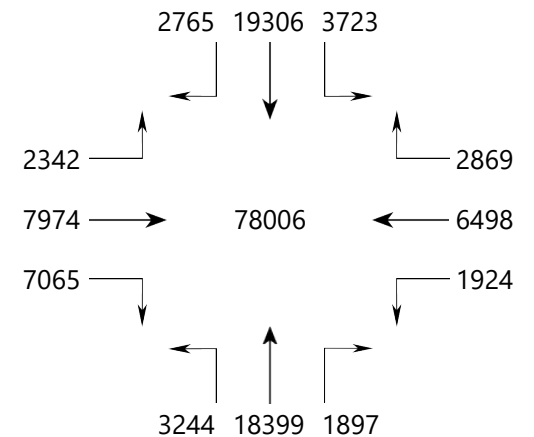
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

FROM 00:00 TO 23:59



Jackass Hill & Mineral
4/18/2023

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:00 AM	13	5	2	30	11	31	19	120	2	1	89	15	338
7:15 AM	23	7	0	23	8	23	25	186	0	1	103	22	421
7:30 AM	22	13	1	30	14	23	56	205	1	1	103	27	496
7:45 AM	22	14	6	57	10	61	94	250	4	1	130	64	713
8:00 AM	12	32	2	47	19	71	103	211	4	4	146	66	717
8:15 AM	11	10	2	28	8	56	105	193	3	0	123	54	593
8:30 AM	18	12	4	42	6	43	56	196	3	2	134	25	541
8:45 AM	6	8	3	27	13	40	32	177	8	2	127	24	467
Total	127	101	20	284	89	348	490	1538	25	12	955	297	

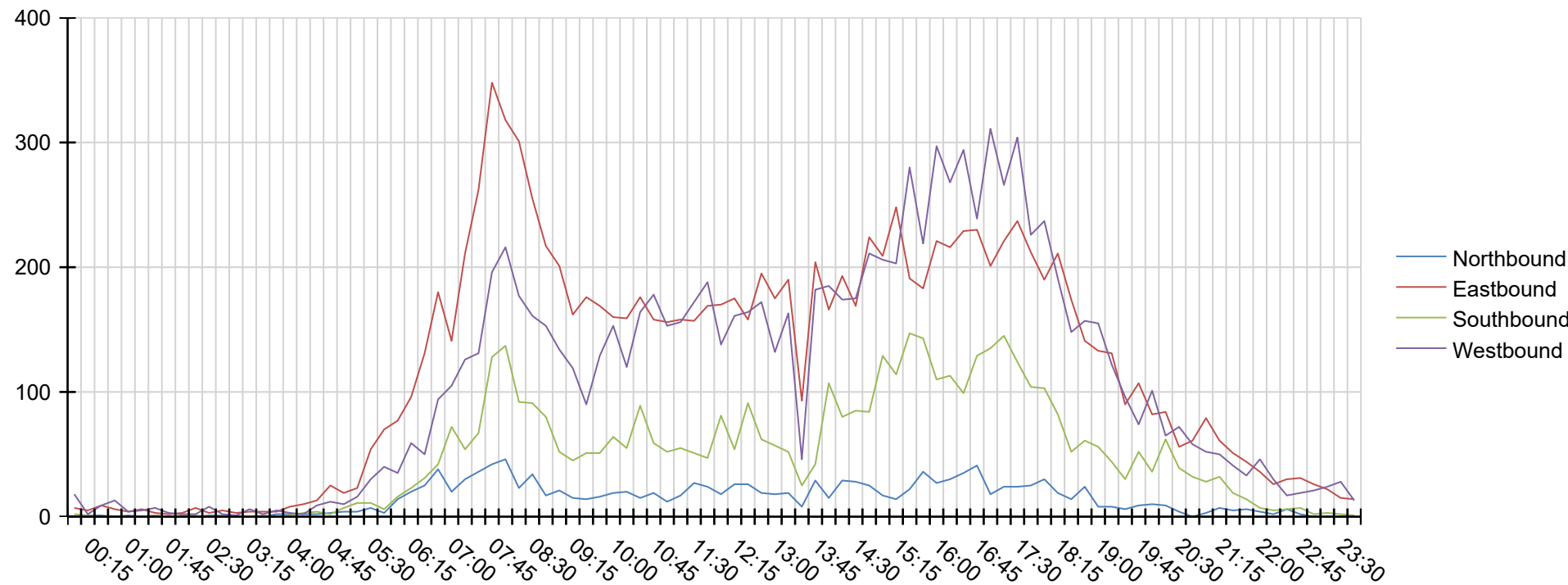
Peak Hour													
7:45 AM	63	68	14	174	43	231	358	850	14	7	533	209	2564
PHF	0.685	0.531	0.583	0.763	0.566	0.813	0.852	0.850	0.438	0.438	0.913	0.792	0.894

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
4:00 PM	7	11	9	49	15	46	50	170	1	5	239	53	655
4:15 PM	12	14	4	42	18	53	56	158	2	3	217	48	627
4:30 PM	6	16	13	43	13	43	73	150	6	4	233	57	657
4:45 PM	8	22	11	50	18	61	66	161	3	2	198	39	639
5:00 PM	6	9	3	47	12	76	65	130	6	7	250	54	665
5:15 PM	12	6	6	57	23	65	63	149	9	4	213	49	656
5:30 PM	14	7	3	46	18	60	50	172	15	3	244	57	689
5:45 PM	12	11	2	35	16	53	53	149	10	6	183	37	567
Total	77	96	51	369	133	457	476	1239	52	34	1777	394	

Peak Hour													
4:45 PM	40	44	23	200	71	262	244	612	33	16	905	199	2649
PHF	0.714	0.500	0.442	0.877	0.772	0.862	0.836	0.890	0.550	0.571	0.905	0.873	0.961

Intersection Mineral & Jackass
Date 4/18/2023

	Right	Through	Left	UTurn	Total
Northbound	169	455	724		1348
Eastbound	314	8550	2564	12	11440
Southbound	2235	697	1713		4645
Westbound	1870	8312	148	6	10336
Total	4588	18014	5149	18	27769



Intersection Mineral & Jackass

Date 4/18/2023

	Northbound			Eastbound				Southbound			Westbound			
	R	T	L	R	T	L	U	R	T	L	R	T	L	U
00:00					7				2		1	17		
00:15	1				4	1			1		1	1		
00:30			1	1	8							9		
00:45				1	3	2					1	12		
01:00			1		4							3	1	
01:15					5	1					1	4		
01:30			1		3			1				7		
01:45					1	1						3		
02:00					3					1		2		
02:15					5	2		1			1	1		
02:30			1		3							8		
02:45		1			4	1			1		1	1		
03:00					3					1		1		
03:15					4							6		
03:30					4						1	1	1	
03:45			2		3	1						5		
04:00			2		8					1		3		
04:15			2	1	9			2	1			2		
04:30		1	1		12	1		1	2	1		9		
04:45			3		24	1			1	1	2	10		
05:00			4		19			3	1	3	1	9		
05:15			4		22	1		4	4	3	1	15		
05:30	1		6		50	4		4	4	3	1	29		
05:45		1	2		61	9		4	2		1	39		
06:00	2	2	10		67	10		11	1	4	9	26		
06:15	2	6	12	2	79	15		14	4	5	4	55		



Turning Movement Counts

Intersection Mineral & Jackass

Date 4/18/2023

	Northbound			Eastbound				Southbound			Westbound			
	R	T	L	R	T	L	U	R	T	L	R	T	L	U
06:30	2	3	20		124	7		11	9	11	11	38	1	
06:45	2	9	27	3	154	22	1	26	5	11	14	79	1	
07:00	2	5	13	2	120	18	1	31	11	30	15	89	1	
07:15		7	23		186	25		23	8	23	22	103	1	
07:30	1	13	22	1	205	56		23	14	30	27	103	1	
07:45	6	14	22	4	250	94		61	10	57	64	130	1	1
08:00	2	32	12	4	211	103		71	19	47	66	146	4	
08:15	2	10	11	3	193	105		56	8	28	54	123		
08:30	4	12	18	3	196	55	1	43	6	42	25	134	2	
08:45	3	8	6	8	177	32		40	13	27	24	127	2	
09:00	1	6	14	4	161	36		17	8	27	27	106	1	
09:15	4	3	8	5	132	25		16	5	24	17	100	1	1
09:30		6	8	4	139	33		27	8	16	11	79		
09:45	1	3	12	4	121	44		17	8	26	31	97	1	
10:00	2	3	14	3	122	35		36	6	22	24	126	3	
10:15	4	6	10	4	132	23		25	10	20	21	97	2	
10:30	1	2	12	2	152	22		50	10	29	24	137	3	
10:45	3	6	10	3	120	34	1	36	7	16	33	143	2	
11:00	1	5	6	5	129	22		20	8	24	28	123	2	
11:15	1	4	12	8	130	20		31	3	21	24	128	4	
11:30	2	11	14	6	126	25		25	7	19	28	141	3	
11:45	5	8	11	5	120	44		20	8	19	32	156		
12:00	2	6	10	6	121	43		38	20	23	23	113	2	
12:15	1	8	17	6	122	47		34	6	14	28	131	2	
12:30	2	11	13	6	123	29		39	13	39	38	123	3	
12:45	7	5	7	12	147	35	1	31	9	22	32	140		



Turning Movement Counts

Intersection Mineral & Jackass

Date 4/18/2023

	Northbound			Eastbound				Southbound			Westbound			
	R	T	L	R	T	L	U	R	T	L	R	T	L	U
13:00	3	4	11	7	136	32		32	9	16	23	108	1	
13:15	1	7	11	5	152	32	1	21	4	27	36	124	3	
13:30		4	4	4	73	16		8	4	13	6	40		
13:45	7	11	11	7	146	51		19	5	18	32	149	1	
14:00	3	4	8	12	125	29		61	14	32	27	155	3	
14:15	4	11	14	2	153	37	1	37	3	40	31	141	2	
14:30	4	12	12	2	124	43		46	8	31	37	136	2	
14:45	4	9	12	2	150	72		38	12	34	42	161	7	1
15:00	2	4	11		150	59		76	10	43	43	160	3	
15:15		4	10	2	174	72		58	10	46	47	156		
15:30	1	15	6	6	148	37		80	16	51	44	233	2	1
15:45	7	19	10	4	138	41		68	23	52	32	182	5	
16:00	9	11	7	1	170	50		46	15	49	53	239	5	
16:15	4	14	12	2	158	56		53	18	42	48	217	3	
16:30	13	16	6	6	150	72	1	43	13	43	57	233	4	
16:45	11	22	8	3	161	66		61	18	50	39	198	2	
17:00	3	9	6	6	130	65		76	12	47	54	250	7	
17:15	6	6	12	9	149	62	1	65	23	57	49	213	4	
17:30	3	7	14	15	172	49	1	60	18	46	57	244	3	
17:45	2	11	12	10	149	53		53	16	35	37	183	6	
18:00	3	10	17	16	127	47		53	12	38	46	188	3	
18:15	1	2	16	17	121	73		43	13	26	34	153	4	
18:30	1	5	8	11	109	53	1	26	10	16	26	116	6	
18:45	2	10	12	9	107	25		32	13	16	37	113	7	
19:00	2		6	14	87	32		27	12	17	28	124	2	1
19:15	1	3	4	8	81	42		24	6	14	19	100	2	1



Turning Movement Counts

Intersection Mineral & Jackass

Date 4/18/2023

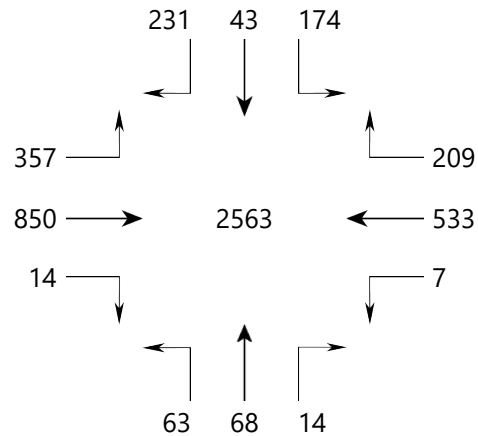
	Northbound			Eastbound				Southbound			Westbound			
	R	T	L	R	T	L	U	R	T	L	R	T	L	U
19:30		1	5	5	58	27		8	7	15	13	80	3	
19:45	1		8	5	66	36		25	12	15	9	63	2	
20:00	2	1	7		52	30		14	10	12	19	80	2	
20:15		2	7	1	73	10		21	21	20	13	51	1	
20:30			4	1	48	7		11	12	16	10	60	2	
20:45					48	12	1	8	12	12	4	53	1	
21:00			3	2	53	24		14	9	5	7	45		
21:15		1	6	1	42	18		13	10	9	7	42	1	
21:30		1	4		39	12		6	10	3	6	35		
21:45	2	1	3	1	30	13		7	4	3	8	25		
22:00			4		29	7		2	3	2	5	38	3	
22:15			2	1	21	4		1	1	3	1	29		
22:30		1	5	1	27	2		2	1	3	2	14	1	
22:45			2		27	4		3	2	2	4	15		
23:00					24	2		1		1	4	17		
23:15					18	4		1	1	1	1	23		
23:30					14	1			1	1	4	23	1	
23:45					13	1			1			13		
Total	169	455	724	314	8550	2564	12	2235	697	1713	1870	8312	148	6

Intersection Mineral & Jackass

Date 4/18/2023

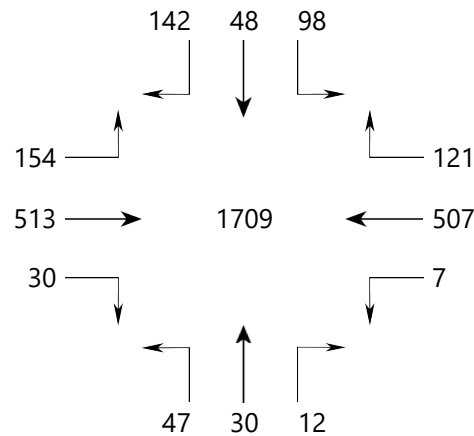
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 07:45 TO 08:45



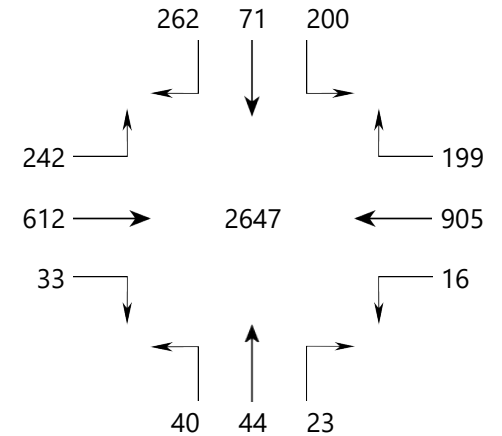
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:00 TO 13:00



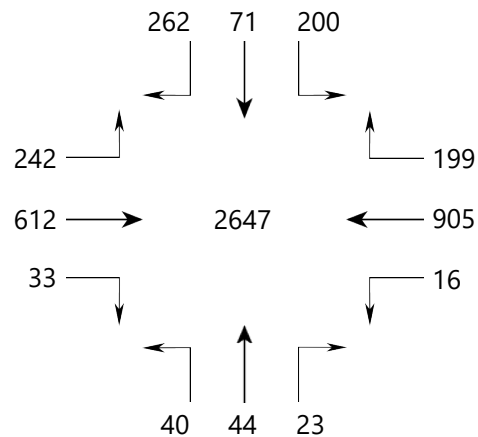
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 16:45 TO 17:45



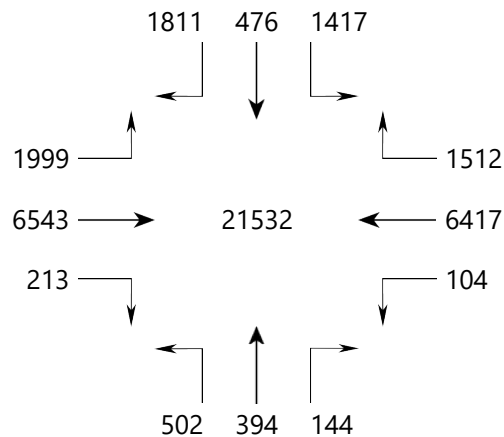
OVERALL PEAK HOUR VOLUME

FROM 16:45 TO 17:45



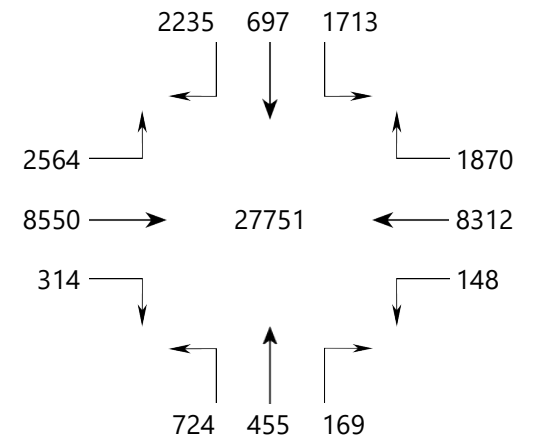
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

FROM 00:00 TO 23:59





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Windermere St

File Name : Mineral Ave and Windermere St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

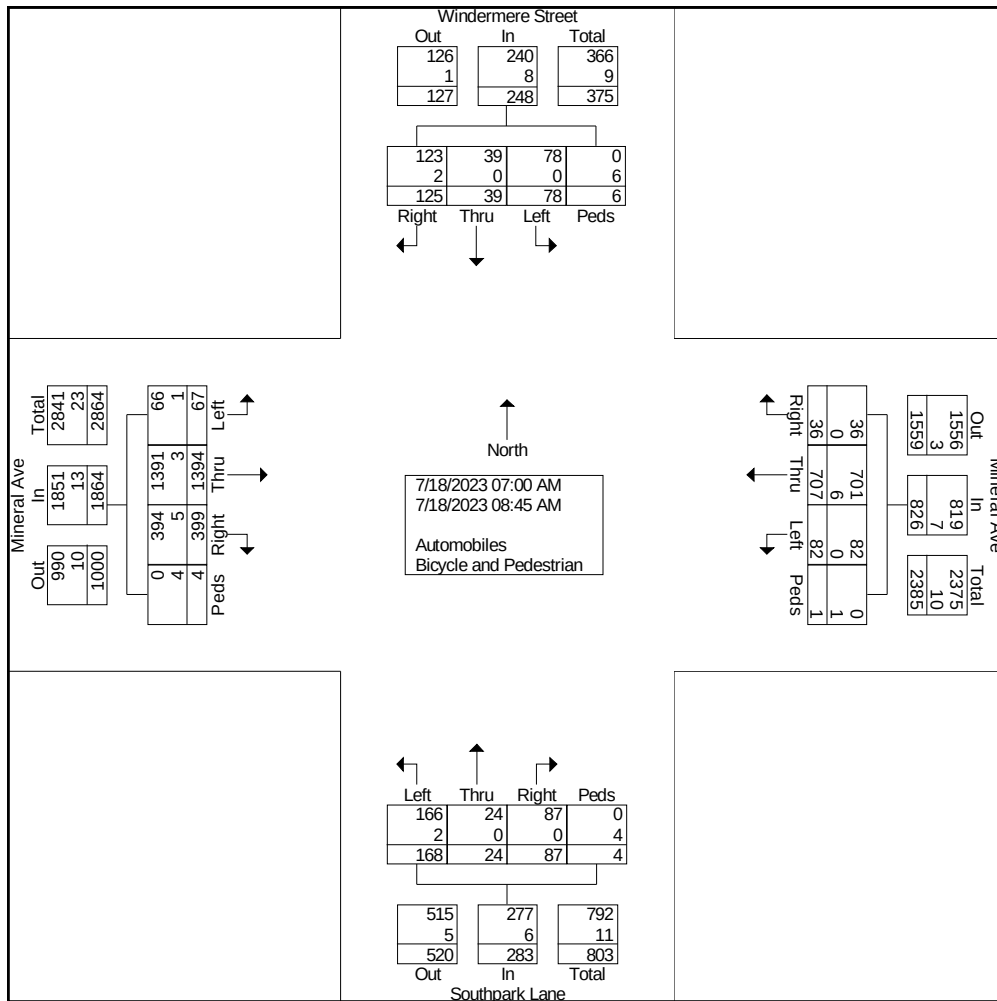
	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Lane Northbound					Windermere Street Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	5	109	36	1	151	8	55	2	0	65	12	1	4	1	18	6	1	6	1	14	248
07:15 AM	5	155	37	1	198	9	75	3	1	88	8	2	17	1	28	6	4	11	1	22	336
07:30 AM	3	204	50	0	257	8	96	5	0	109	19	2	15	0	36	13	5	11	0	29	431
07:45 AM	5	205	72	0	282	7	84	3	0	94	21	3	10	0	34	9	5	21	1	36	446
Total	18	673	195	2	888	32	310	13	1	356	60	8	46	2	116	34	15	49	3	101	1461
08:00 AM	11	173	52	0	236	6	95	6	0	107	22	6	7	0	35	10	6	20	1	37	415
08:15 AM	11	191	54	0	256	12	87	7	0	106	26	3	11	1	41	15	4	14	1	34	437
08:30 AM	9	175	41	1	226	14	100	4	0	118	37	3	11	0	51	11	9	15	1	36	431
08:45 AM	18	182	57	1	258	18	115	6	0	139	23	4	12	1	40	8	5	27	0	40	477
Total	49	721	204	2	976	50	397	23	0	470	108	16	41	2	167	44	24	76	3	147	1760
Grand Total	67	1394	399	4	1864	82	707	36	1	826	168	24	87	4	283	78	39	125	6	248	3221
Apprch %	3.6	74.8	21.4	0.2		9.9	85.6	4.4	0.1		59.4	8.5	30.7	1.4		31.5	15.7	50.4	2.4		
Total %	2.1	43.3	12.4	0.1	57.9	2.5	21.9	1.1	0	25.6	5.2	0.7	2.7	0.1	8.8	2.4	1.2	3.9	0.2	7.7	
Automobiles	66	1391	394	0	1851	82	701	36	0	819	166	24	87	0	277	78	39	123	0	240	3187
% Automobiles	98.5	99.8	98.7	0	99.3	100	99.2	100	0	99.2	98.8	100	100	0	97.9	100	100	98.4	0	96.8	98.9
Bicycle and Pedestrian	1	3	5	4	13	0	6	0	1	7	2	0	0	4	6	0	0	2	6	8	34
% Bicycle and Pedestrian	1.5	0.2	1.3	100	0.7	0	0.8	0	100	0.8	1.2	0	0	100	2.1	0	0	1.6	100	3.2	1.1



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Windermere St

File Name : Mineral Ave and Windermere St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



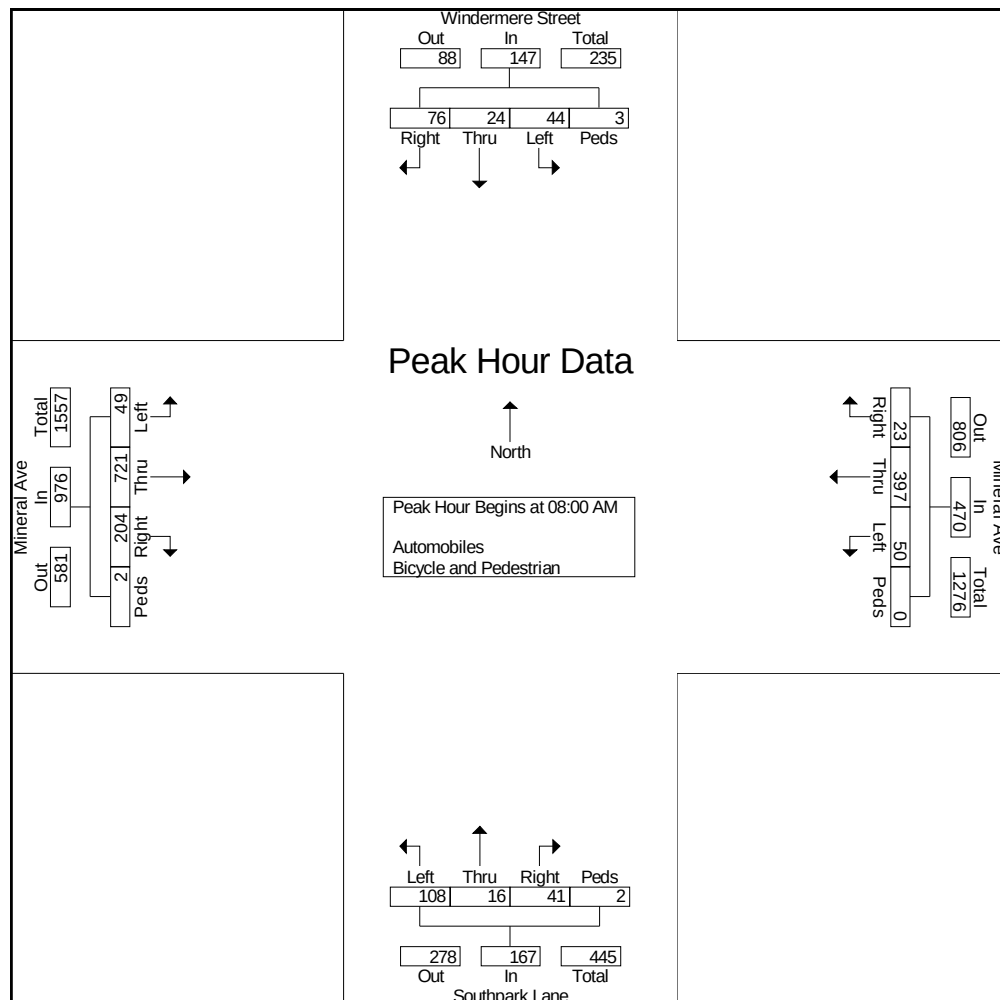


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Windermere St

File Name : Mineral Ave and Windermere St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Lane Northbound					Windermere Street 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 08:00 AM																					
08:00 AM	11	173	52	0	236	6	95	6	0	107	22	6	7	0	35	10	6	20	1	37	415
08:15 AM	11	191	54	0	256	12	87	7	0	106	26	3	11	1	41	15	4	14	1	34	437
08:30 AM	9	175	41	1	226	14	100	4	0	118	37	3	11	0	51	11	9	15	1	36	431
08:45 AM	18	182	57	1	258	18	115	6	0	139	23	4	12	1	40	8	5	27	0	40	477
Total Volume	49	721	204	2	976	50	397	23	0	470	108	16	41	2	167	44	24	76	3	147	1760
% App. Total	5	73.9	20.9	0.2		10.6	84.5	4.9	0		64.7	9.6	24.6	1.2		29.9	16.3	51.7	2		
PHF	.681	.944	.895	.500	.946	.694	.863	.821	.000	.845	.730	.667	.854	.500	.819	.733	.667	.704	.750	.919	.922





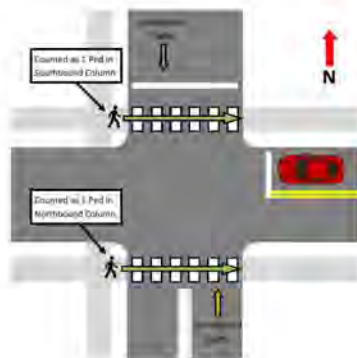
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Windermere St

File Name : Mineral Ave and Windermere St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Littleton, CO
 Littleton Mineral Ave Redevelopment
 PM Peak
 Mineral Ave and Windermere St

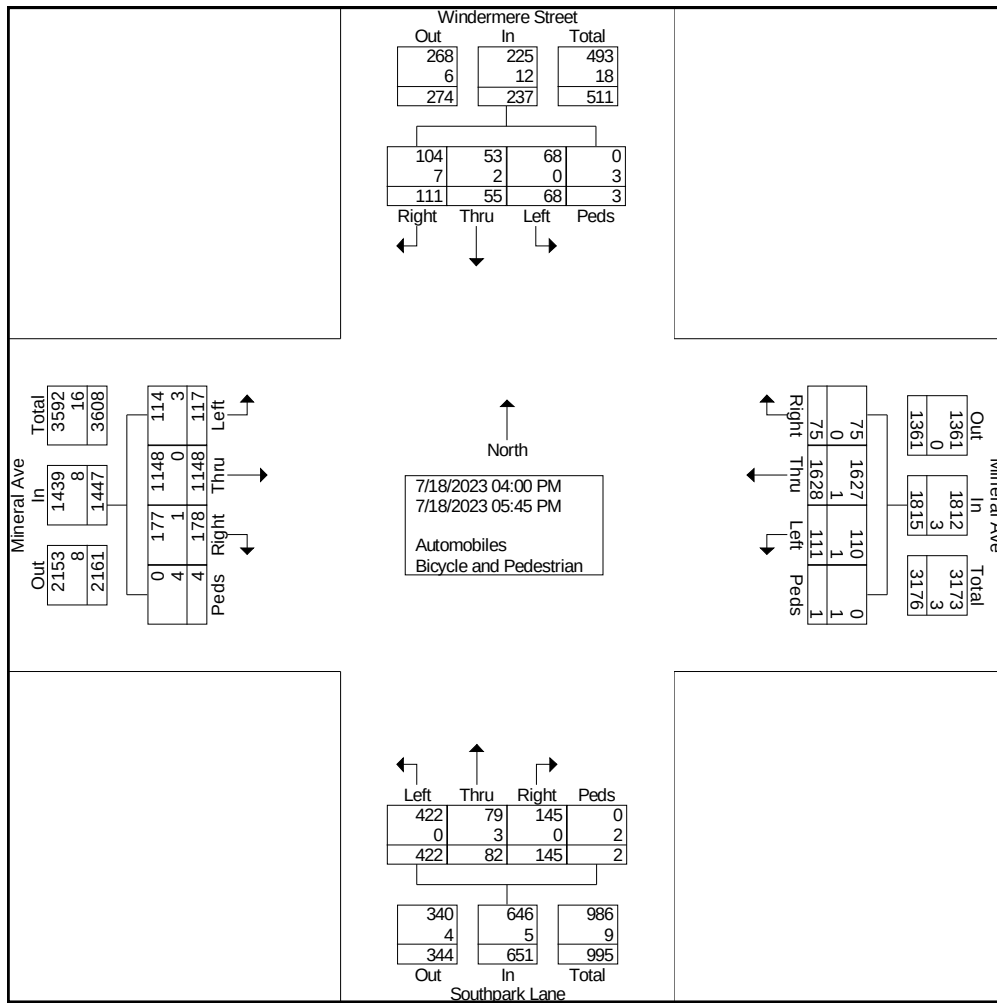
File Name : Mineral Ave and Windermere St PM
 Site Code : KHA 646
 Start Date : 7/18/2023
 Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Lane Northbound					Windermere Street 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	9	153	14	0	176	17	187	9	0	213	62	7	20	0	89	7	4	17	0	28	506
04:15 PM	19	133	20	0	172	14	186	7	0	207	48	8	18	0	74	5	5	15	1	26	479
04:30 PM	12	158	24	2	196	15	206	4	0	225	52	15	17	1	85	6	9	11	0	26	532
04:45 PM	13	124	26	0	163	13	203	11	0	227	39	13	15	0	67	6	12	13	0	31	488
Total	53	568	84	2	707	59	782	31	0	872	201	43	70	1	315	24	30	56	1	111	2005
05:00 PM	16	150	21	1	188	19	260	9	1	289	71	12	22	0	105	13	6	10	0	29	611
05:15 PM	7	162	18	0	187	16	216	12	0	244	71	14	18	0	103	12	7	13	1	33	567
05:30 PM	21	138	26	0	185	12	211	9	0	232	47	4	22	1	74	10	4	16	0	30	521
05:45 PM	20	130	29	1	180	5	159	14	0	178	32	9	13	0	54	9	8	16	1	34	446
Total	64	580	94	2	740	52	846	44	1	943	221	39	75	1	336	44	25	55	2	126	2145
Grand Total	117	1148	178	4	1447	111	1628	75	1	1815	422	82	145	2	651	68	55	111	3	237	4150
Apprch %	8.1	79.3	12.3	0.3		6.1	89.7	4.1	0.1		64.8	12.6	22.3	0.3		28.7	23.2	46.8	1.3		
Total %	2.8	27.7	4.3	0.1	34.9	2.7	39.2	1.8	0	43.7	10.2	2	3.5	0	15.7	1.6	1.3	2.7	0.1	5.7	
Automobiles	114	1148	177	0	1439	110	1627	75	0	1812	422	79	145	0	646	68	53	104	0	225	4122
% Automobiles	97.4	100	99.4	0	99.4	99.1	99.9	100	0	99.8	100	96.3	100	0	99.2	100	96.4	93.7	0	94.9	99.3
Bicycle and Pedestrian	3	0	1	4	8	1	1	0	1	3	0	3	0	2	5	0	2	7	3	12	28
% Bicycle and Pedestrian	2.6	0	0.6	100	0.6	0.9	0.1	0	100	0.2	0	3.7	0	100	0.8	0	3.6	6.3	100	5.1	0.7

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Windermere St

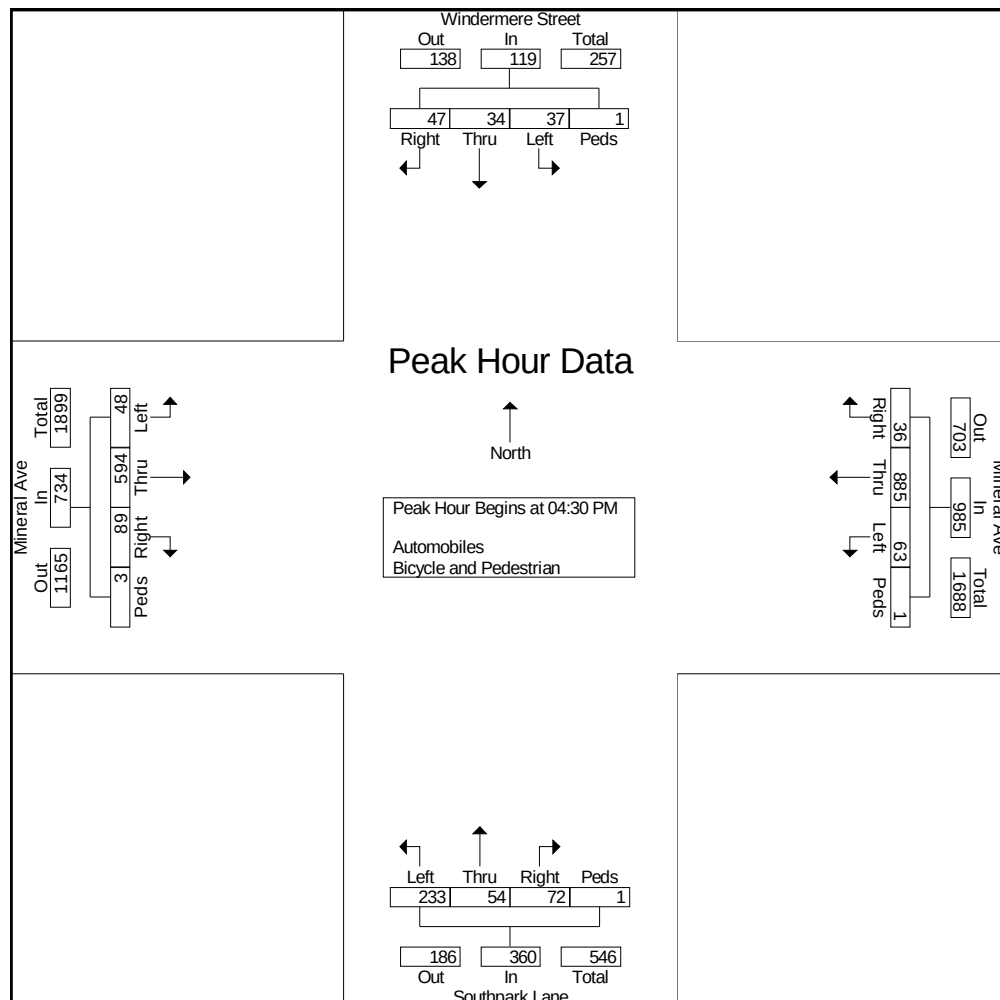
File Name : Mineral Ave and Windermere St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Windermere St

File Name : Mineral Ave and Windermere St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Lane Northbound					Windermere Street 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	12	158	24	2	196	15	206	4	0	225	52	15	17	1	85	6	9	11	0	26	532
04:45 PM	13	124	26	0	163	13	203	11	0	227	39	13	15	0	67	6	12	13	0	31	488
05:00 PM	16	150	21	1	188	19	260	9	1	289	71	12	22	0	105	13	6	10	0	29	611
05:15 PM	7	162	18	0	187	16	216	12	0	244	71	14	18	0	103	12	7	13	1	33	567
Total Volume	48	594	89	3	734	63	885	36	1	985	233	54	72	1	360	37	34	47	1	119	2198
% App. Total	6.5	80.9	12.1	0.4		6.4	89.8	3.7	0.1		64.7	15	20	0.3		31.1	28.6	39.5	0.8		
PHF	.750	.917	.856	.375	.936	.829	.851	.750	.250	.852	.820	.900	.818	.250	.857	.712	.708	.904	.250	.902	.899

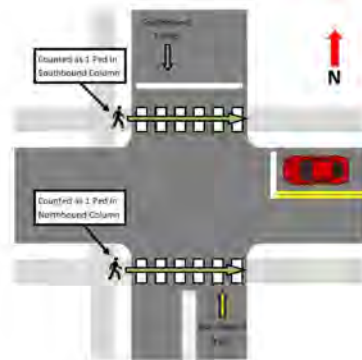


Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Windermere St

File Name : Mineral Ave and Windermere St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

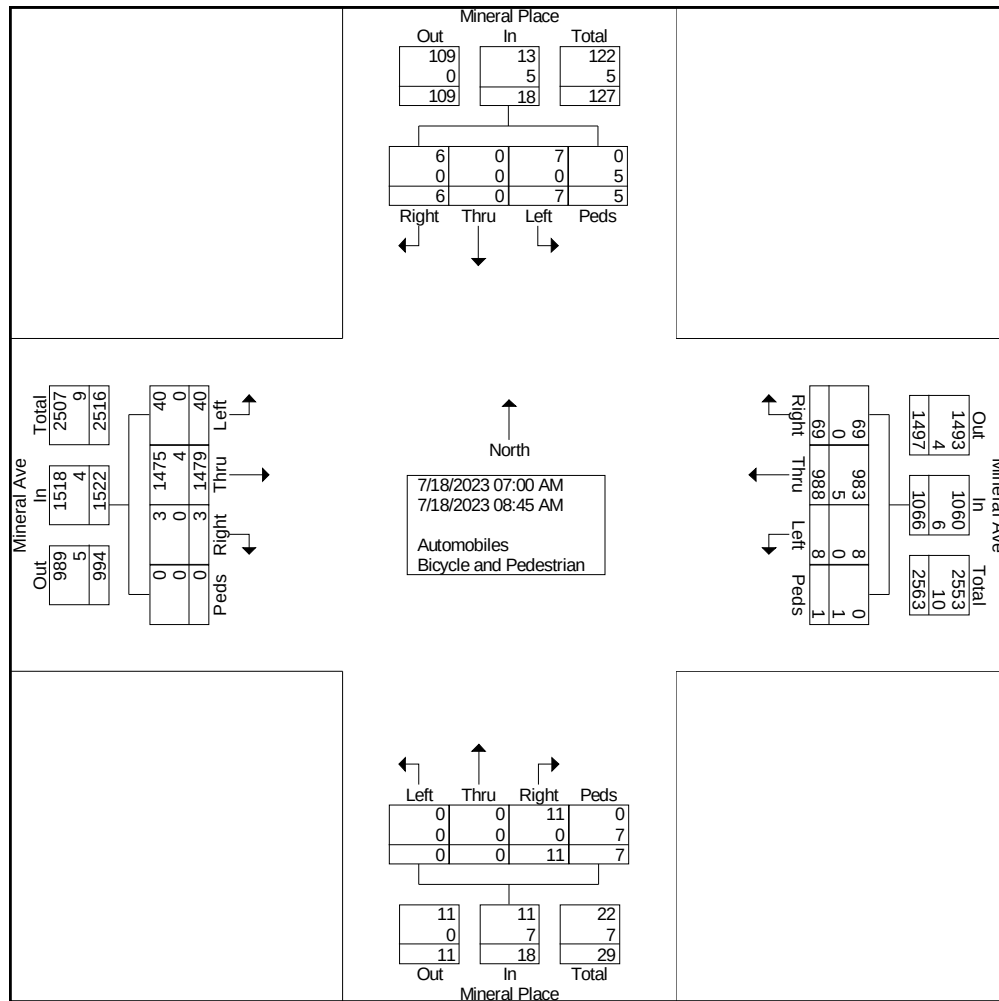
	Mineral Ave Eastbound					Mineral Ave Westbound					Mineral Place Northbound					Mineral Place Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	112	0	0	116	0	74	1	0	75	0	0	0	1	1	0	0	0	1	1	193
07:15 AM	4	162	1	0	167	1	103	11	1	116	0	0	1	1	2	0	0	0	2	2	287
07:30 AM	7	201	0	0	208	0	130	10	0	140	0	0	0	1	1	2	0	3	0	5	354
07:45 AM	13	204	0	0	217	0	132	17	0	149	0	0	0	1	1	1	0	0	0	1	368
Total	28	679	1	0	708	1	439	39	1	480	0	0	1	4	5	3	0	3	3	9	1202
08:00 AM	9	168	1	0	178	1	146	8	0	155	0	0	0	0	0	2	0	0	0	2	335
08:15 AM	2	214	1	0	217	3	131	7	0	141	0	0	3	2	5	1	0	3	1	5	368
08:30 AM	0	203	0	0	203	3	133	11	0	147	0	0	5	0	5	0	0	0	1	1	356
08:45 AM	1	215	0	0	216	0	139	4	0	143	0	0	2	1	3	1	0	0	0	1	363
Total	12	800	2	0	814	7	549	30	0	586	0	0	10	3	13	4	0	3	2	9	1422
Grand Total	40	1479	3	0	1522	8	988	69	1	1066	0	0	11	7	18	7	0	6	5	18	2624
Apprch %	2.6	97.2	0.2	0		0.8	92.7	6.5	0.1		0	0	61.1	38.9		38.9	0	33.3	27.8		
Total %	1.5	56.4	0.1	0	58	0.3	37.7	2.6	0	40.6	0	0	0.4	0.3	0.7	0.3	0	0.2	0.2	0.7	
Automobiles	40	1475	3	0	1518	8	983	69	0	1060	0	0	11	0	11	7	0	6	0	13	2602
% Automobiles	100	99.7	100	0	99.7	100	99.5	100	0	99.4	0	0	100	0	61.1	100	0	100	0	72.2	99.2
Bicycle and Pedestrian	0	4	0	0	4	0	5	0	1	6	0	0	0	7	7	0	0	0	5	5	22
% Bicycle and Pedestrian	0	0.3	0	0	0.3	0	0.5	0	100	0.6	0	0	0	100	38.9	0	0	0	100	27.8	0.8



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound				Mineral Ave Westbound				Mineral Place Northbound				Mineral Place Southbound			
	Left				Left				Left				Left			
Peak Hour Analysis From 07:00 AM to 08:45 AM- Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	204	0	0		0	132	0	149	0	0	0	1	1	1	0	0
08:00 AM	9	168		0	178	1	8	0	0	0	0	0	0	0	0	2
08:15 AM	2		1	0	217		131	7	0	141	0	0	3	1	0	
08:30 AM	0	203	0	0	203	3	133	11	0	147	0	0	0	5	0	1
	24	789	2	0	815	7	542	43	0	592	0	0	8	3	11	9
	29		0.2	0		1.2		7.3	0		0	0			0	
P+P				.939				.955			.550				.450	.969



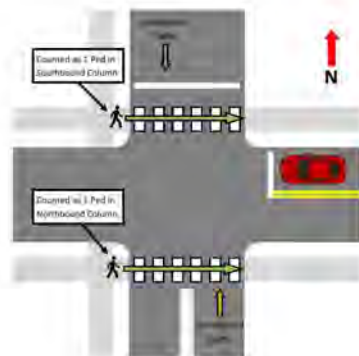
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

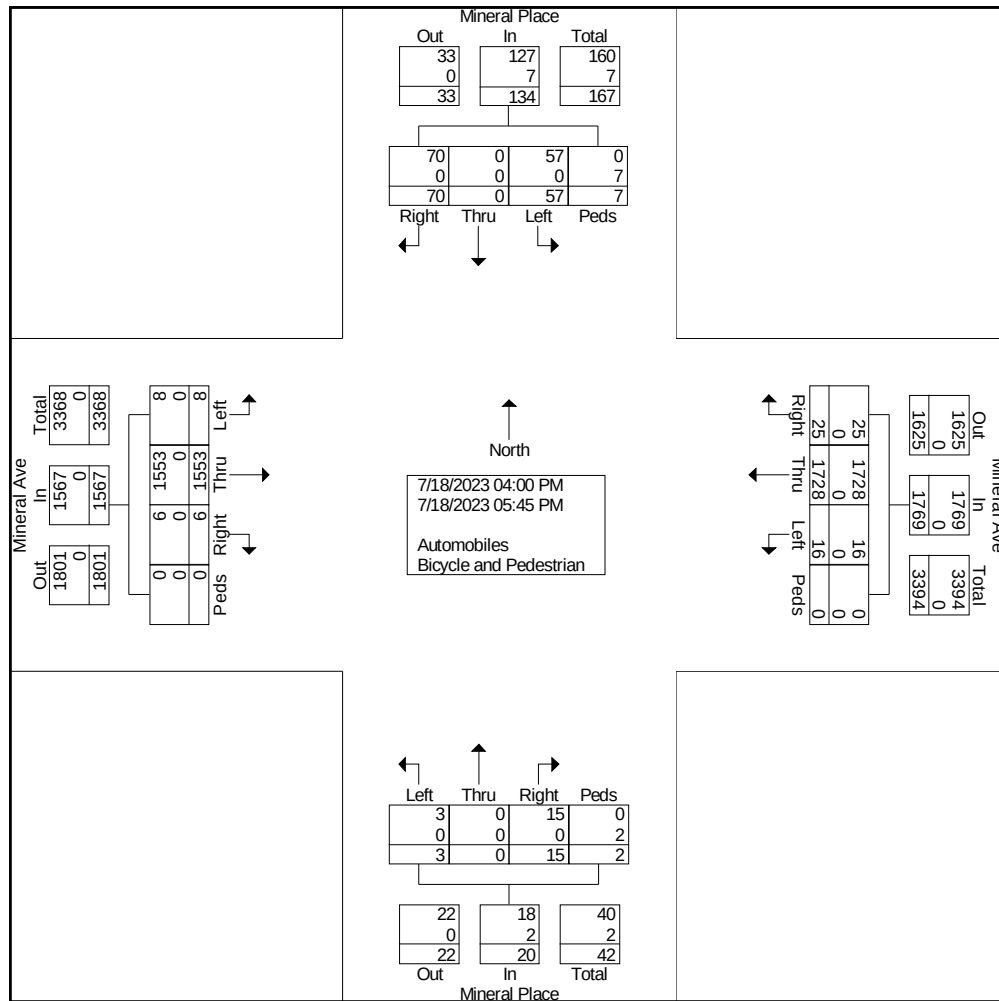
	Mineral Ave Eastbound					Mineral Ave Westbound					Mineral Place Northbound					Mineral Place Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	202	1	0	203	0	197	2	0	199	1	0	5	0	6	4	0	7	0	11	419
04:15 PM	1	176	1	0	178	2	199	1	0	202	0	0	0	0	0	1	0	7	0	8	388
04:30 PM	0	203	1	0	204	2	218	4	0	224	0	0	4	2	6	9	0	7	1	17	451
04:45 PM	1	186	0	0	187	1	226	5	0	232	0	0	0	0	0	4	0	7	1	12	431
Total	2	767	3	0	772	5	840	12	0	857	1	0	9	2	12	18	0	28	2	48	1689
05:00 PM	3	217	0	0	220	5	247	1	0	253	0	0	0	0	0	15	0	27	0	42	515
05:15 PM	0	208	1	0	209	3	249	2	0	254	1	0	1	0	2	12	0	12	3	27	492
05:30 PM	1	198	2	0	201	3	221	2	0	226	1	0	3	0	4	7	0	1	1	9	440
05:45 PM	2	163	0	0	165	0	171	8	0	179	0	0	2	0	2	5	0	2	1	8	354
Total	6	786	3	0	795	11	888	13	0	912	2	0	6	0	8	39	0	42	5	86	1801
Grand Total	8	1553	6	0	1567	16	1728	25	0	1769	3	0	15	2	20	57	0	70	7	134	3490
Apprch %	0.5	99.1	0.4	0		0.9	97.7	1.4	0		15	0	75	10		42.5	0	52.2	5.2		
Total %	0.2	44.5	0.2	0	44.9	0.5	49.5	0.7	0	50.7	0.1	0	0.4	0.1	0.6	1.6	0	2	0.2	3.8	
Automobiles	8	1553	6	0	1567	16	1728	25	0	1769	3	0	15	0	18	57	0	70	0	127	3481
% Automobiles	100	100	100	0	100	100	100	100	0	100	100	0	100	0	90	100	0	100	0	94.8	99.7
Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	7	7	9
% Bicycle and Pedestrian	0	0	0	0	0	0	0	0	0	0	0	0	0	100	10	0	0	0	100	5.2	0.3



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



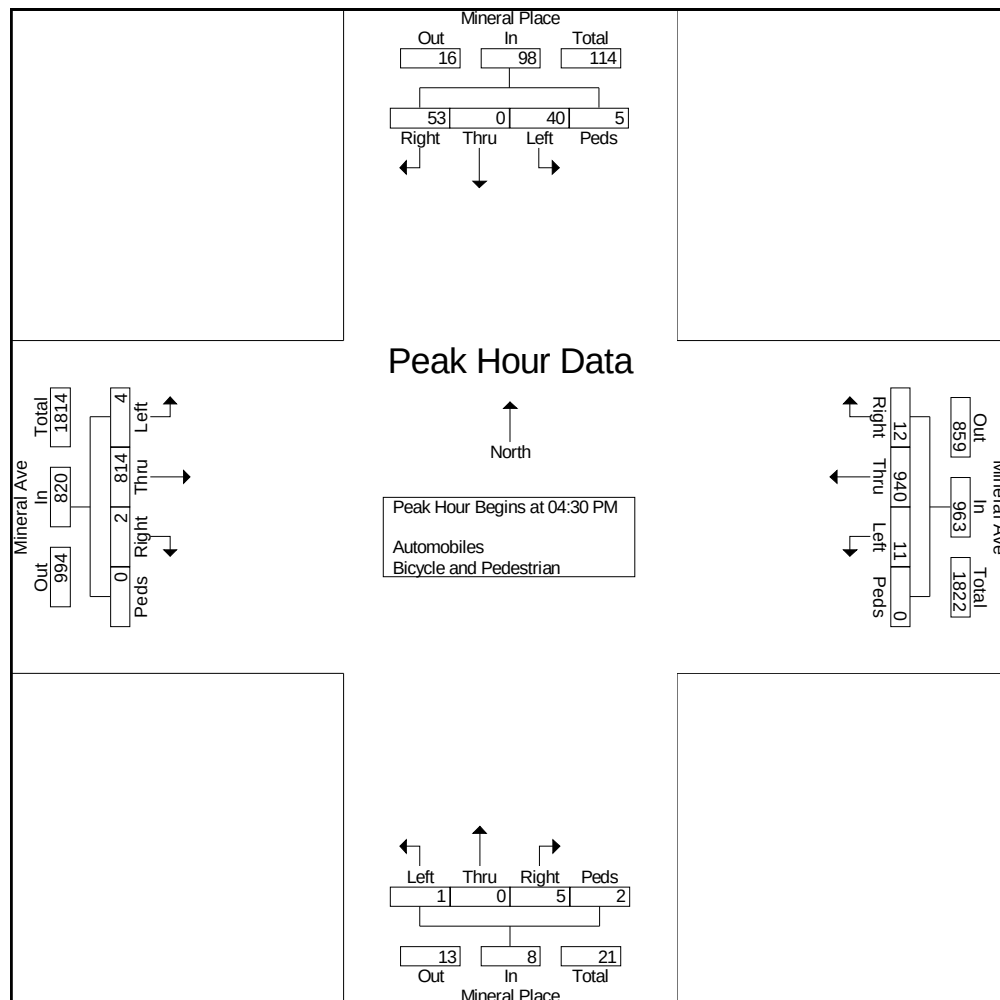


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Mineral Place Northbound					Mineral Place 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	0	203	1	0	204	2	218	4	0	224	0	0	4	2	6	9	0	7	1	17	451
04:45 PM	1	186	0	0	187	1	226	5	0	232	0	0	0	0	0	4	0	7	1	12	431
05:00 PM	3	217	0	0	220	5	247	1	0	253	0	0	0	0	0	15	0	27	0	42	515
05:15 PM	0	208	1	0	209	3	249	2	0	254	1	0	1	0	2	12	0	12	3	27	492
Total Volume	4	814	2	0	820	11	940	12	0	963	1	0	5	2	8	40	0	53	5	98	1889
% App. Total	0.5	99.3	0.2	0		1.1	97.6	1.2	0		12.5	0	62.5	25		40.8	0	54.1	5.1		
PHF	.333	.938	.500	.000	.932	.550	.944	.600	.000	.948	.250	.000	.313	.250	.333	.667	.000	.491	.417	.583	.917





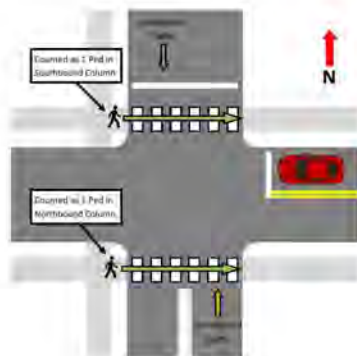
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Mineral Place

File Name : Mineral Ave and Mineral Place PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

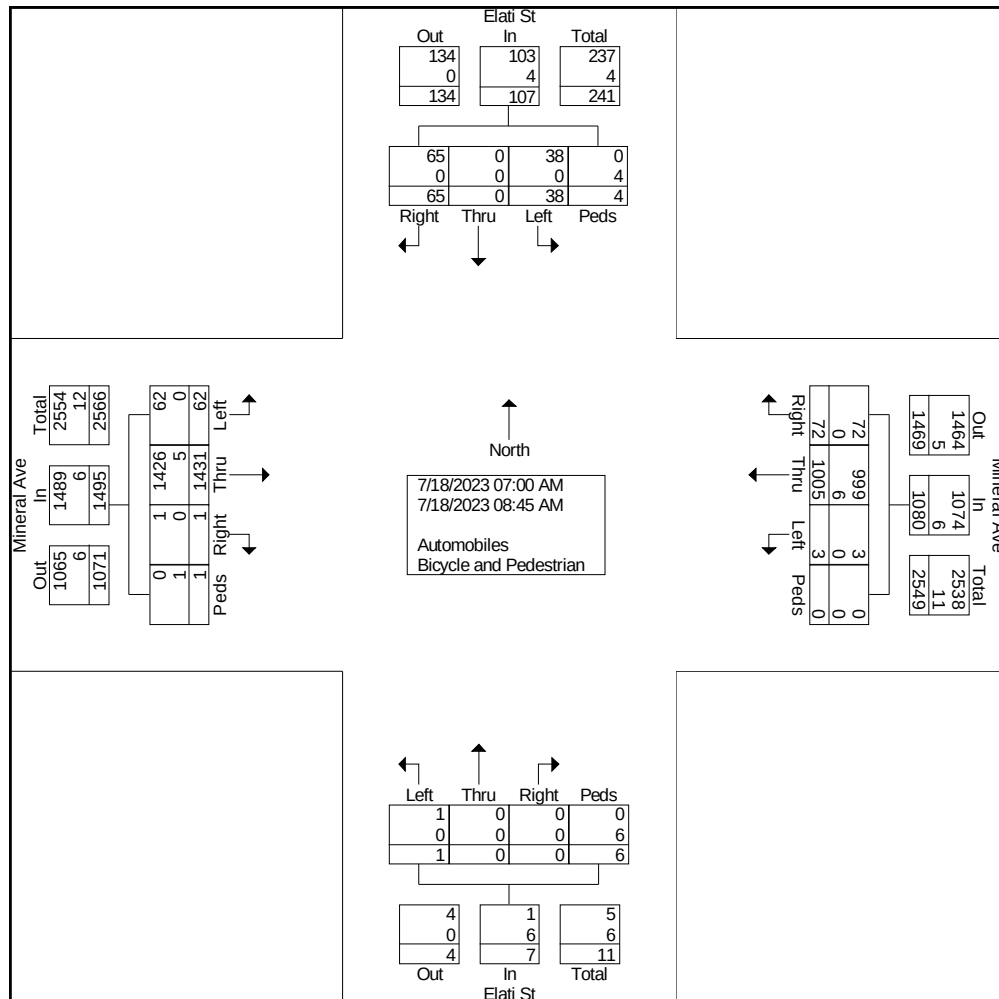
	Mineral Ave Eastbound					Mineral Ave Westbound					Elati St Northbound					Elati St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	112	0	0	116	0	71	4	0	75	0	0	0	1	1	4	0	6	1	11	203
07:15 AM	6	157	0	0	163	1	113	4	0	118	0	0	0	0	0	4	0	7	1	12	293
07:30 AM	5	198	0	0	203	0	132	4	0	136	0	0	0	2	2	4	0	11	0	15	356
07:45 AM	7	197	0	1	205	0	136	8	0	144	0	0	0	0	0	1	0	10	1	12	361
Total	22	664	0	1	687	1	452	20	0	473	0	0	0	3	3	13	0	34	3	50	1213
08:00 AM	9	163	0	0	172	1	146	12	0	159	0	0	0	0	0	5	0	10	0	15	346
08:15 AM	12	206	0	0	218	1	128	16	0	145	1	0	0	2	3	7	0	9	1	17	383
08:30 AM	9	197	1	0	207	0	145	11	0	156	0	0	0	0	0	4	0	3	0	7	370
08:45 AM	10	201	0	0	211	0	134	13	0	147	0	0	0	1	1	9	0	9	0	18	377
Total	40	767	1	0	808	2	553	52	0	607	1	0	0	3	4	25	0	31	1	57	1476
Grand Total	62	1431	1	1	1495	3	1005	72	0	1080	1	0	0	6	7	38	0	65	4	107	2689
Apprch %	4.1	95.7	0.1	0.1		0.3	93.1	6.7	0		14.3	0	0	85.7		35.5	0	60.7	3.7		
Total %	2.3	53.2	0	0	55.6	0.1	37.4	2.7	0	40.2	0	0	0	0.2	0.3	1.4	0	2.4	0.1	4	
Automobiles	62	1426	1	0	1489	3	999	72	0	1074	1	0	0	0	1	38	0	65	0	103	2667
% Automobiles	100	99.7	100	0	99.6	100	99.4	100	0	99.4	100	0	0	0	14.3	100	0	100	0	96.3	99.2
Bicycle and Pedestrian	0	5	0	1	6	0	6	0	0	6	0	0	0	6	6	0	0	0	4	4	22
% Bicycle and Pedestrian	0	0.3	0	100	0.4	0	0.6	0	0	0.6	0	0	0	100	85.7	0	0	0	100	3.7	0.8



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



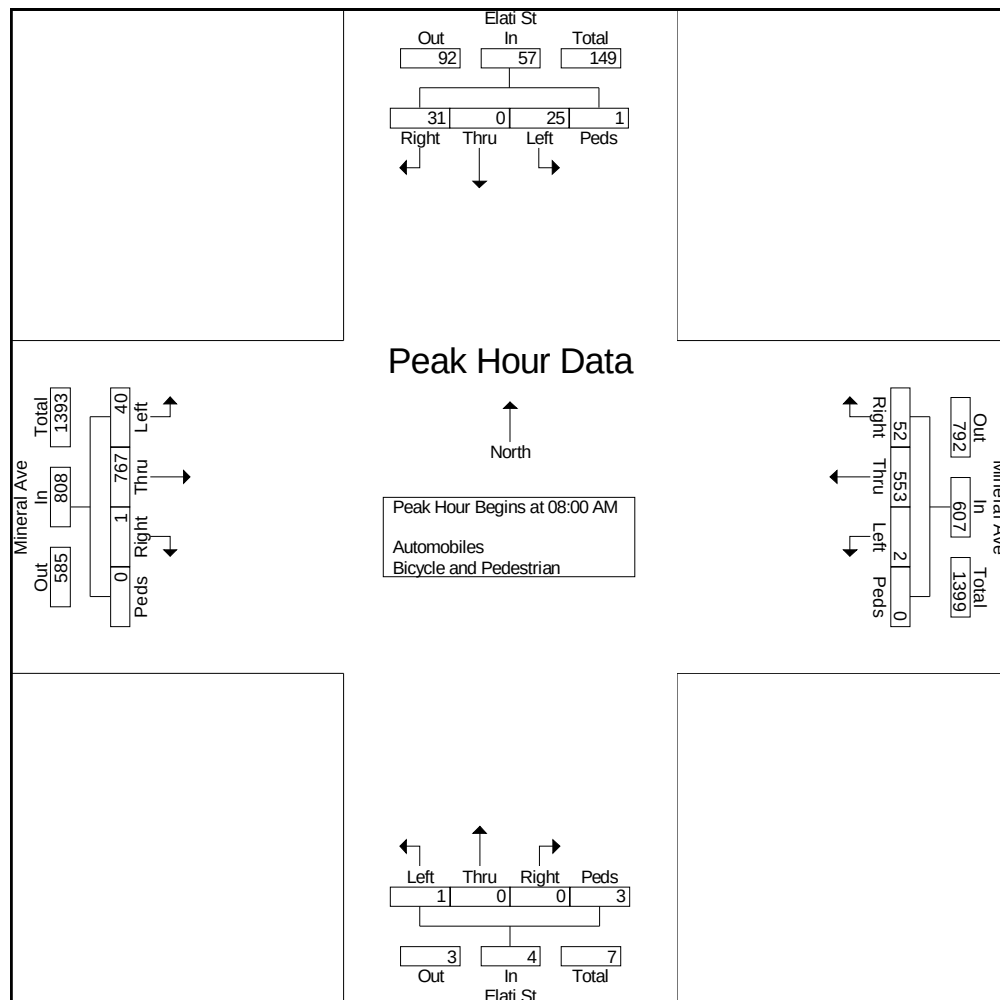


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Elati St Northbound					Elati St 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 08:00 AM																					
08:00 AM	9	163	0	0	172	1	146	12	0	159	0	0	0	0	0	5	0	10	0	15	346
08:15 AM	12	206	0	0	218	1	128	16	0	145	1	0	0	2	3	7	0	9	1	17	383
08:30 AM	9	197	1	0	207	0	145	11	0	156	0	0	0	0	0	4	0	3	0	7	370
08:45 AM	10	201	0	0	211	0	134	13	0	147	0	0	0	1	1	9	0	9	0	18	377
Total Volume	40	767	1	0	808	2	553	52	0	607	1	0	0	3	4	25	0	31	1	57	1476
% App. Total	5	94.9	0.1	0		0.3	91.1	8.6	0		25	0	0	75		43.9	0	54.4	1.8		
PHF	.833	.931	.250	.000	.927	.500	.947	.813	.000	.954	.250	.000	.000	.375	.333	.694	.000	.775	.250	.792	.963





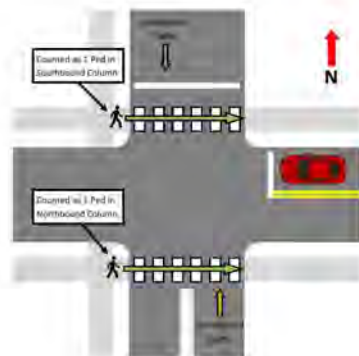
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

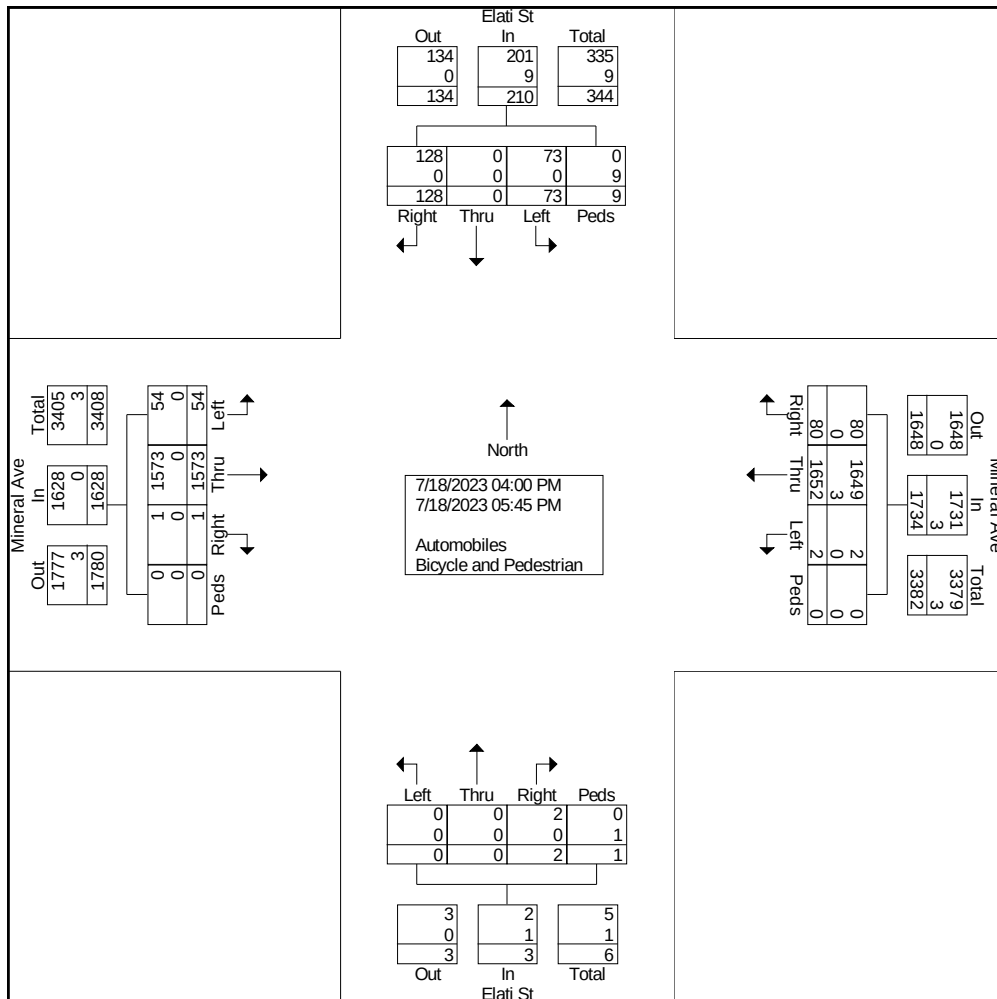
	Mineral Ave Eastbound					Mineral Ave Westbound					Elati St Northbound					Elati St Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	4	200	0	0	204	1	196	14	0	211	0	0	0	0	0	10	0	5	0	15	430
04:15 PM	5	181	0	0	186	0	186	10	0	196	0	0	0	0	0	17	0	11	0	28	410
04:30 PM	1	207	1	0	209	0	210	6	0	216	0	0	0	1	1	6	0	19	2	27	453
04:45 PM	11	186	0	0	197	0	216	11	0	227	0	0	0	0	0	9	0	19	1	29	453
Total	21	774	1	0	796	1	808	41	0	850	0	0	0	1	1	42	0	54	3	99	1746
05:00 PM	7	223	0	0	230	0	223	9	0	232	0	0	1	0	1	7	0	26	0	33	496
05:15 PM	8	216	0	0	224	0	233	4	0	237	0	0	1	0	1	9	0	31	4	44	506
05:30 PM	5	196	0	0	201	0	211	12	0	223	0	0	0	0	0	7	0	8	1	16	440
05:45 PM	13	164	0	0	177	1	177	14	0	192	0	0	0	0	0	8	0	9	1	18	387
Total	33	799	0	0	832	1	844	39	0	884	0	0	2	0	2	31	0	74	6	111	1829
Grand Total	54	1573	1	0	1628	2	1652	80	0	1734	0	0	2	1	3	73	0	128	9	210	3575
Apprch %	3.3	96.6	0.1	0		0.1	95.3	4.6	0		0	0	66.7	33.3		34.8	0	61	4.3		
Total %	1.5	44	0	0	45.5	0.1	46.2	2.2	0	48.5	0	0	0.1	0	0.1	2	0	3.6	0.3	5.9	
Automobiles	54	1573	1	0	1628	2	1649	80	0	1731	0	0	2	0	2	73	0	128	0	201	3562
% Automobiles	100	100	100	0	100	100	99.8	100	0	99.8	0	0	100	0	66.7	100	0	100	0	95.7	99.6
Bicycle and Pedestrian	0	0	0	0	0	0	3	0	0	3	0	0	0	1	1	0	0	0	9	9	13
% Bicycle and Pedestrian	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	100	33.3	0	0	0	100	4.3	0.4



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



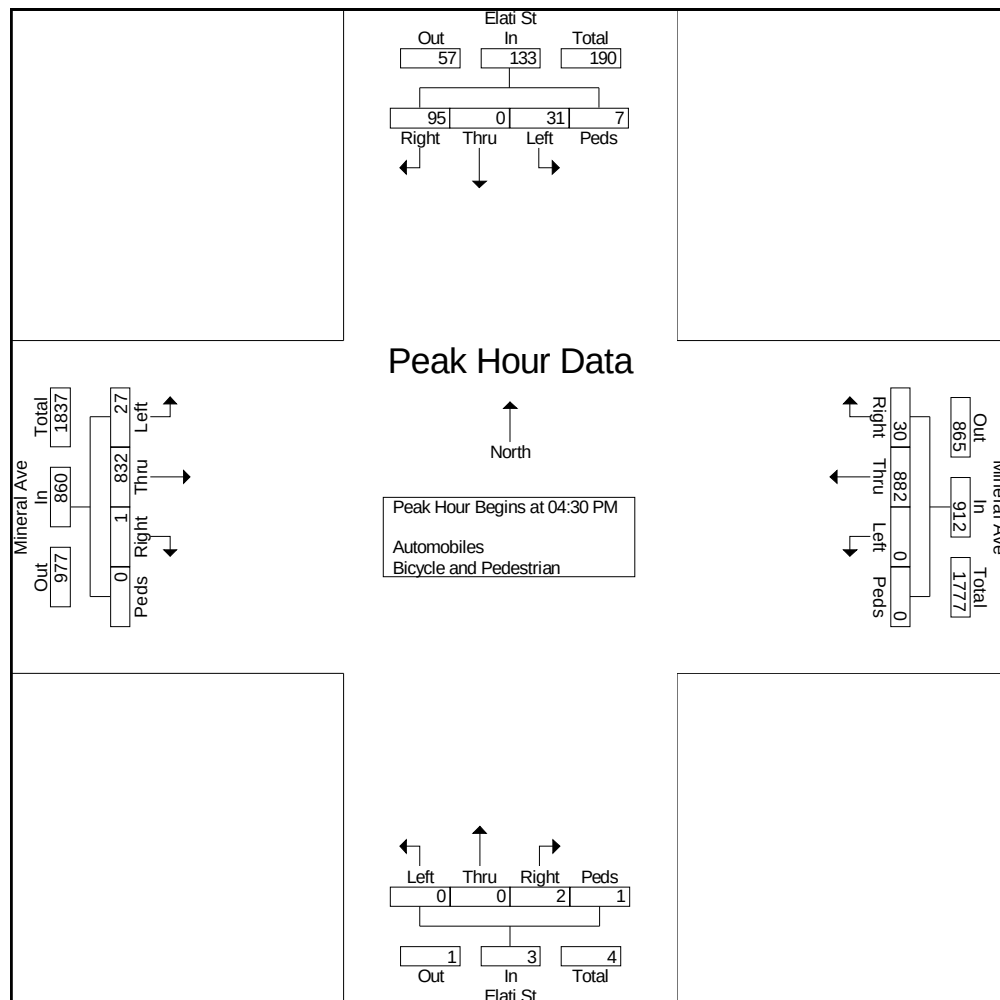


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Elati St Northbound					Elati St 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	1	207	1	0	209	0	210	6	0	216	0	0	0	1	1	6	0	19	2	27	453
04:45 PM	11	186	0	0	197	0	216	11	0	227	0	0	0	0	0	9	0	19	1	29	453
05:00 PM	7	223	0	0	230	0	223	9	0	232	0	0	1	0	1	7	0	26	0	33	496
05:15 PM	8	216	0	0	224	0	233	4	0	237	0	0	1	0	1	9	0	31	4	44	506
Total Volume	27	832	1	0	860	0	882	30	0	912	0	0	2	1	3	31	0	95	7	133	1908
% App. Total	3.1	96.7	0.1	0		0	96.7	3.3	0		0	0	66.7	33.3		23.3	0	71.4	5.3		
PHF	.614	.933	.250	.000	.935	.000	.946	.682	.000	.962	.000	.000	.500	.250	.750	.861	.000	.766	.438	.756	.943





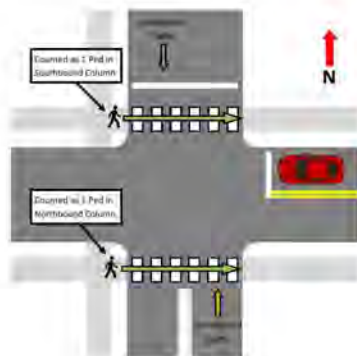
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and Elati St

File Name : Mineral Ave and Elati St PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 1

Groups Printed- Autos - Bike & Ped

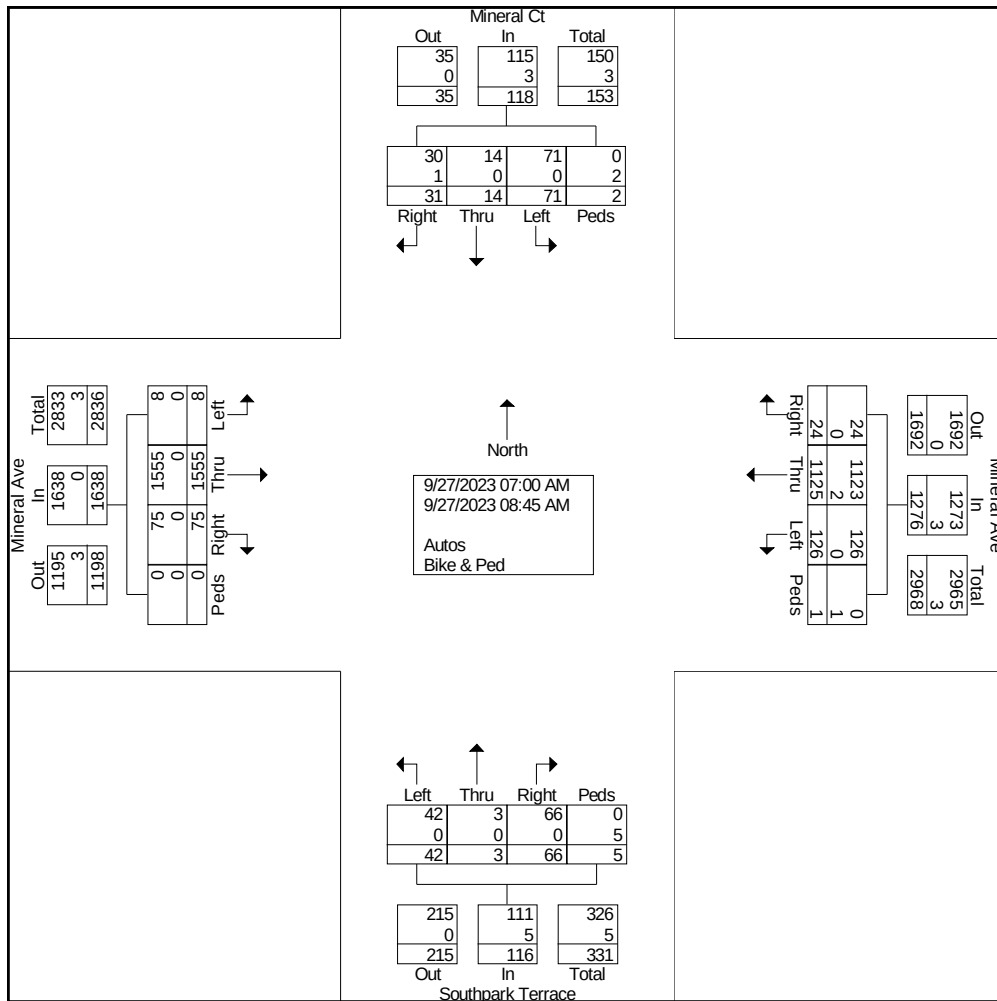
	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Terrace Northbound					Mineral Ct Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	134	10	0	145	6	94	2	0	102	5	0	4	0	9	8	0	1	0	9	265
07:15 AM	1	158	10	0	169	8	142	3	0	153	7	1	6	0	14	3	3	6	0	12	348
07:30 AM	0	192	9	0	201	15	131	1	0	147	6	0	6	1	13	13	3	7	0	23	384
07:45 AM	1	229	11	0	241	42	166	3	0	211	6	1	5	1	13	8	3	3	0	14	479
Total	3	713	40	0	756	71	533	9	0	613	24	2	21	2	49	32	9	17	0	58	1476
08:00 AM	1	261	11	0	273	9	157	3	0	169	9	0	7	1	17	11	2	4	1	18	477
08:15 AM	1	189	6	0	196	17	151	5	0	173	4	0	9	0	13	10	0	1	0	11	393
08:30 AM	0	186	7	0	193	14	130	2	1	147	2	0	11	1	14	9	0	6	1	16	370
08:45 AM	3	206	11	0	220	15	154	5	0	174	3	1	18	1	23	9	3	3	0	15	432
Total	5	842	35	0	882	55	592	15	1	663	18	1	45	3	67	39	5	14	2	60	1672
Grand Total	8	1555	75	0	1638	126	1125	24	1	1276	42	3	66	5	116	71	14	31	2	118	3148
Apprch %	0.5	94.9	4.6	0		9.9	88.2	1.9	0.1		36.2	2.6	56.9	4.3		60.2	11.9	26.3	1.7		
Total %	0.3	49.4	2.4	0	52	4	35.7	0.8	0	40.5	1.3	0.1	2.1	0.2	3.7	2.3	0.4	1	0.1	3.7	
Autos	8	1555	75	0	1638	126	1123	24	0	1273	42	3	66	0	111	71	14	30	0	115	3137
% Autos	100	100	100	0	100	100	99.8	100	0	99.8	100	100	100	0	95.7	100	100	96.8	0	97.5	99.7
Bike & Ped	0	0	0	0	0	0	2	0	1	3	0	0	0	5	5	0	0	1	2	3	11
% Bike & Ped	0	0	0	0	0	0	0.2	0	100	0.2	0	0	0	100	4.3	0	0	3.2	100	2.5	0.3



Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 2



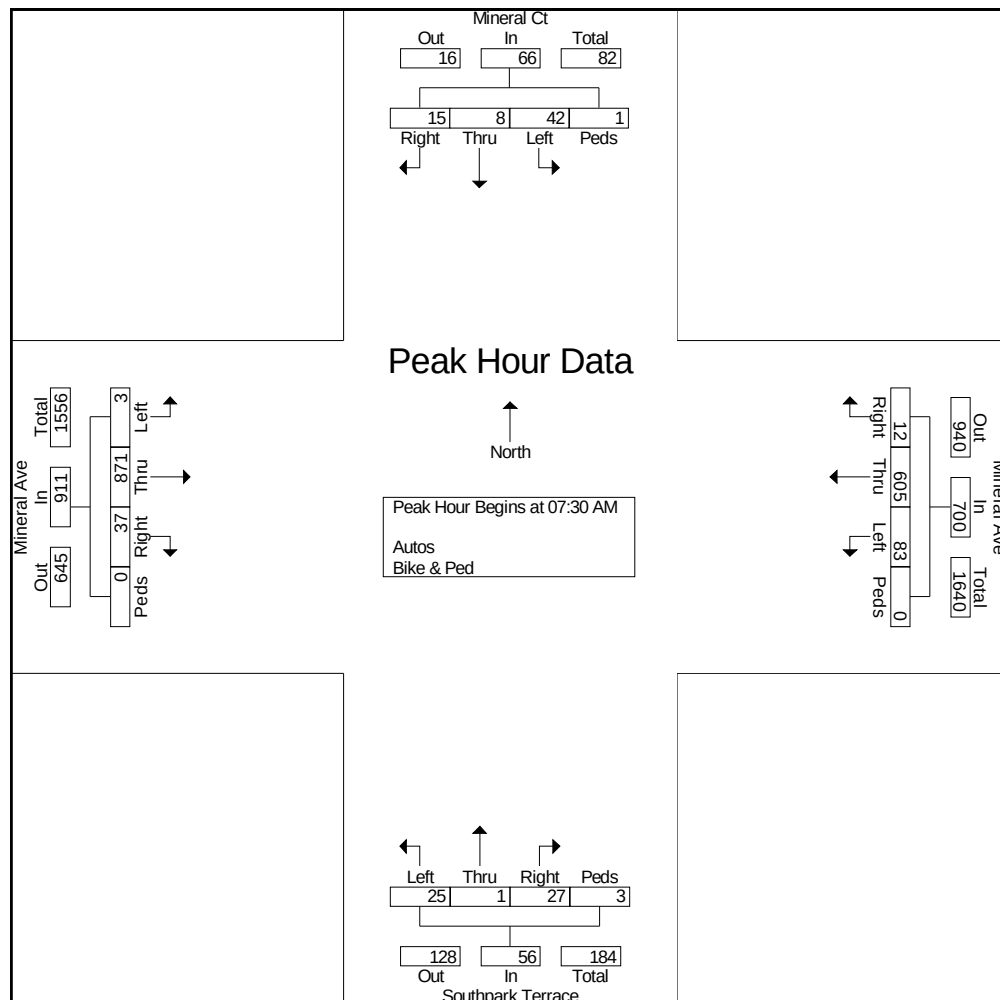


Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Terrace Northbound					Mineral Ct 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	0	192	9	0	201	15	131	1	0	147	6	0	6	1	13	13	3	7	0	23	384
07:45 AM	1	229	11	0	241	42	166	3	0	211	6	1	5	1	13	8	3	3	0	14	479
08:00 AM	1	261	11	0	273	9	157	3	0	169	9	0	7	1	17	11	2	4	1	18	477
08:15 AM	1	189	6	0	196	17	151	5	0	173	4	0	9	0	13	10	0	1	0	11	393
Total Volume	3	871	37	0	911	83	605	12	0	700	25	1	27	3	56	42	8	15	1	66	1733
% App. Total	0.3	95.6	4.1	0		11.9	86.4	1.7	0		44.6	1.8	48.2	5.4		63.6	12.1	22.7	1.5		
PHF	.750	.834	.841	.000	.834	.494	.911	.600	.000	.829	.694	.250	.750	.750	.824	.808	.667	.536	.250	.717	.904





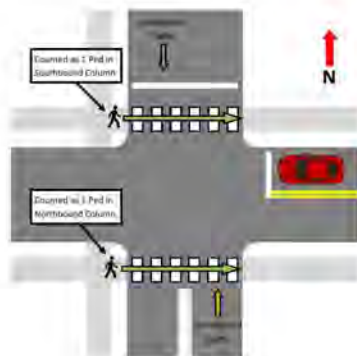
Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 1

Groups Printed- Autos - Bike & Ped

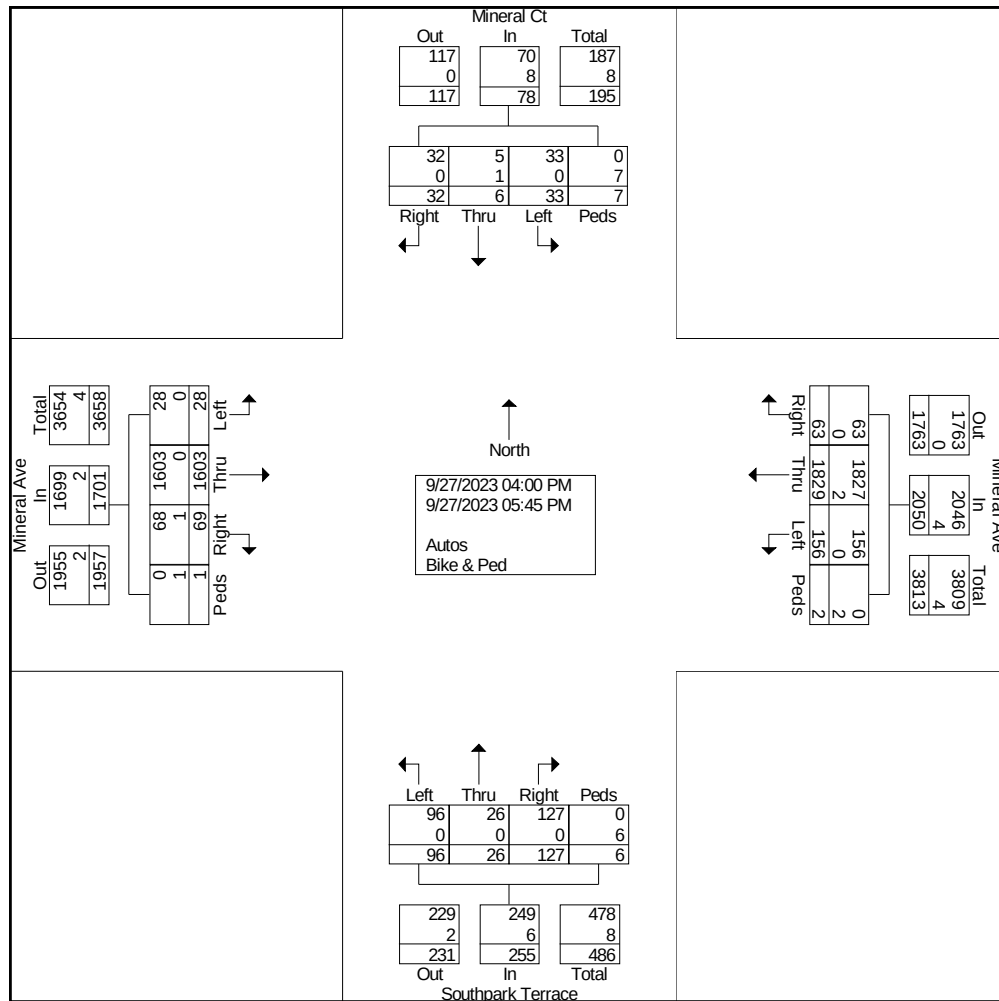
	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Terrace Northbound					Mineral Ct Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	3	195	5	0	203	18	228	3	0	249	10	1	8	1	20	3	1	4	0	8	480
04:15 PM	1	220	9	0	230	22	212	7	0	241	8	6	22	1	37	3	1	2	1	7	515
04:30 PM	4	189	17	0	210	22	260	3	0	285	13	4	24	0	41	5	0	3	2	10	546
04:45 PM	5	192	6	0	203	15	223	7	0	245	12	4	11	0	27	5	1	3	3	12	487
Total	13	796	37	0	846	77	923	20	0	1020	43	15	65	2	125	16	3	12	6	37	2028
05:00 PM	6	218	11	0	235	25	232	18	0	275	13	0	14	2	29	2	0	4	0	6	545
05:15 PM	5	221	5	1	232	20	245	9	1	275	19	6	21	0	46	4	1	4	1	10	563
05:30 PM	2	197	10	0	209	18	216	6	0	240	12	3	16	1	32	3	1	6	0	10	491
05:45 PM	2	171	6	0	179	16	213	10	1	240	9	2	11	1	23	8	1	6	0	15	457
Total	15	807	32	1	855	79	906	43	2	1030	53	11	62	4	130	17	3	20	1	41	2056
Grand Total	28	1603	69	1	1701	156	1829	63	2	2050	96	26	127	6	255	33	6	32	7	78	4084
Apprch %	1.6	94.2	4.1	0.1		7.6	89.2	3.1	0.1		37.6	10.2	49.8	2.4		42.3	7.7	41	9		
Total %	0.7	39.3	1.7	0	41.7	3.8	44.8	1.5	0	50.2	2.4	0.6	3.1	0.1	6.2	0.8	0.1	0.8	0.2	1.9	
Autos	28	1603	68	0	1699	156	1827	63	0	2046	96	26	127	0	249	33	5	32	0	70	4064
% Autos	100	100	98.6	0	99.9	100	99.9	100	0	99.8	100	100	100	0	97.6	100	83.3	100	0	89.7	99.5
Bike & Ped	0	0	1	1	2	0	2	0	2	4	0	0	0	6	6	0	1	0	7	8	20
% Bike & Ped	0	0	1.4	100	0.1	0	0.1	0	100	0.2	0	0	0	100	2.4	0	16.7	0	100	10.3	0.5



Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 2



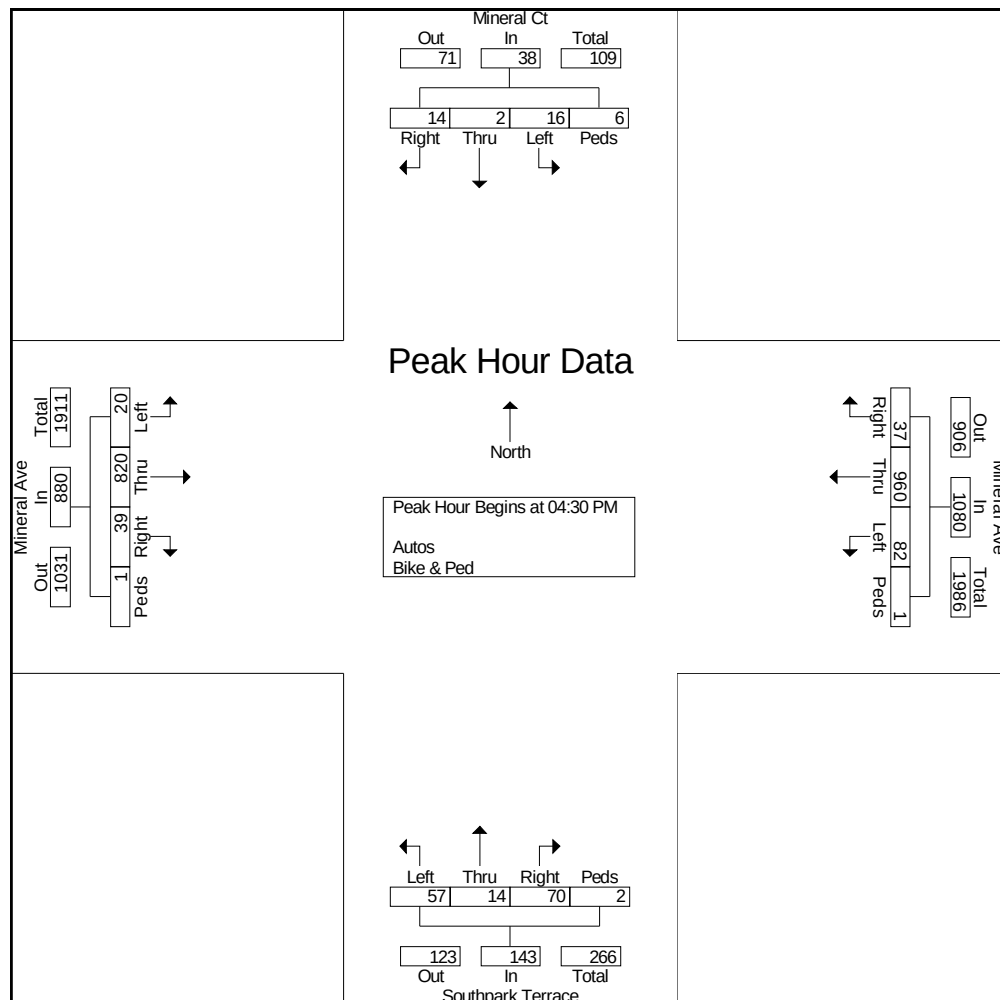


Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					Southpark Terrace Northbound					Mineral Ct 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	189	17	0	210	22	260	3	0	285	13	4	24	0	41	5	0	3	2	10	546
04:45 PM	5	192	6	0	203	15	223	7	0	245	12	4	11	0	27	5	1	3	3	12	487
05:00 PM	6	218	11	0	235	25	232	18	0	275	13	0	14	2	29	2	0	4	0	6	545
05:15 PM	5	221	5	1	232	20	245	9	1	275	19	6	21	0	46	4	1	4	1	10	563
Total Volume	20	820	39	1	880	82	960	37	1	1080	57	14	70	2	143	16	2	14	6	38	2141
% App. Total	2.3	93.2	4.4	0.1		7.6	88.9	3.4	0.1		39.9	9.8	49	1.4		42.1	5.3	36.8	15.8		
PHF	.833	.928	.574	.250	.936	.820	.923	.514	.250	.947	.750	.583	.729	.250	.777	.800	.500	.875	.500	.792	.951





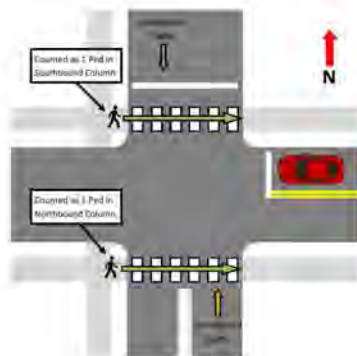
Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
Mineral Ave & Southpark Terrace

File Name : Mineral Ave & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and 150 Mineral Ave

File Name : Mineral Ave and 150 Mineral Ave AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

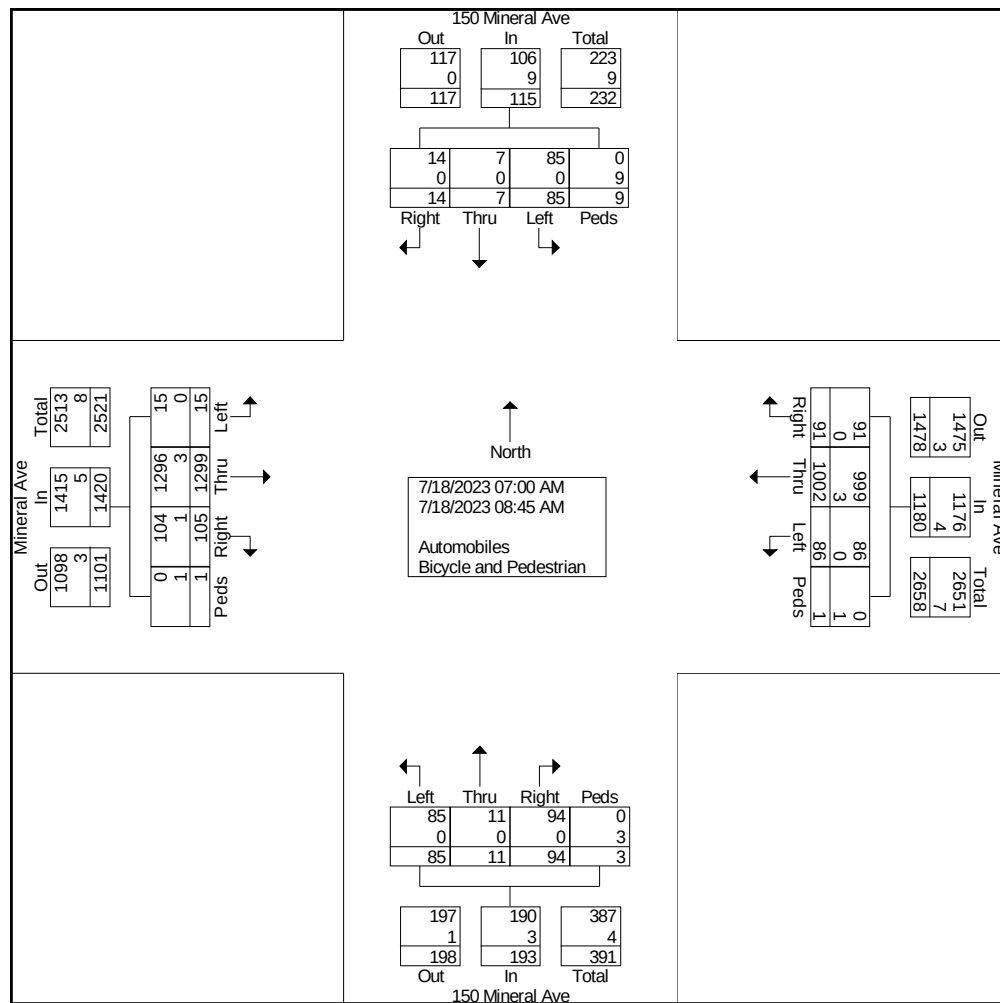
	Mineral Ave Eastbound					Mineral Ave Westbound					150 Mineral Ave Northbound					150 Mineral Ave Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	110	6	1	118	12	71	8	0	91	8	0	4	0	12	11	1	1	1	14	235
07:15 AM	0	144	8	0	152	9	106	16	0	131	11	1	8	0	20	6	0	1	2	9	312
07:30 AM	0	184	11	0	195	7	132	7	0	146	9	0	10	3	22	9	0	2	4	15	378
07:45 AM	4	173	17	0	194	10	144	11	0	165	9	1	13	0	23	5	0	0	2	7	389
Total	5	611	42	1	659	38	453	42	0	533	37	2	35	3	77	31	1	4	9	45	1314
08:00 AM	0	150	12	0	162	16	136	12	0	164	11	1	7	0	19	12	0	1	0	13	358
08:15 AM	3	181	15	0	199	8	137	16	1	162	9	2	13	0	24	14	1	2	0	17	402
08:30 AM	5	182	17	0	204	9	147	5	0	161	13	1	14	0	28	13	4	3	0	20	413
08:45 AM	2	175	19	0	196	15	129	16	0	160	15	5	25	0	45	15	1	4	0	20	421
Total	10	688	63	0	761	48	549	49	1	647	48	9	59	0	116	54	6	10	0	70	1594
Grand Total	15	1299	105	1	1420	86	1002	91	1	1180	85	11	94	3	193	85	7	14	9	115	2908
Apprch %	1.1	91.5	7.4	0.1		7.3	84.9	7.7	0.1		44	5.7	48.7	1.6		73.9	6.1	12.2	7.8		
Total %	0.5	44.7	3.6	0	48.8	3	34.5	3.1	0	40.6	2.9	0.4	3.2	0.1	6.6	2.9	0.2	0.5	0.3	4	
Automobiles	15	1296	104	0	1415	86	999	91	0	1176	85	11	94	0	190	85	7	14	0	106	2887
% Automobiles	100	99.8	99	0	99.6	100	99.7	100	0	99.7	100	100	100	0	98.4	100	100	100	0	92.2	99.3
Bicycle and Pedestrian	0	3	1	1	5	0	3	0	1	4	0	0	0	3	3	0	0	0	9	9	21
% Bicycle and Pedestrian	0	0.2	1	100	0.4	0	0.3	0	100	0.3	0	0	0	100	1.6	0	0	0	100	7.8	0.7



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and 150 Mineral Ave

File Name : Mineral Ave and 150 Mineral Ave AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



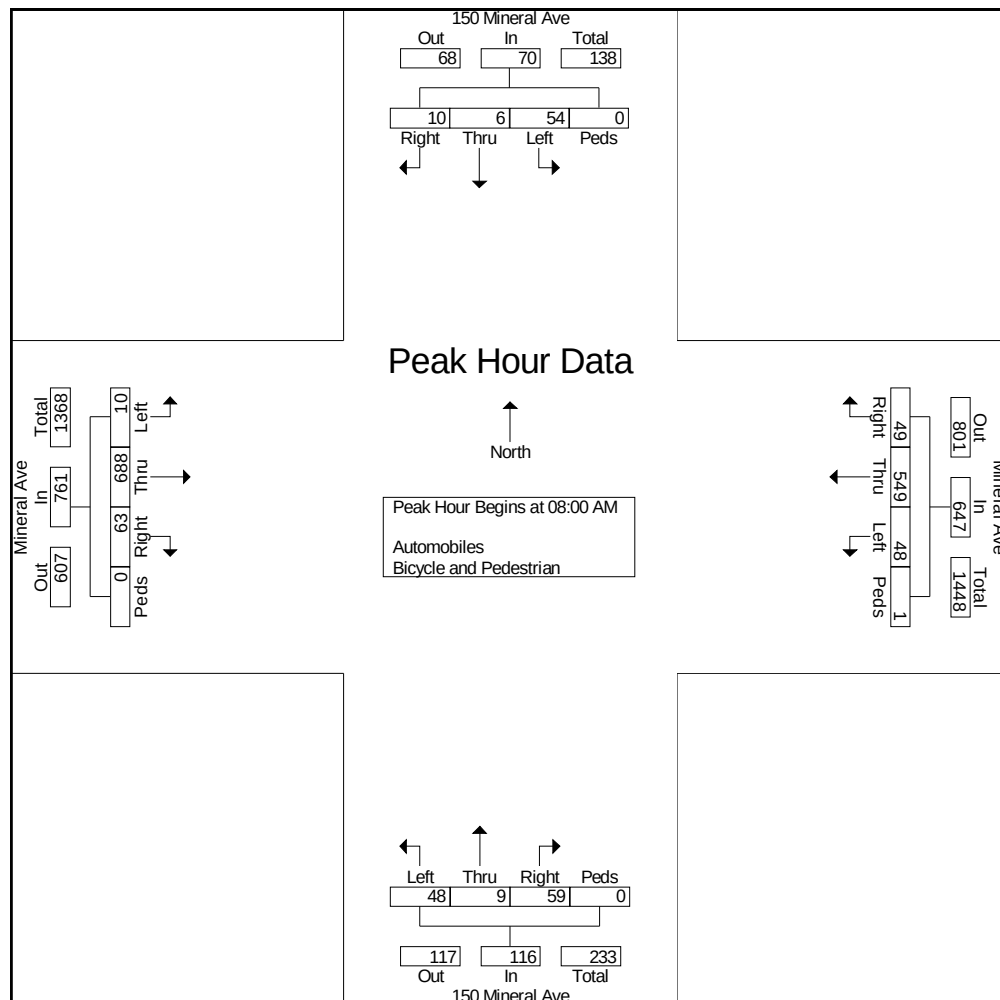


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and 150 Mineral Ave

File Name : Mineral Ave and 150 Mineral Ave AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					150 Mineral Ave Northbound					150 Mineral Ave 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 08:00 AM																					
08:00 AM	0	150	12	0	162	16	136	12	0	164	11	1	7	0	19	12	0	1	0	13	358
08:15 AM	3	181	15	0	199	8	137	16	1	162	9	2	13	0	24	14	1	2	0	17	402
08:30 AM	5	182	17	0	204	9	147	5	0	161	13	1	14	0	28	13	4	3	0	20	413
08:45 AM	2	175	19	0	196	15	129	16	0	160	15	5	25	0	45	15	1	4	0	20	421
Total Volume	10	688	63	0	761	48	549	49	1	647	48	9	59	0	116	54	6	10	0	70	1594
% App. Total	1.3	90.4	8.3	0		7.4	84.9	7.6	0.2		41.4	7.8	50.9	0		77.1	8.6	14.3	0		
PHF	.500	.945	.829	.000	.933	.750	.934	.766	.250	.986	.800	.450	.590	.000	.644	.900	.375	.625	.000	.875	.947





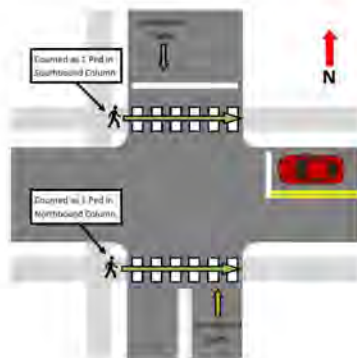
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Mineral Ave and 150 Mineral Ave

File Name : Mineral Ave and 150 Mineral Ave AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Littleton, CO
 Littleton Mineral Ave Redevelopment
 PM Peak
 Mineral Ave and 150 Mineral Ave

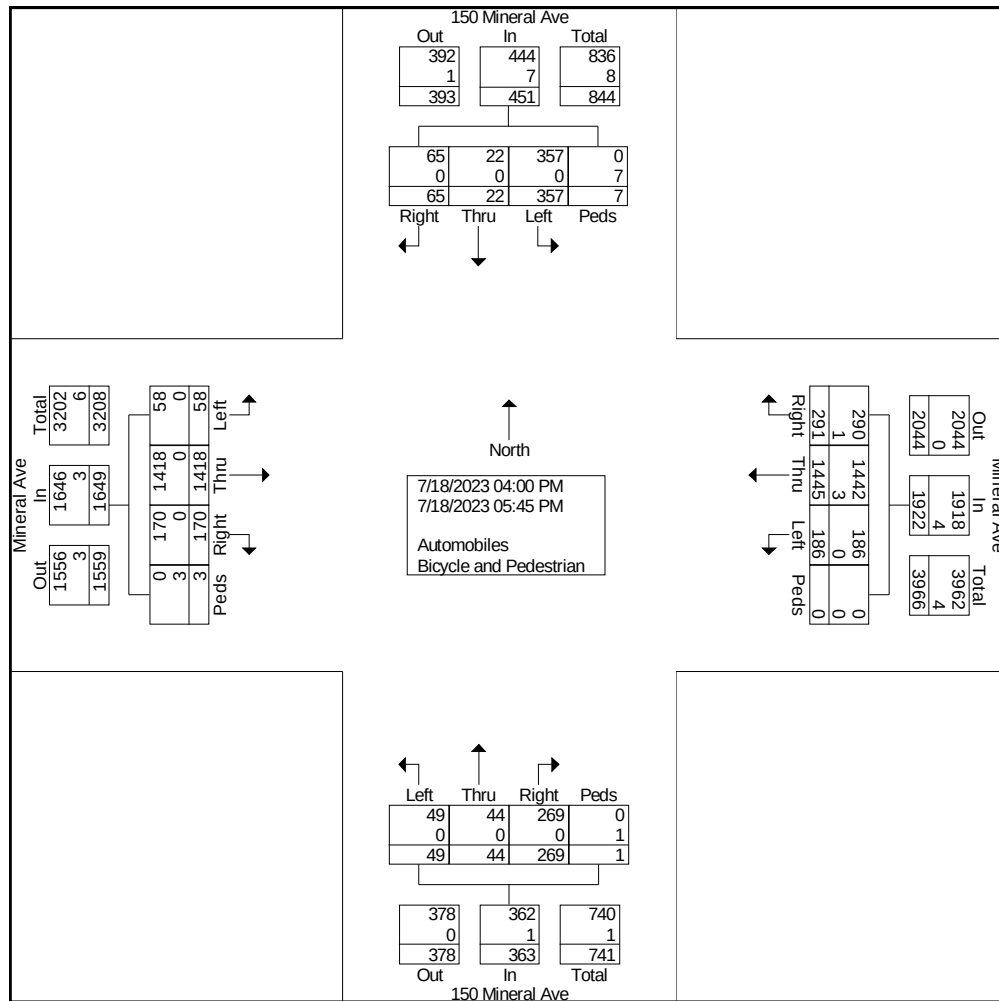
File Name : Mineral Ave and 150 Mineral Ave PM
 Site Code : KHA 646
 Start Date : 7/18/2023
 Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

	Mineral Ave Eastbound					Mineral Ave Westbound					150 Mineral Ave Northbound					150 Mineral Ave 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	4	179	16	0	199	22	172	26	0	220	7	7	30	0	44	33	1	8	0	42	505
04:15 PM	5	192	17	1	215	24	169	36	0	229	2	2	35	0	39	41	6	9	0	56	539
04:30 PM	10	150	24	1	185	22	186	38	0	246	8	8	31	1	48	39	3	11	0	53	532
04:45 PM	8	180	18	0	206	23	194	36	0	253	4	4	34	0	42	52	1	7	2	62	563
Total	27	701	75	2	805	91	721	136	0	948	21	21	130	1	173	165	11	35	2	213	2139
05:00 PM	10	200	24	1	235	22	191	38	0	251	7	7	33	0	47	45	1	7	1	54	587
05:15 PM	7	192	22	0	221	19	197	39	0	255	5	0	45	0	50	52	3	8	3	66	592
05:30 PM	5	180	21	0	206	32	182	44	0	258	11	0	33	0	44	46	4	8	0	58	566
05:45 PM	9	145	28	0	182	22	154	34	0	210	5	16	28	0	49	49	3	7	1	60	501
Total	31	717	95	1	844	95	724	155	0	974	28	23	139	0	190	192	11	30	5	238	2246
Grand Total	58	1418	170	3	1649	186	1445	291	0	1922	49	44	269	1	363	357	22	65	7	451	4385
Apprch %	3.5	86	10.3	0.2		9.7	75.2	15.1	0		13.5	12.1	74.1	0.3		79.2	4.9	14.4	1.6		
Total %	1.3	32.3	3.9	0.1	37.6	4.2	33	6.6	0	43.8	1.1	1	6.1	0	8.3	8.1	0.5	1.5	0.2	10.3	
Automobiles	58	1418	170	0	1646	186	1442	290	0	1918	49	44	269	0	362	357	22	65	0	444	4370
% Automobiles	100	100	100	0	99.8	100	99.8	99.7	0	99.8	100	100	100	0	99.7	100	100	100	0	98.4	99.7
Bicycle and Pedestrian	0	0	0	3	3	0	3	1	0	4	0	0	0	1	1	0	0	0	7	7	15
% Bicycle and Pedestrian	0	0	0	100	0.2	0	0.2	0.3	0	0.2	0	0	0	100	0.3	0	0	0	100	1.6	0.3

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and 150 Mineral Ave

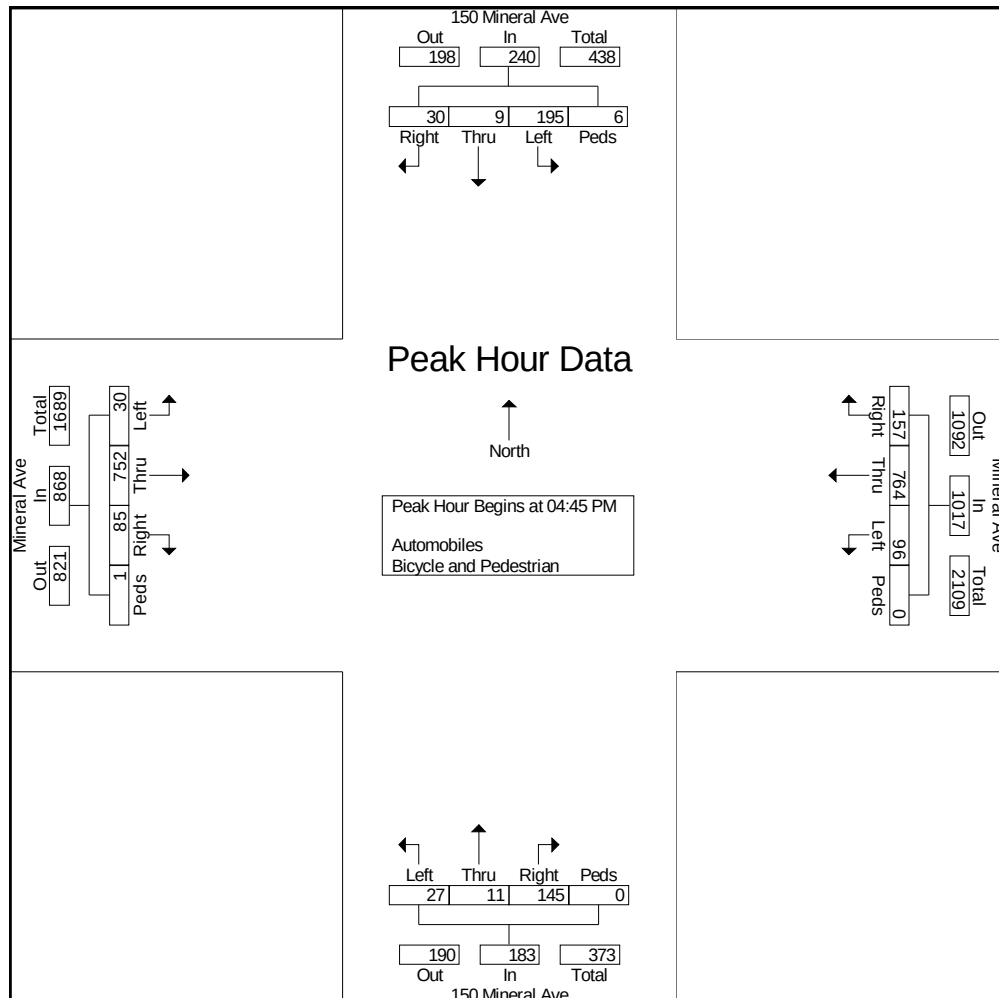
File Name : Mineral Ave and 150 Mineral Ave PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and 150 Mineral Ave

File Name : Mineral Ave and 150 Mineral Ave PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Mineral Ave Eastbound					Mineral Ave Westbound					150 Mineral Ave Northbound					150 Mineral Ave 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 04:45 PM																					
04:45 PM	8	180	18	0	206	23	194	36	0	253	4	4	34	0	42	52	1	7	2	62	563
05:00 PM	10	200	24	1	235	22	191	38	0	251	7	7	33	0	47	45	1	7	1	54	587
05:15 PM	7	192	22	0	221	19	197	39	0	255	5	0	45	0	50	52	3	8	3	66	592
05:30 PM	5	180	21	0	206	32	182	44	0	258	11	0	33	0	44	46	4	8	0	58	566
Total Volume	30	752	85	1	868	96	764	157	0	1017	27	11	145	0	183	195	9	30	6	240	2308
% App. Total	3.5	86.6	9.8	0.1		9.4	75.1	15.4	0		14.8	6	79.2	0		81.2	3.8	12.5	2.5		
PHF	.750	.940	.885	.250	.923	.750	.970	.892	.000	.985	.614	.393	.806	.000	.915	.938	.563	.938	.500	.909	.975

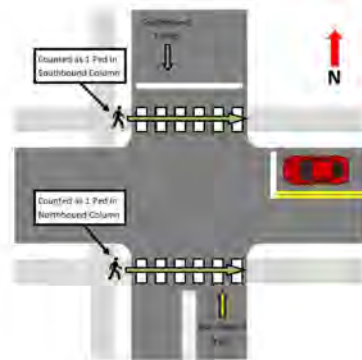


Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Mineral Ave and 150 Mineral Ave

File Name : Mineral Ave and 150 Mineral Ave PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.



Broadway & Mineral
4/18/2023

Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
7:00 AM	34	210	32	9	153	35	32	59	5	20	37	10	636
7:15 AM	46	293	33	17	212	40	43	99	7	32	44	17	883
7:30 AM	52	341	45	13	224	38	70	93	6	37	56	17	992
7:45 AM	73	333	56	18	224	69	61	101	10	36	94	11	1086
8:00 AM	65	290	45	22	260	60	60	129	18	23	81	12	1065
8:15 AM	75	312	53	27	222	64	67	95	10	34	63	24	1046
8:30 AM	66	288	39	25	244	43	69	107	7	33	60	16	997
8:45 AM	67	307	51	19	192	49	64	81	7	27	77	30	971
Total	478	2374	354	150	1731	398	466	764	70	242	512	137	

Peak Hour													
7:45 AM	279	1223	193	92	950	236	257	432	45	126	298	63	4194
PHF	0.930	0.897	0.862	0.852	0.913	0.855	0.918	0.837	0.625	0.851	0.793	0.525	0.965

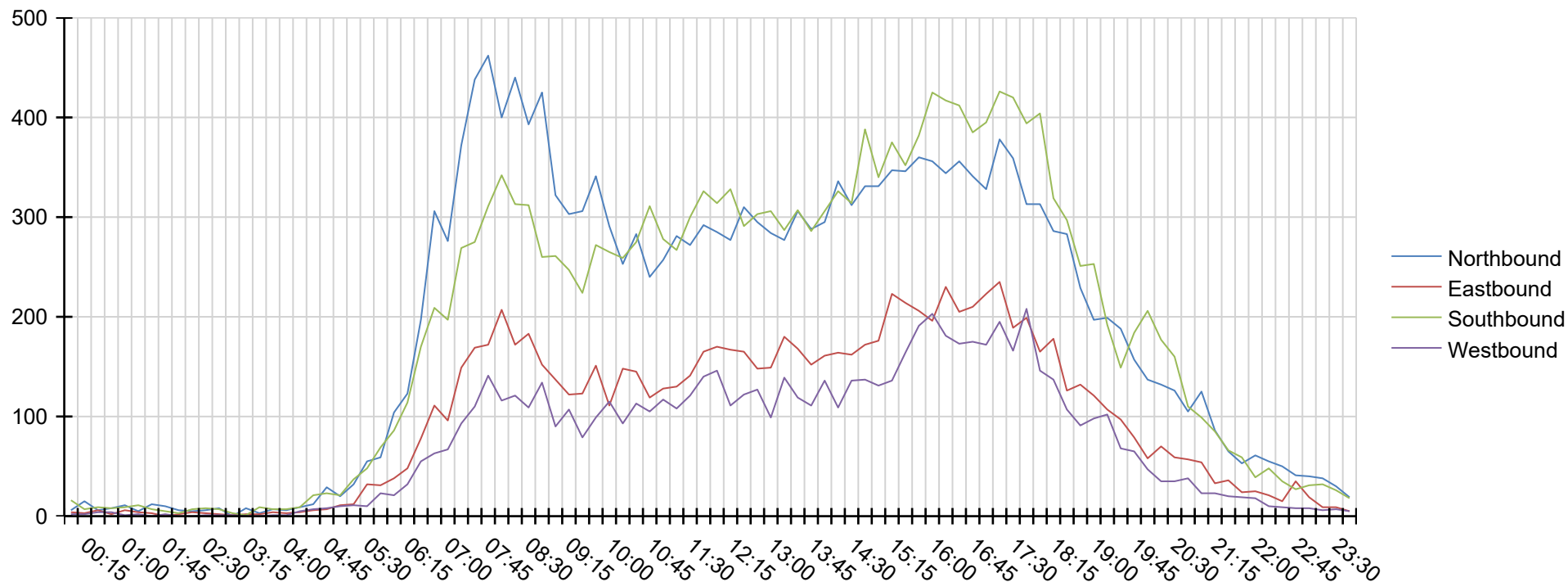
Start Time	Northbound			Southbound			Eastbound			Westbound			Total
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
4:00 PM	57	262	37	39	298	88	71	108	17	51	132	20	1180
4:15 PM	45	263	36	17	310	90	72	130	28	58	110	13	1172
4:30 PM	67	254	35	27	281	104	67	110	28	44	110	19	1146
4:45 PM	44	253	44	38	255	92	74	114	22	54	107	17	1114
5:00 PM	53	251	24	22	292	81	85	103	35	41	110	21	1118
5:15 PM	45	289	44	14	322	90	88	126	21	45	137	13	1234
5:30 PM	62	257	40	22	308	90	62	115	12	35	110	21	1134
5:45 PM	46	235	32	15	311	68	69	113	17	53	132	23	1114
Total	419	2064	292	194	2377	703	588	919	180	381	948	147	

Peak Hour													
4:30 PM	209	1047	147	101	1150	367	314	453	106	184	464	70	4612
PHF	0.780	0.906	0.835	0.647	0.893	0.882	0.892	0.871	0.757	0.793	0.847	0.761	0.934

Intersection Broadway & Mineral

Date 4/18/2023

	Right	Through	Left	UTurn	Total
Northbound	2173	13286	3004	22	18485
Eastbound	731	4882	3725	9	9347
Southbound	3732	13397	1108	4	18241
Westbound	833	4258	2064	2	7157
Total	7469	35823	9901	37	53230



Intersection Broadway & Mineral

Date 4/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00		5	1			1	3		2	14			1	1		
00:15	1	12	2		1	1	1			7			1	1		
00:30		5	1			3	3		3	6			1	2	1	
00:45	1	6	1			1	1		2	6				3	1	
01:00	1	8	2			2	4		2	7				1		
01:15		5				2	2		1	10					2	
01:30	1	8	3			1	2		1	6						
01:45		9	1						1	4				1	1	
02:00		5	1				2			3						
02:15	1	4			1	2	1			7						
02:30	1	4	1			3			1	7				1		
02:45	2	3	3				2		1	6					1	
03:00						1				3					1	
03:15		5	3			2				1						
03:30		2	1		1		1		3	6						
03:45		5	2		1	1	2		2	4	1				1	
04:00	1	4	1		1	1	1		1	6					1	
04:15	1	7	1			4			2	7			1	3	1	
04:30	2	7	3		2	2	2		4	17				6	1	
04:45	5	17	7			6	1		5	18			1	7		
05:00	2	14	4		1	6	4		2	19				7	3	
05:15	5	20	7			8	4		8	29			1	7	3	
05:30	8	37	10		2	20	10		6	40	2		1	6	3	
05:45	13	36	10			21	10		6	63			2	15	6	
06:00	10	77	17		3	23	12		13	69	4		1	14	6	
06:15	24	70	29		4	29	15		19	87	8		2	24	6	



Turning Movement Counts

Intersection Broadway & Mineral

Date 4/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
06:30	35	142	20		5	53	20		18	135	17		7	26	22	
06:45	54	220	32		2	76	33		27	171	11		7	39	17	
07:00	32	210	34		5	59	32		35	153	9		10	37	20	
07:15	33	293	44	2	7	99	43		40	212	17		17	44	32	
07:30	45	341	51	1	6	93	70		38	224	13		17	56	37	
07:45	56	333	73		10	101	61		69	224	18		11	94	36	
08:00	45	290	65		18	129	60		60	260	22		12	81	23	
08:15	53	312	75		10	95	67		64	222	26	1	24	63	34	
08:30	39	288	66		7	107	69		43	244	25		16	60	33	
08:45	51	307	66	1	7	81	64		49	192	19		30	77	27	
09:00	53	220	48	1	10	68	59		37	208	16		13	50	27	
09:15	36	222	45		11	60	51		42	189	15	1	19	64	24	
09:30	36	218	51	1	5	62	56		61	142	21		11	33	35	
09:45	53	239	49		17	60	74		57	187	28		22	49	27	1
10:00	35	224	32		7	60	44		62	184	19		10	82	23	
10:15	39	176	38		3	85	60		64	175	20		6	57	30	
10:30	49	181	52	1	9	69	67		64	193	18		18	68	27	
10:45	29	177	33	1	2	61	56		69	221	21		8	66	31	
11:00	34	180	43		13	62	53		54	207	17		14	66	36	1
11:15	32	194	54	1	5	57	67	1	61	190	16		16	63	29	
11:30	35	193	44		7	78	55	1	75	207	18		17	65	39	
11:45	32	218	42		4	79	82		78	228	20		13	70	57	
12:00	34	194	56	1	11	87	72		78	207	29		12	76	58	
12:15	37	184	56		16	77	74		87	218	23		13	61	37	
12:30	46	205	59		8	83	73	1	66	204	21		21	56	45	
12:45	50	187	58		13	70	64	1	69	220	14		14	76	37	



Turning Movement Counts

Intersection Broadway & Mineral

Date 4/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
13:00	34	198	52		7	74	68		61	229	16		9	59	31	
13:15	35	189	53		9	86	85		56	215	16		10	84	45	
13:30	39	217	49	1	8	83	77		74	218	15		20	62	37	
13:45	40	201	46	1	4	72	76		70	198	18		14	61	36	
14:00	29	200	65	1	9	80	72		65	222	19		14	76	46	
14:15	48	220	66	2	16	83	65		74	229	23		14	61	34	
14:30	34	228	49	1	19	71	71	1	65	233	16		23	71	42	
14:45	32	249	50		16	85	71		107	258	23		17	85	35	
15:00	29	244	57	1	12	87	77		75	245	20		17	78	36	
15:15	37	260	50		21	112	90		80	275	20		17	86	33	
15:30	32	264	50		21	112	81		74	253	25		17	98	49	
15:45	37	265	58		11	99	96		74	273	35		28	109	54	
16:00	37	262	57		17	108	71		88	298	39		20	132	51	
16:15	36	263	45		28	130	72		90	310	17		13	110	58	
16:30	35	254	67		28	110	66	1	104	281	27		19	110	44	
16:45	44	253	43	1	22	114	74		92	255	38		17	107	51	
17:00	24	251	53		35	103	85		81	292	21	1	21	110	41	
17:15	44	289	45		21	126	88		90	322	14		13	137	45	
17:30	40	257	62		12	115	61	1	90	308	22		21	110	35	
17:45	32	235	46		17	113	69		68	311	15		23	132	53	
18:00	37	232	44		20	86	58	1	74	307	22	1	13	89	44	
18:15	31	208	47		19	84	75		55	252	12		12	92	33	
18:30	33	195	55		22	63	40	1	62	216	19		11	71	25	
18:45	23	166	40		21	58	53		51	183	17		9	56	26	
19:00	21	136	40		16	60	45		44	196	13		7	66	25	
19:15	23	136	39	1	16	47	44		32	145	15		5	69	28	

Intersection Broadway & Mineral

Date 4/18/2023

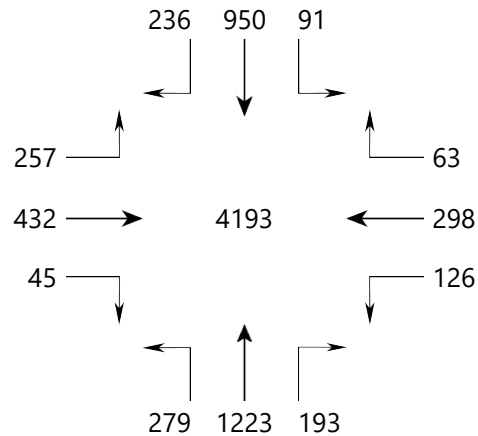
	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
19:30	13	152	21	2	13	50	34		30	106	13		6	38	24	
19:45	23	106	28		6	37	36		45	134	5		7	35	23	
20:00	12	98	26	1	4	27	27		42	158	6		7	19	21	
20:15	13	94	25		3	39	28		24	144	9		3	26	6	
20:30	9	93	24		4	28	27		26	127	7		1	20	14	
20:45	12	76	17		2	21	34		26	82	2		3	20	15	
21:00	10	85	30		3	32	19		16	78	5			15	8	
21:15	4	63	19		4	14	15		12	71	2		1	18	4	
21:30	6	45	14		4	20	12		11	50	5		5	11	4	
21:45	7	34	12		2	15	7		10	48	1		3	9	7	
22:00	6	43	12			14	11		9	28	2		1	11	6	
22:15	3	43	9		1	12	8		10	37	1			7	3	
22:30	2	40	8			12	3		7	26	2			6	3	
22:45	6	26	9		1	19	15		4	22	1		1	5	2	
23:00	4	29	7		1	14	4		4	26	1			5	3	
23:15	1	30	7			6	3		3	28	1			5	1	
23:30	2	19	9		1	6	2		1	25				6	1	
23:45	2	15	2			4	1		4	14			1	3	1	
Total	2173	13286	3004	22	731	4882	3725	9	3732	13397	1108	4	833	4258	2064	2

Intersection Broadway & Mineral

Date 4/18/2023

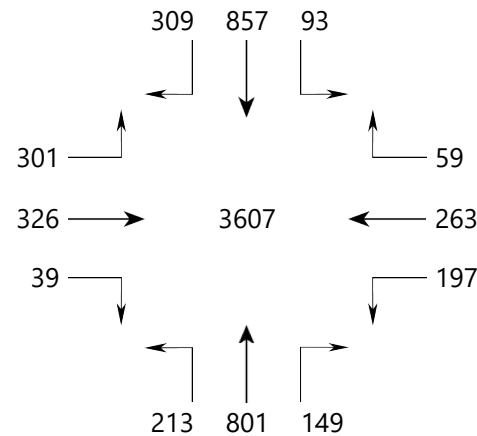
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 07:45 TO 08:45



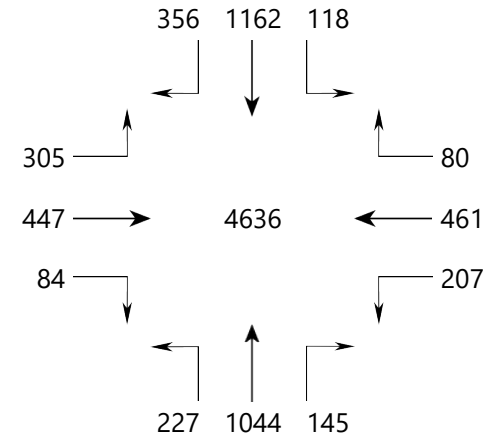
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 11:45 TO 12:45



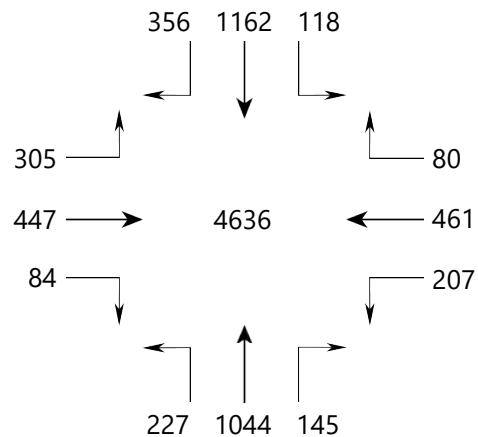
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 15:45 TO 16:45



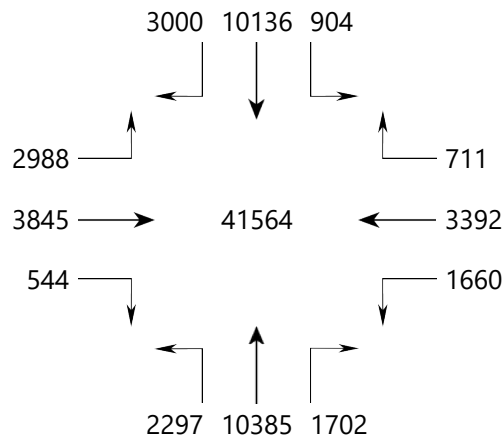
OVERALL PEAK HOUR VOLUME

FROM 15:45 TO 16:45



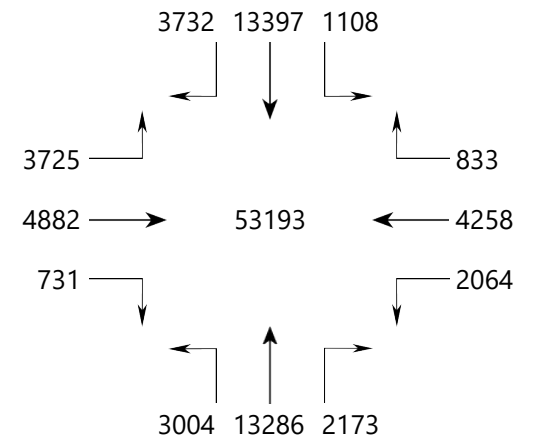
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

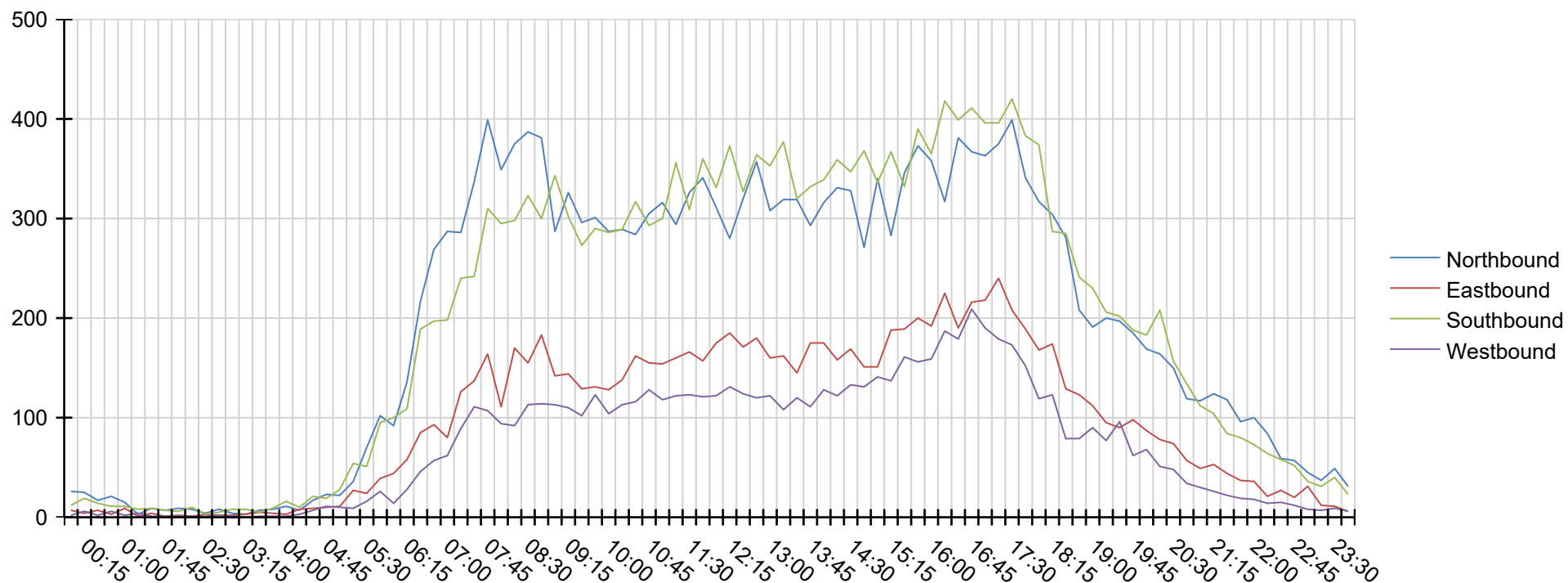
FROM 00:00 TO 23:59



Intersection Broadway & Mineral

Date 7/18/2023

	Right	Through	Left	UTurn	Total
Northbound	2337	13830	2825	35	19027
Eastbound	538	4674	4190	3	9405
Southbound	4043	14217	952	1	19213
Westbound	835	4025	2178	4	7042
Total	7753	36746	10145	43	54687





Turning Movement Counts

Intersection Broadway & Mineral

Date 7/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00	1	22	3		1	4	2			12			1	1		
00:15	1	18	6			2	2		1	18			1	2	3	
00:30	2	13	2			4	3		1	12	1		2			
00:45	2	17	2			2	1		1	9	1		1	4	1	
01:00		12	3			2	7		3	8				1	1	
01:15		3					1		1	7				4		
01:30		7	2			2	2			7	2					1
01:45		5	2			1			2	5				1		
02:00	1	6	2			1	1		1	4	1			1		
02:15		7	1			1			3	6	1		1			
02:30		3	1			2	1			2	1					1
02:45		6	2			1	1		1	4			1	1		
03:00		2	2				2			8						1
03:15		2	1		1	2			2	6						
03:30		6	1		1	3	1		1	4			1			
03:45		7	1		1	2	1		1	8				1		
04:00		8	3		1	1	1		1	15						1
04:15	3	4			2	5	1		4	6				1	2	
04:30		13	4		2	6	1		6	14	1			7		
04:45	3	15	5			8	2		3	16			1	7	3	
05:00	5	14	3		1	7	3		4	24				6	4	
05:15	5	23	8		1	15	11		8	44	2		1	5	3	
05:30	12	49	7	2	1	19	4		9	41	1			8	8	
05:45	21	65	16		1	26	12		9	82	4		3	18	5	
06:00	12	69	11		4	26	14		11	82	7		1	12	1	
06:15	25	88	23		1	34	23		16	84	9		1	16	11	



Turning Movement Counts

Intersection Broadway & Mineral

Date 7/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
06:30	44	145	28		7	46	32		27	153	9		2	29	15	
06:45	66	168	34	1	2	55	36		28	156	13		6	31	20	
07:00	53	205	29		5	43	32		37	153	8		8	33	21	
07:15	43	201	41	1	4	79	43		39	189	12		10	57	22	
07:30	54	229	51	3	12	75	50		40	195	7		18	62	31	
07:45	57	300	42		10	90	64		62	227	21		7	63	37	
08:00	41	254	53	1	6	62	43		57	222	16		9	55	30	
08:15	46	275	54		13	88	69		54	227	17		13	54	25	
08:30	45	296	45	1	3	83	69		49	265	9		11	70	32	
08:45	45	284	52		6	93	84		48	234	18		12	64	38	
09:00	34	226	26	1	5	74	63		67	253	23		19	58	36	
09:15	41	231	53	1	7	75	62		71	213	18		18	51	41	
09:30	28	224	43	1	3	63	63		65	196	12		16	53	33	
09:45	43	209	48	1	2	66	63		57	207	26		29	61	33	
10:00	35	208	44		2	60	66		57	215	14		11	65	28	
10:15	41	215	33		6	67	65		77	199	13		13	63	37	
10:30	34	205	45		6	86	70		79	214	24		16	63	37	
10:45	29	220	56		4	76	75		54	221	18		17	65	45	1
11:00	38	238	40		7	82	65		72	205	23		10	74	33	1
11:15	39	201	54		3	80	77		100	230	26		18	57	47	
11:30	49	221	54	2	7	80	78	1	76	214	19		10	69	44	
11:45	38	243	60		5	86	66		80	256	24		17	66	38	
12:00	35	221	55		8	81	86		89	226	16		14	69	39	
12:15	30	193	57		12	70	103		88	263	22		24	72	35	
12:30	36	232	52		12	68	91		85	225	17		19	70	35	
12:45	47	254	55	1	9	91	80		80	262	22		15	71	34	

Intersection Broadway & Mineral

Date 7/18/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
13:00	45	207	56		7	65	88		79	258	16		12	72	38	
13:15	36	239	43	1	8	72	82		80	276	21		16	54	38	
13:30	38	231	50		9	67	69		79	228	13		16	61	43	
13:45	40	208	45		15	84	76		88	223	20	1	13	72	26	
14:00	39	226	50	1	12	72	91		75	242	22		13	67	48	
14:15	43	235	52	1	10	78	70		85	256	18		14	63	45	
14:30	40	231	55	2	4	83	81	1	76	252	19		16	67	50	
14:45	28	197	46		7	73	71		85	262	21		7	80	44	
15:00	45	245	49	1	7	77	67		71	247	18		19	83	39	
15:15	43	206	34		9	95	84		85	265	17		10	86	41	
15:30	30	264	51	1	14	98	77		71	241	20		26	85	50	
15:45	63	258	51	1	8	106	86		93	284	13		12	86	58	
16:00	46	264	47	1	19	93	80		83	265	17		28	92	39	
16:15	31	252	33	1	18	105	102		93	308	17		11	109	67	
16:30	44	285	52		10	97	83		92	284	23		27	102	50	
16:45	44	280	43		15	108	93		87	311	13		32	125	52	
17:00	37	284	42		24	110	84		85	300	11		19	124	46	1
17:15	45	279	51		21	111	108		87	297	12		17	109	53	
17:30	39	299	61		8	109	91		97	305	18		16	113	44	
17:45	37	265	39		13	91	85		79	287	17		14	101	37	
18:00	33	231	52	1	10	81	77		80	277	17		11	67	41	
18:15	30	221	52	1	9	102	63		61	215	11		12	78	33	
18:30	34	203	44		14	54	61		70	208	7		8	54	17	
18:45	29	137	42		12	62	49		48	182	11		7	40	32	
19:00	20	137	34		7	49	56		40	183	7		12	45	32	1
19:15	20	139	38	3	4	41	49	1	33	167	6		8	43	26	



Turning Movement Counts

Intersection Broadway & Mineral

Date 7/18/2023

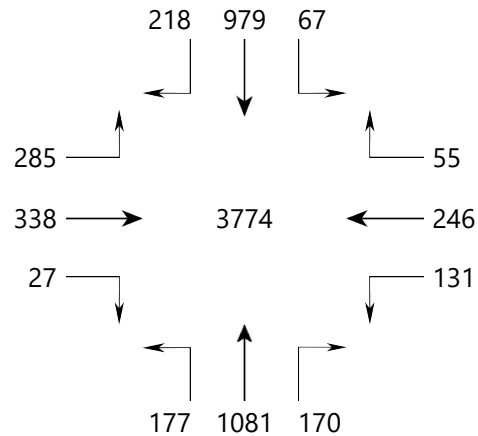
	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
19:30	20	139	38		9	50	31		45	153	4		13	55	28	
19:45	25	136	24		16	31	51		30	148	10		5	28	29	
20:00	23	125	20	1	8	45	34		36	139	8		3	42	23	
20:15	16	125	23			36	42		34	165	9		9	32	10	
20:30	19	109	22		2	38	34		31	115	11		8	18	22	
20:45	10	90	19		2	32	23		29	100	5		1	23	10	
21:00	9	88	20		7	19	23		19	91	2		4	20	6	
21:15	6	95	23		3	25	25		13	87	4		2	17	7	
21:30	9	88	20	1	2	18	24		14	69	1		4	12	6	
21:45	6	72	18		2	22	13		12	65	3		2	9	8	
22:00	8	75	17		2	16	18		13	57	3		2	14	2	
22:15	5	70	9		2	8	11		4	59	1		1	11	2	
22:30	7	43	9			14	13		8	47	3		4	8	3	
22:45	4	42	10	1	3	10	7		11	40	1		1	7	4	
23:00	1	35	9		1	18	12		8	27	1		1	2	5	
23:15	1	29	7		1	4	7		1	29	1			4	3	
23:30	3	39	6	1		6	5		6	33	1		1	3	5	
23:45	2	25	4			4	2			22	1		1	1	4	
Total	2337	13830	2825	35	538	4674	4190	3	4043	14217	952	1	835	4025	2178	4

Intersection Broadway & Mineral

Date 7/18/2023

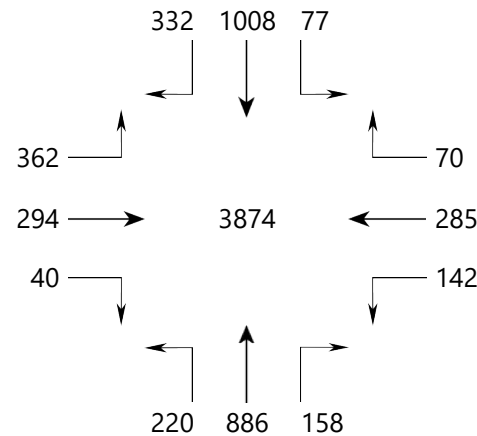
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 08:15 TO 09:15



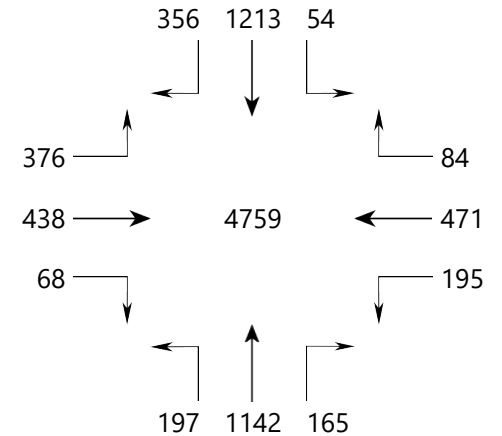
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:15 TO 13:15



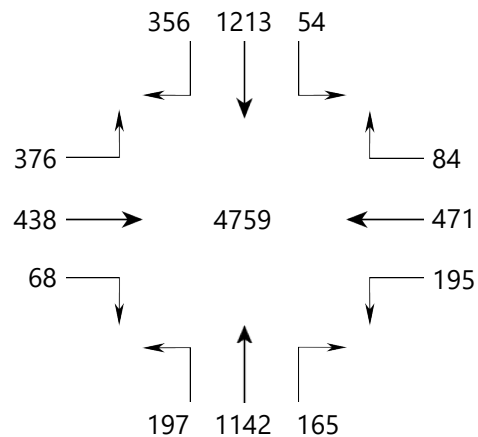
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 16:45 TO 17:45



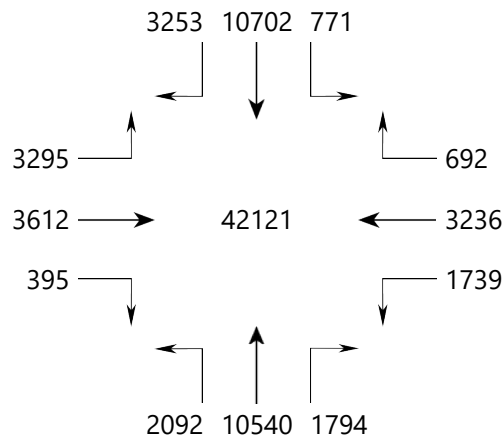
OVERALL PEAK HOUR VOLUME

FROM 16:45 TO 17:45



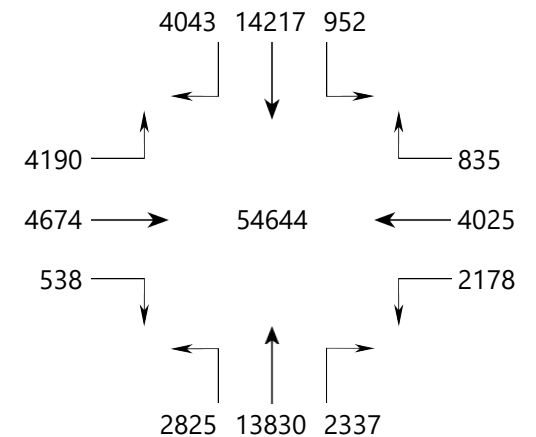
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

FROM 00:00 TO 23:59





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

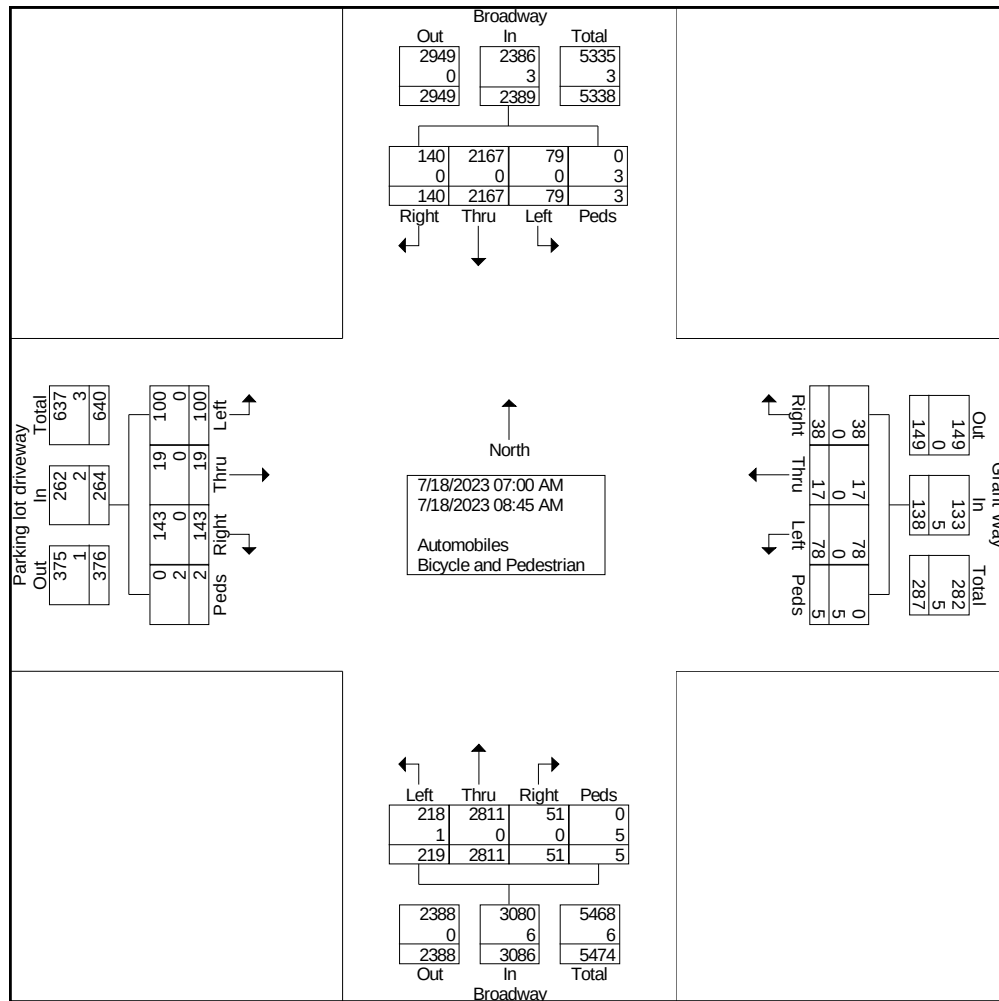
	Parking lot driveway Eastbound					Grant Way Westbound					Broadway Northbound					Broadway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	11	3	9	0	23	11	1	2	2	16	10	278	5	2	295	13	185	18	0	216	550
07:15 AM	9	2	16	0	27	7	2	2	0	11	31	298	7	0	336	9	224	12	0	245	619
07:30 AM	11	1	17	0	29	8	2	7	0	17	19	336	5	0	360	6	279	13	0	298	704
07:45 AM	17	3	22	0	42	11	6	6	0	23	31	400	9	0	440	13	287	19	0	319	824
Total	48	9	64	0	121	37	11	17	2	67	91	1312	26	2	1431	41	975	62	0	1078	2697
08:00 AM	9	1	18	2	30	10	2	5	1	18	23	352	6	0	381	7	282	18	2	309	738
08:15 AM	16	1	18	0	35	10	1	6	1	18	36	368	3	1	408	9	290	20	0	319	780
08:30 AM	15	5	22	0	42	11	2	6	0	19	31	388	7	0	426	15	316	25	0	356	843
08:45 AM	12	3	21	0	36	10	1	4	1	16	38	391	9	2	440	7	304	15	1	327	819
Total	52	10	79	2	143	41	6	21	3	71	128	1499	25	3	1655	38	1192	78	3	1311	3180
Grand Total	100	19	143	2	264	78	17	38	5	138	219	2811	51	5	3086	79	2167	140	3	2389	5877
Apprch %	37.9	7.2	54.2	0.8		56.5	12.3	27.5	3.6		7.1	91.1	1.7	0.2		3.3	90.7	5.9	0.1		
Total %	1.7	0.3	2.4	0	4.5	1.3	0.3	0.6	0.1	2.3	3.7	47.8	0.9	0.1	52.5	1.3	36.9	2.4	0.1	40.6	
Automobiles	100	19	143	0	262	78	17	38	0	133	218	2811	51	0	3080	79	2167	140	0	2386	5861
% Automobiles	100	100	100	0	99.2	100	100	100	0	96.4	99.5	100	100	0	99.8	100	100	100	0	99.9	99.7
Bicycle and Pedestrian	0	0	0	2	2	0	0	0	5	5	1	0	0	5	6	0	0	0	3	3	16
% Bicycle and Pedestrian	0	0	0	100	0.8	0	0	0	100	3.6	0.5	0	0	100	0.2	0	0	0	100	0.1	0.3



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



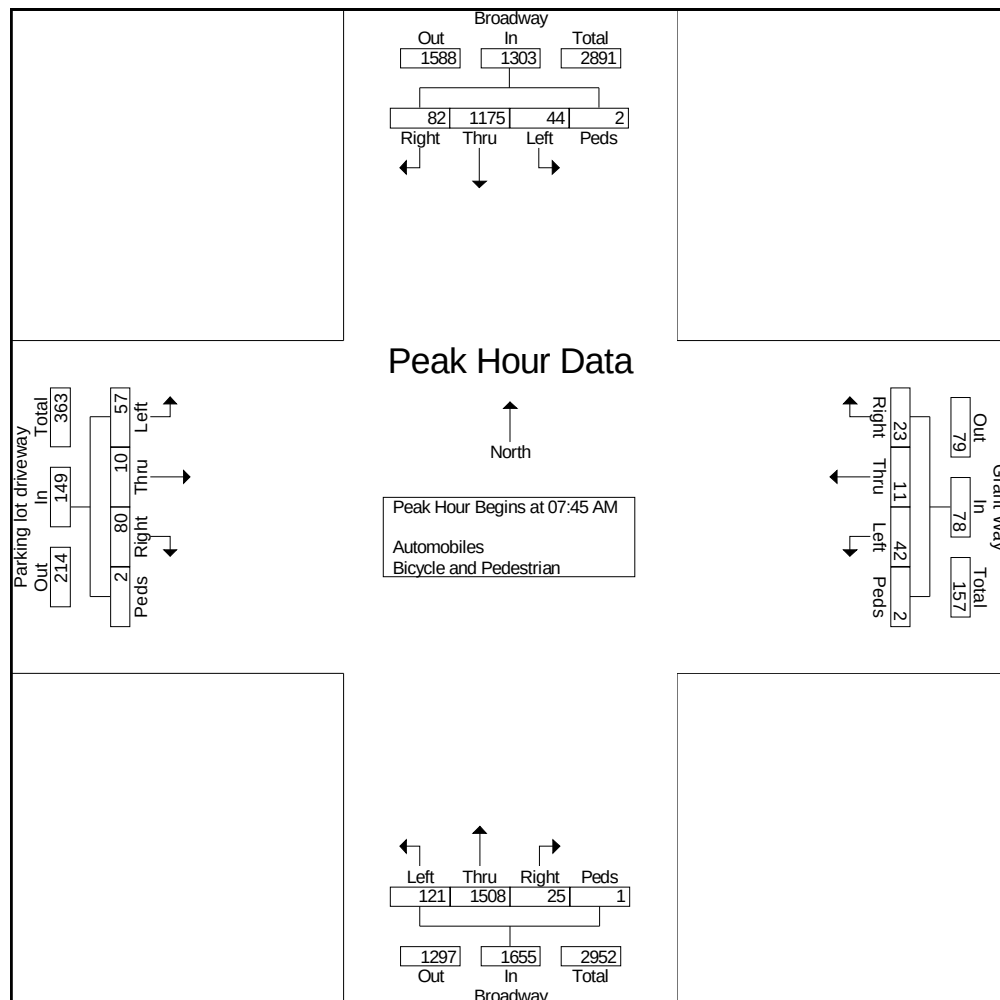


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Parking lot driveway Eastbound					Grant Way Westbound					Broadway Northbound					Broadway 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 07:45 AM																					
07:45 AM	17	3	22	0	42	11	6	6	0	23	31	400	9	0	440	13	287	19	0	319	824
08:00 AM	9	1	18	2	30	10	2	5	1	18	23	352	6	0	381	7	282	18	2	309	738
08:15 AM	16	1	18	0	35	10	1	6	1	18	36	368	3	1	408	9	290	20	0	319	780
08:30 AM	15	5	22	0	42	11	2	6	0	19	31	388	7	0	426	15	316	25	0	356	843
Total Volume	57	10	80	2	149	42	11	23	2	78	121	1508	25	1	1655	44	1175	82	2	1303	3185
% App. Total	38.3	6.7	53.7	1.3		53.8	14.1	29.5	2.6		7.3	91.1	1.5	0.1		3.4	90.2	6.3	0.2		
PHF	.838	.500	.909	.250	.887	.955	.458	.958	.500	.848	.840	.943	.694	.250	.940	.733	.930	.820	.250	.915	.945





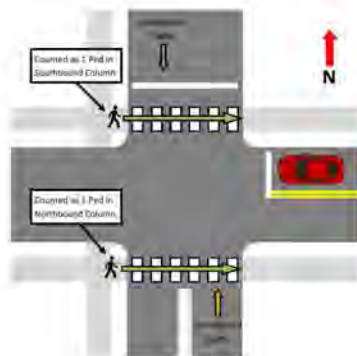
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

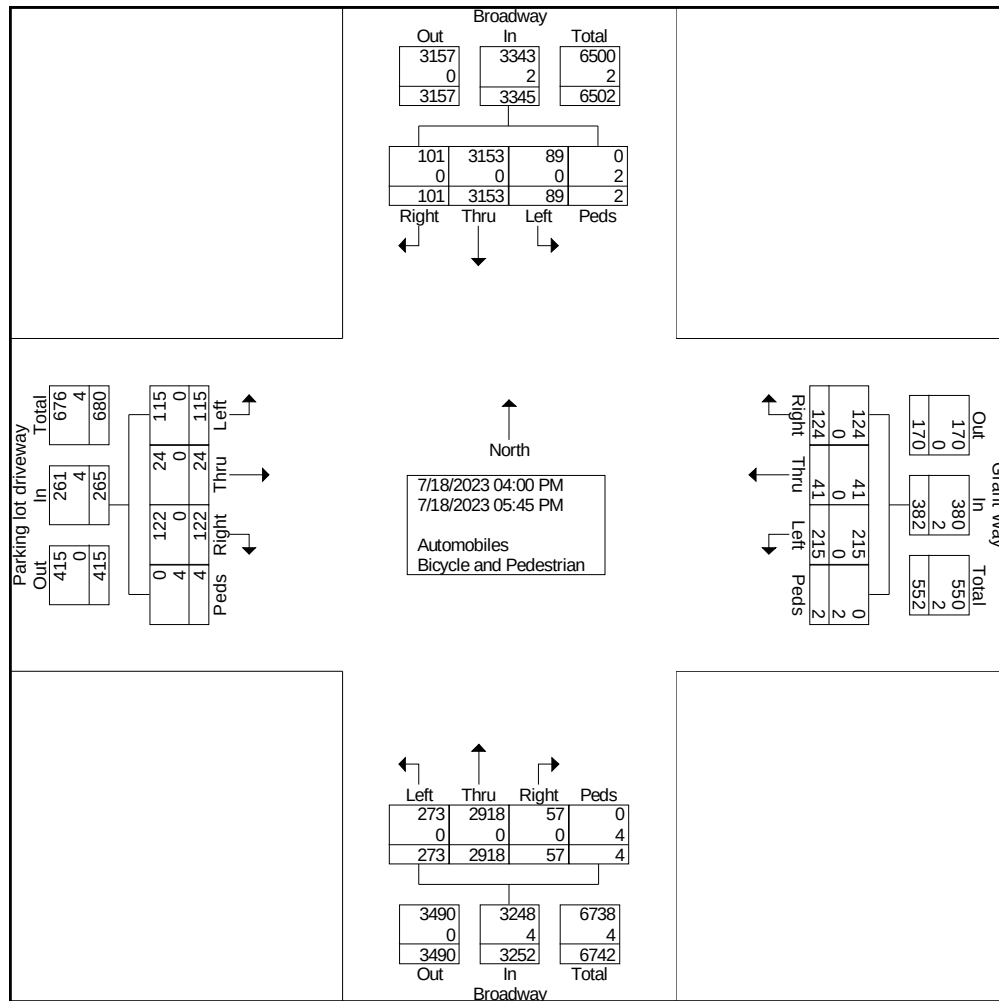
	Parking lot driveway Eastbound					Grant Way Westbound					Broadway Northbound					Broadway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	6	4	13	1	24	35	6	14	0	55	38	345	9	0	392	16	336	13	0	365	836
04:15 PM	20	3	15	0	38	30	3	12	0	45	32	335	6	0	373	10	432	9	1	452	908
04:30 PM	17	2	19	0	38	25	7	22	0	54	33	342	5	1	381	15	376	19	0	410	883
04:45 PM	12	3	6	1	22	22	12	14	1	49	33	367	11	1	412	9	427	7	0	443	926
Total	55	12	53	2	122	112	28	62	1	203	136	1389	31	2	1558	50	1571	48	1	1670	3553
05:00 PM	18	2	23	0	43	45	4	22	0	71	32	393	6	0	431	12	398	15	0	425	970
05:15 PM	17	3	11	0	31	18	3	11	1	33	29	408	4	1	442	10	397	17	1	425	931
05:30 PM	13	2	19	1	35	19	2	13	0	34	39	384	7	0	430	7	413	9	0	429	928
05:45 PM	12	5	16	1	34	21	4	16	0	41	37	344	9	1	391	10	374	12	0	396	862
Total	60	12	69	2	143	103	13	62	1	179	137	1529	26	2	1694	39	1582	53	1	1675	3691
Grand Total	115	24	122	4	265	215	41	124	2	382	273	2918	57	4	3252	89	3153	101	2	3345	7244
Apprch %	43.4	9.1	46	1.5		56.3	10.7	32.5	0.5		8.4	89.7	1.8	0.1		2.7	94.3	3	0.1		
Total %	1.6	0.3	1.7	0.1	3.7	3	0.6	1.7	0	5.3	3.8	40.3	0.8	0.1	44.9	1.2	43.5	1.4	0	46.2	
Automobiles	115	24	122	0	261	215	41	124	0	380	273	2918	57	0	3248	89	3153	101	0	3343	7232
% Automobiles	100	100	100	0	98.5	100	100	100	0	99.5	100	100	100	0	99.9	100	100	100	0	99.9	99.8
Bicycle and Pedestrian	0	0	0	4	4	0	0	0	2	2	0	0	0	4	4	0	0	0	2	2	12
% Bicycle and Pedestrian	0	0	0	100	1.5	0	0	0	100	0.5	0	0	0	100	0.1	0	0	0	100	0.1	0.2



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



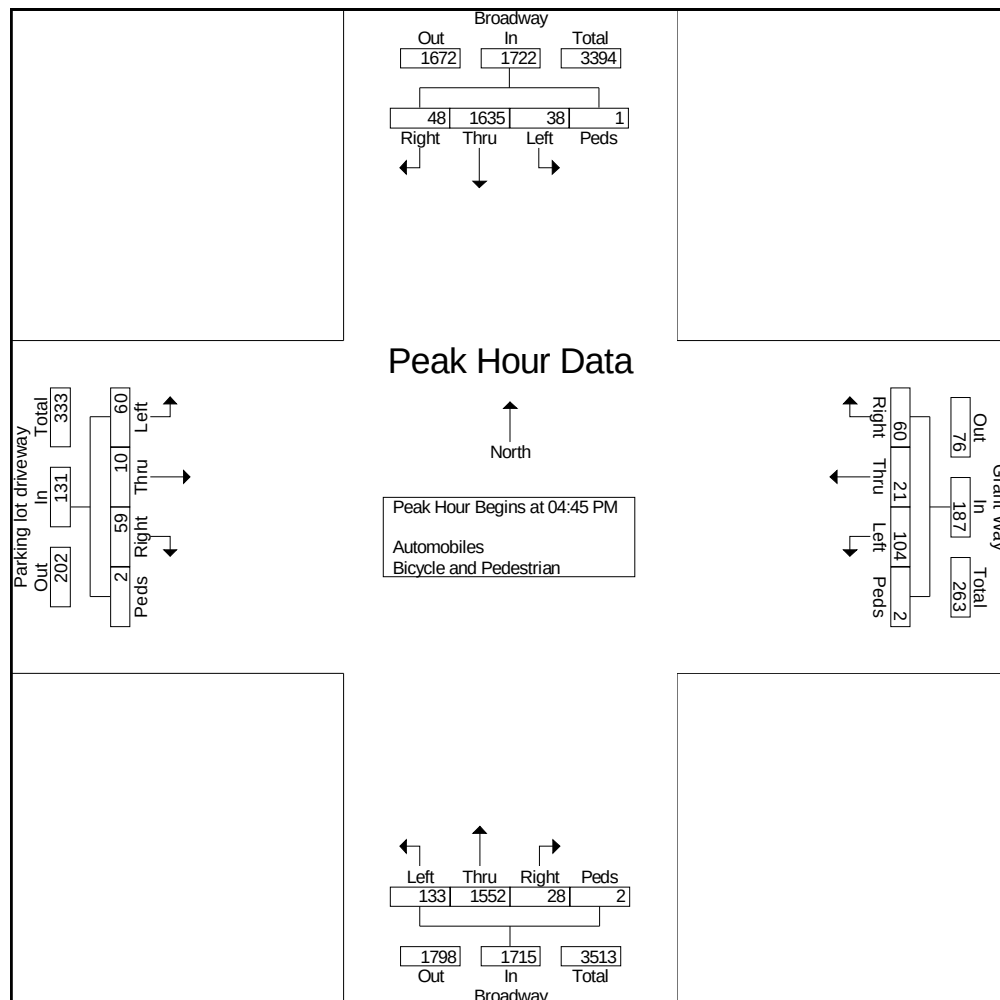


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Parking lot driveway Eastbound					Grant Way Westbound					Broadway Northbound					Broadway 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 04:45 PM																					
04:45 PM	12	3	6	1	22	22	12	14	1	49	33	367	11	1	412	9	427	7	0	443	926
05:00 PM	18	2	23	0	43	45	4	22	0	71	32	393	6	0	431	12	398	15	0	425	970
05:15 PM	17	3	11	0	31	18	3	11	1	33	29	408	4	1	442	10	397	17	1	425	931
05:30 PM	13	2	19	1	35	19	2	13	0	34	39	384	7	0	430	7	413	9	0	429	928
Total Volume	60	10	59	2	131	104	21	60	2	187	133	1552	28	2	1715	38	1635	48	1	1722	3755
% App. Total	45.8	7.6	45	1.5		55.6	11.2	32.1	1.1		7.8	90.5	1.6	0.1		2.2	94.9	2.8	0.1		
PHF	.833	.833	.641	.500	.762	.578	.438	.682	.500	.658	.853	.951	.636	.500	.970	.792	.957	.706	.250	.972	.968





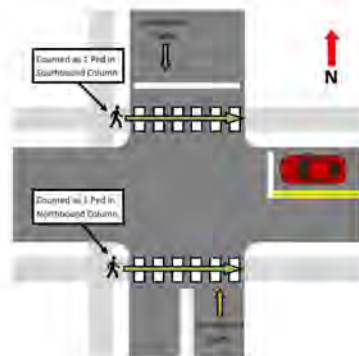
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Grant Way and Broadway

File Name : Grant Way and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

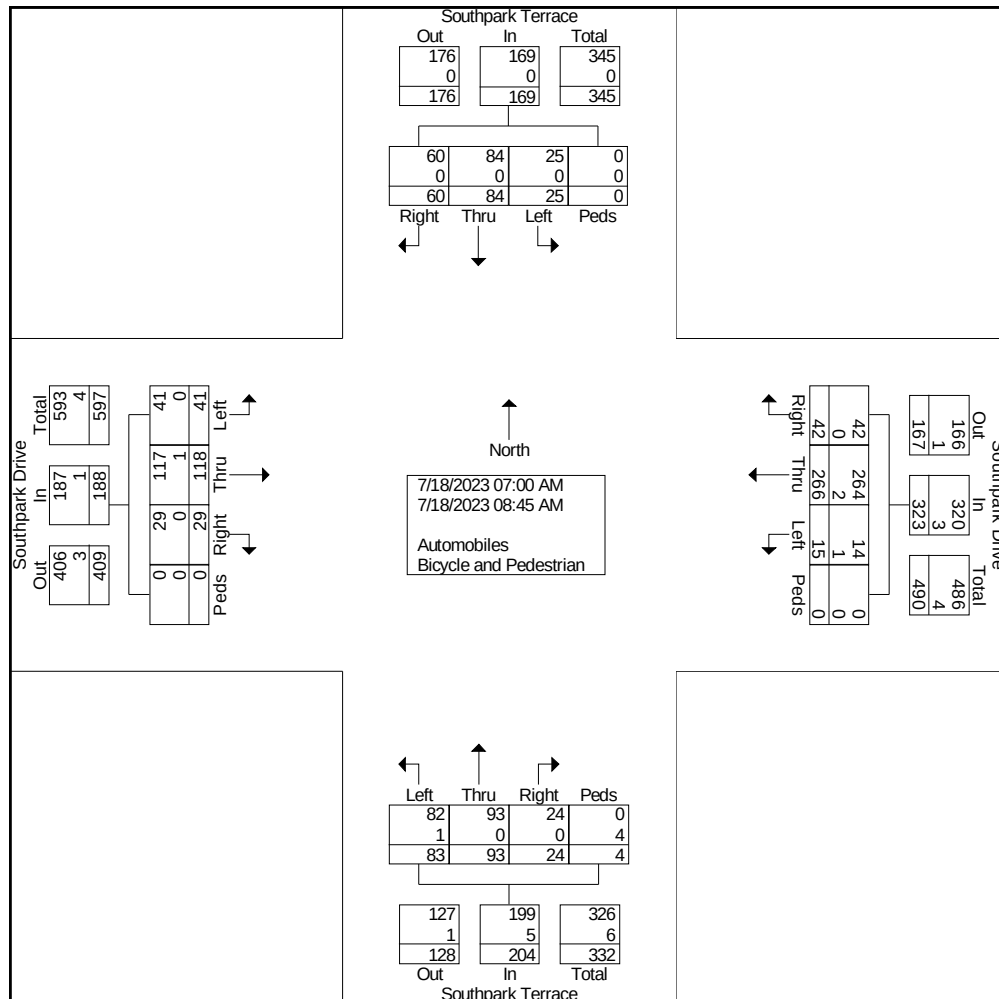
	Southpark Drive Eastbound					Southpark Drive Westbound					Southpark Terrace Northbound					Southpark Terrace Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	6	7	0	0	13	0	11	4	0	15	6	12	1	0	19	2	6	3	0	11	58
07:15 AM	4	8	1	0	13	3	35	8	0	46	10	9	2	0	21	5	8	4	0	17	97
07:30 AM	4	4	2	0	10	2	32	4	0	38	9	10	0	1	20	6	16	12	0	34	102
07:45 AM	5	17	5	0	27	1	53	8	0	62	7	15	1	2	25	1	17	8	0	26	140
Total	19	36	8	0	63	6	131	24	0	161	32	46	4	3	85	14	47	27	0	88	397
08:00 AM	7	26	8	0	41	0	41	3	0	44	15	11	4	0	30	2	6	7	0	15	130
08:15 AM	3	26	5	0	34	5	31	5	0	41	14	15	6	0	35	3	12	7	0	22	132
08:30 AM	7	14	1	0	22	1	37	5	0	43	11	11	2	0	24	3	9	11	0	23	112
08:45 AM	5	16	7	0	28	3	26	5	0	34	11	10	8	1	30	3	10	8	0	21	113
Total	22	82	21	0	125	9	135	18	0	162	51	47	20	1	119	11	37	33	0	81	487
Grand Total	41	118	29	0	188	15	266	42	0	323	83	93	24	4	204	25	84	60	0	169	884
Apprch %	21.8	62.8	15.4	0		4.6	82.4	13	0		40.7	45.6	11.8	2		14.8	49.7	35.5	0		
Total %	4.6	13.3	3.3	0	21.3	1.7	30.1	4.8	0	36.5	9.4	10.5	2.7	0.5	23.1	2.8	9.5	6.8	0	19.1	
Automobiles	41	117	29	0	187	14	264	42	0	320	82	93	24	0	199	25	84	60	0	169	875
% Automobiles	100	99.2	100	0	99.5	93.3	99.2	100	0	99.1	98.8	100	100	0	97.5	100	100	100	0	100	99
Bicycle and Pedestrian	0	1	0	0	1	1	2	0	0	3	1	0	0	4	5	0	0	0	0	0	9
% Bicycle and Pedestrian	0	0.8	0	0	0.5	6.7	0.8	0	0	0.9	1.2	0	0	100	2.5	0	0	0	0	0	1



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



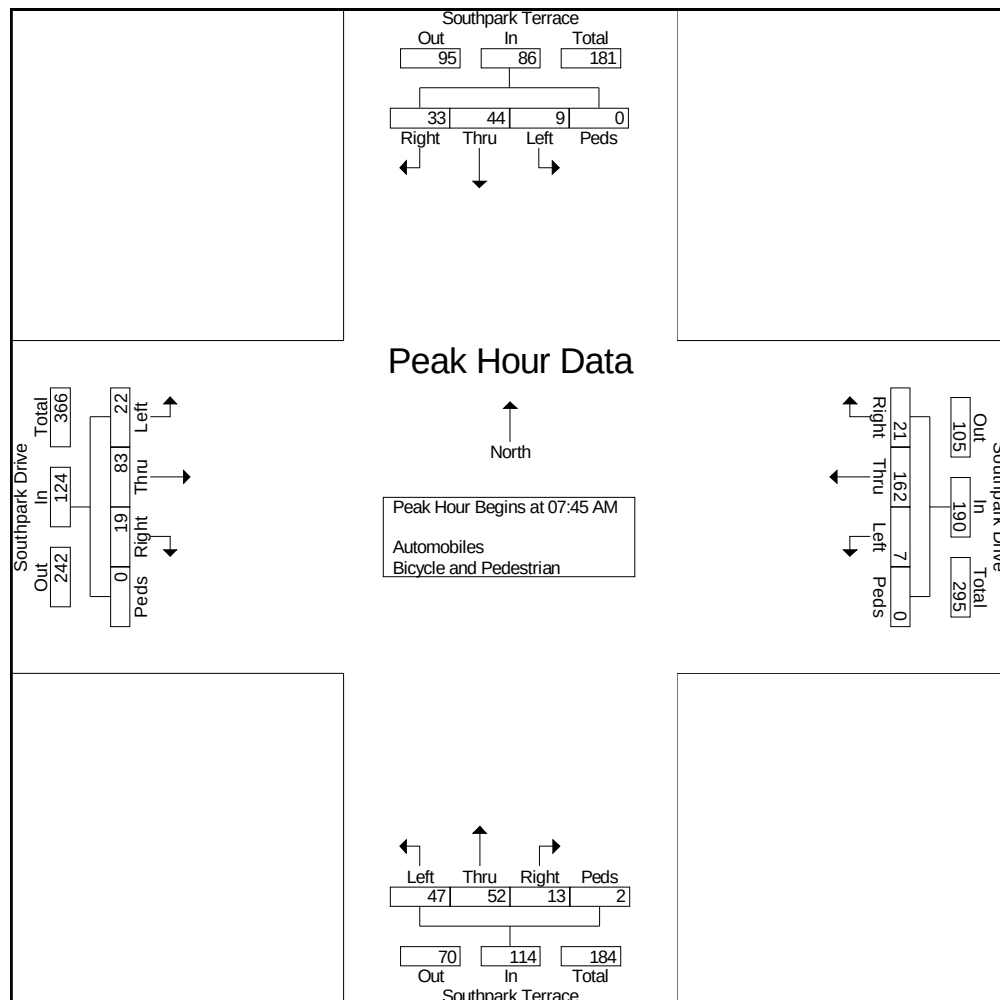


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Southpark Drive Eastbound					Southpark Drive Westbound					Southpark Terrace Northbound					Southpark Terrace 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 07:45 AM																					
07:45 AM	5	17	5	0	27	1	53	8	0	62	7	15	1	2	25	1	17	8	0	26	140
08:00 AM	7	26	8	0	41	0	41	3	0	44	15	11	4	0	30	2	6	7	0	15	130
08:15 AM	3	26	5	0	34	5	31	5	0	41	14	15	6	0	35	3	12	7	0	22	132
08:30 AM	7	14	1	0	22	1	37	5	0	43	11	11	2	0	24	3	9	11	0	23	112
Total Volume	22	83	19	0	124	7	162	21	0	190	47	52	13	2	114	9	44	33	0	86	514
% App. Total	17.7	66.9	15.3	0		3.7	85.3	11.1	0		41.2	45.6	11.4	1.8		10.5	51.2	38.4	0		
PHF	.786	.798	.594	.000	.756	.350	.764	.656	.000	.766	.783	.867	.542	.250	.814	.750	.647	.750	.000	.827	.918





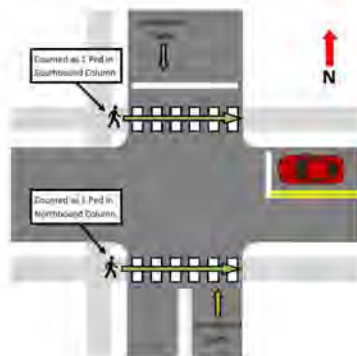
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

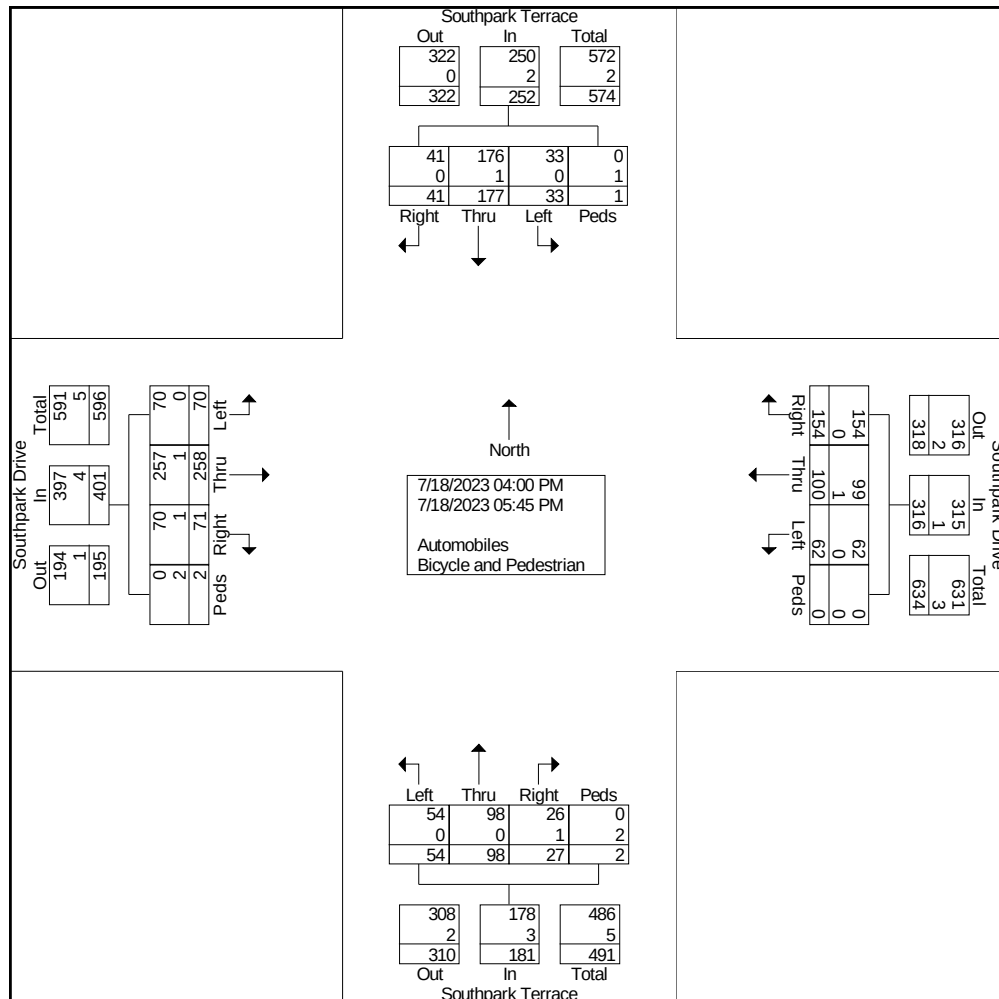
	Southpark Drive Eastbound					Southpark Drive Westbound					Southpark Terrace Northbound					Southpark Terrace Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	6	33	11	0	50	7	12	2	0	21	4	11	6	1	22	2	36	6	0	44	137
04:15 PM	8	31	8	0	47	7	10	10	0	27	7	14	2	0	23	7	19	7	0	33	130
04:30 PM	5	29	10	0	44	7	12	11	0	30	8	18	2	0	28	7	16	8	0	31	133
04:45 PM	15	27	6	1	49	8	15	16	0	39	6	8	3	1	18	4	18	5	1	28	134
Total	34	120	35	1	190	29	49	39	0	117	25	51	13	2	91	20	89	26	1	136	534
05:00 PM	17	41	12	0	70	9	10	23	0	42	8	19	5	0	32	3	33	3	0	39	183
05:15 PM	6	46	8	0	60	8	15	24	0	47	3	0	2	0	5	1	21	0	0	22	134
05:30 PM	8	33	8	1	50	7	6	32	0	45	10	0	4	0	14	3	21	4	0	28	137
05:45 PM	5	18	8	0	31	9	20	36	0	65	8	28	3	0	39	6	13	8	0	27	162
Total	36	138	36	1	211	33	51	115	0	199	29	47	14	0	90	13	88	15	0	116	616
Grand Total	70	258	71	2	401	62	100	154	0	316	54	98	27	2	181	33	177	41	1	252	1150
Apprch %	17.5	64.3	17.7	0.5		19.6	31.6	48.7	0		29.8	54.1	14.9	1.1		13.1	70.2	16.3	0.4		
Total %	6.1	22.4	6.2	0.2	34.9	5.4	8.7	13.4	0	27.5	4.7	8.5	2.3	0.2	15.7	2.9	15.4	3.6	0.1	21.9	
Automobiles	70	257	70	0	397	62	99	154	0	315	54	98	26	0	178	33	176	41	0	250	1140
% Automobiles	100	99.6	98.6	0	99	100	99	100	0	99.7	100	100	96.3	0	98.3	100	99.4	100	0	99.2	99.1
Bicycle and Pedestrian	0	1	1	2	4	0	1	0	0	1	0	0	1	2	3	0	1	0	1	2	10
% Bicycle and Pedestrian	0	0.4	1.4	100	1	0	1	0	0	0.3	0	0	3.7	100	1.7	0	0.6	0	100	0.8	0.9



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



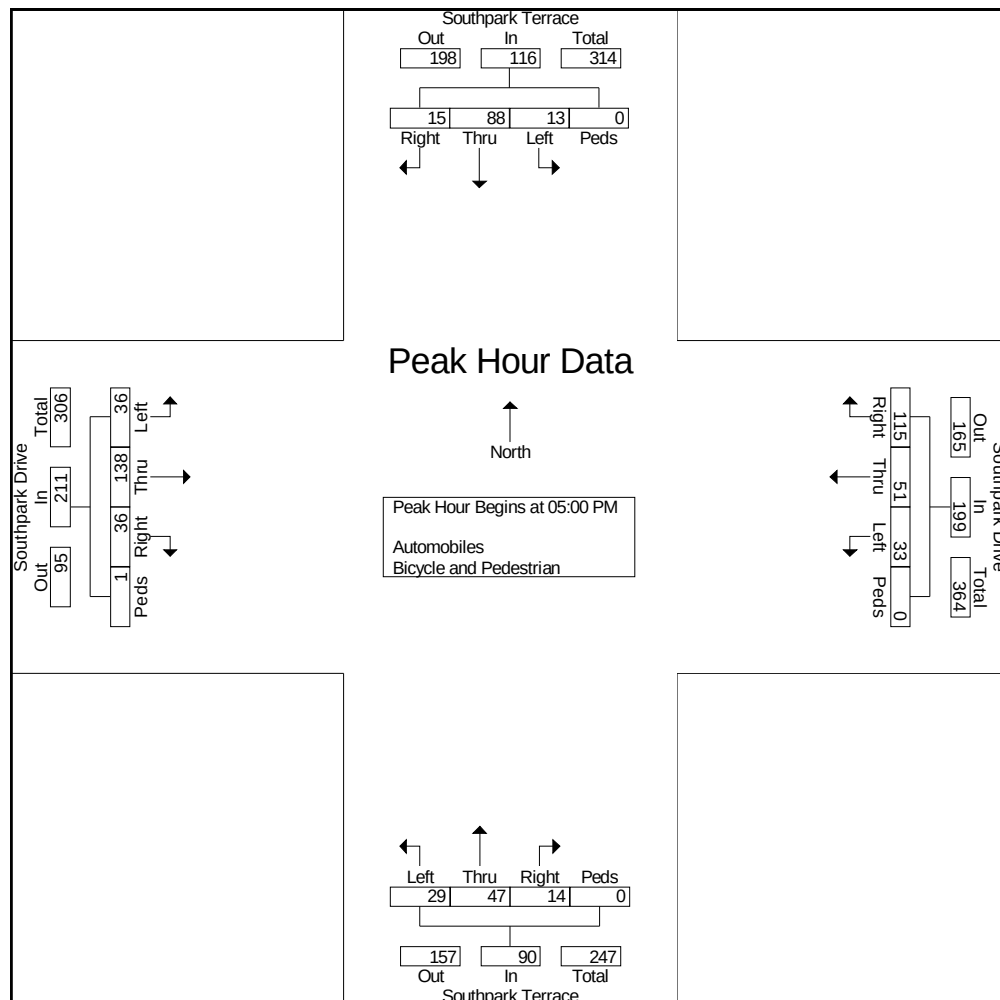


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Southpark Drive Eastbound					Southpark Drive Westbound					Southpark Terrace Northbound					Southpark Terrace 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 05:00 PM																					
05:00 PM	17	41	12	0	70	9	10	23	0	42	8	19	5	0	32	3	33	3	0	39	183
05:15 PM	6	46	8	0	60	8	15	24	0	47	3	0	2	0	5	1	21	0	0	22	134
05:30 PM	8	33	8	1	50	7	6	32	0	45	10	0	4	0	14	3	21	4	0	28	137
05:45 PM	5	18	8	0	31	9	20	36	0	65	8	28	3	0	39	6	13	8	0	27	162
Total Volume	36	138	36	1	211	33	51	115	0	199	29	47	14	0	90	13	88	15	0	116	616
% App. Total	17.1	65.4	17.1	0.5		16.6	25.6	57.8	0		32.2	52.2	15.6	0		11.2	75.9	12.9	0		
PHF	.529	.750	.750	.250	.754	.917	.638	.799	.000	.765	.725	.420	.700	.000	.577	.542	.667	.469	.000	.744	.842





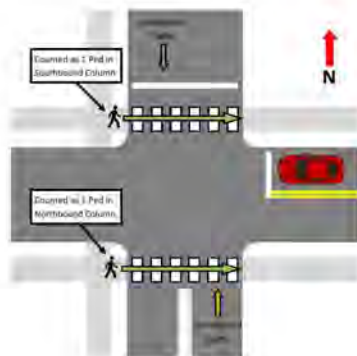
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Southpark Terrace

File Name : Southpark Dr and Southpark Terrace PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

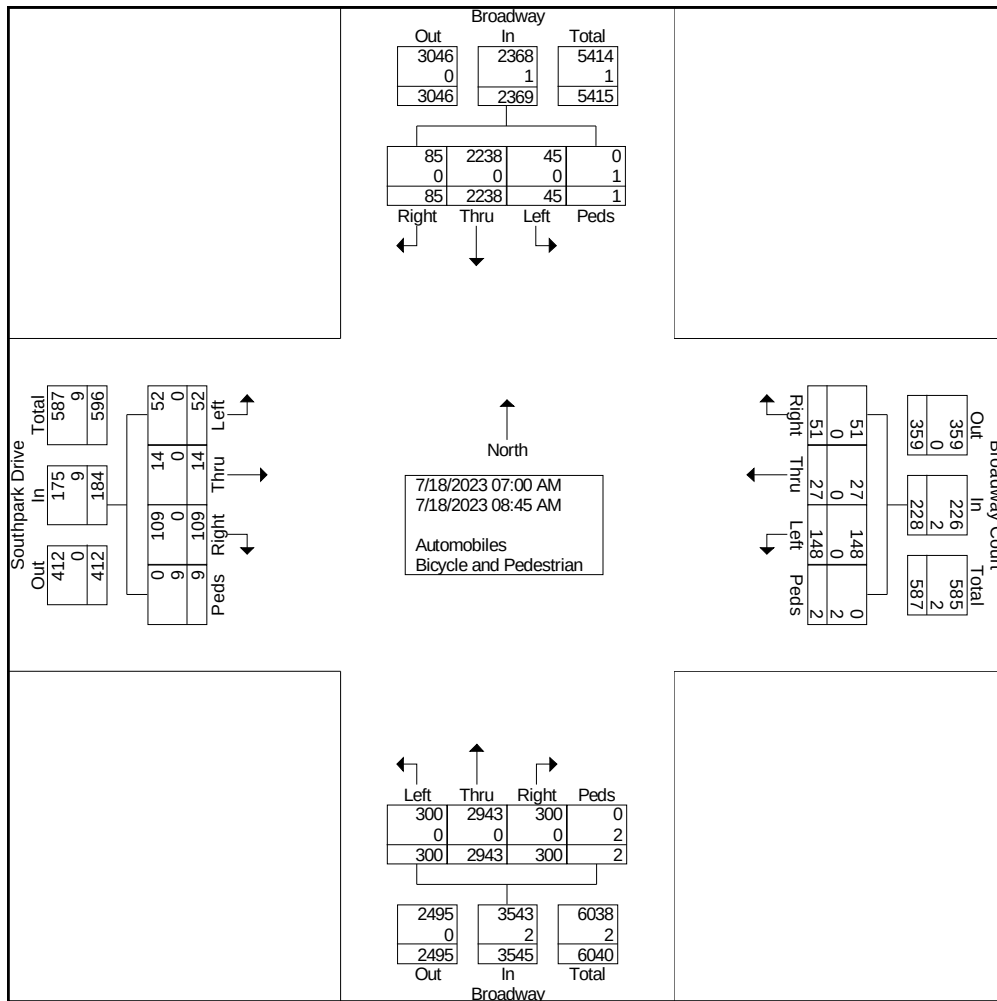
	Southpark Drive Eastbound					Broadway Court Westbound					Broadway Northbound					Broadway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	1	3	1	8	14	2	6	0	22	32	277	23	0	332	4	202	10	1	217	579
07:15 AM	4	1	6	0	11	16	1	4	0	21	33	324	37	0	394	0	234	9	0	243	669
07:30 AM	6	2	8	2	18	15	1	10	0	26	40	338	40	0	418	6	266	9	0	281	743
07:45 AM	3	0	17	2	22	20	2	3	0	25	48	437	37	0	522	4	306	16	0	326	895
Total	16	4	34	5	59	65	6	23	0	94	153	1376	137	0	1666	14	1008	44	1	1067	2886
08:00 AM	8	3	16	1	28	19	5	7	1	32	44	363	51	0	458	8	294	12	0	314	832
08:15 AM	6	2	26	1	35	22	4	10	0	36	39	387	34	1	461	6	302	9	0	317	849
08:30 AM	7	1	14	0	22	25	5	8	0	38	28	405	41	0	474	7	316	13	0	336	870
08:45 AM	15	4	19	2	40	17	7	3	1	28	36	412	37	1	486	10	318	7	0	335	889
Total	36	10	75	4	125	83	21	28	2	134	147	1567	163	2	1879	31	1230	41	0	1302	3440
Grand Total	52	14	109	9	184	148	27	51	2	228	300	2943	300	2	3545	45	2238	85	1	2369	6326
Apprch %	28.3	7.6	59.2	4.9		64.9	11.8	22.4	0.9		8.5	83	8.5	0.1		1.9	94.5	3.6	0		
Total %	0.8	0.2	1.7	0.1	2.9	2.3	0.4	0.8	0	3.6	4.7	46.5	4.7	0	56	0.7	35.4	1.3	0	37.4	
Automobiles	52	14	109	0	175	148	27	51	0	226	300	2943	300	0	3543	45	2238	85	0	2368	6312
% Automobiles	100	100	100	0	95.1	100	100	100	0	99.1	100	100	100	0	99.9	100	100	100	0	100	99.8
Bicycle and Pedestrian	0	0	0	9	9	0	0	0	2	2	0	0	0	2	2	0	0	0	1	1	14
% Bicycle and Pedestrian	0	0	0	100	4.9	0	0	0	100	0.9	0	0	0	100	0.1	0	0	0	100	0	0.2



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



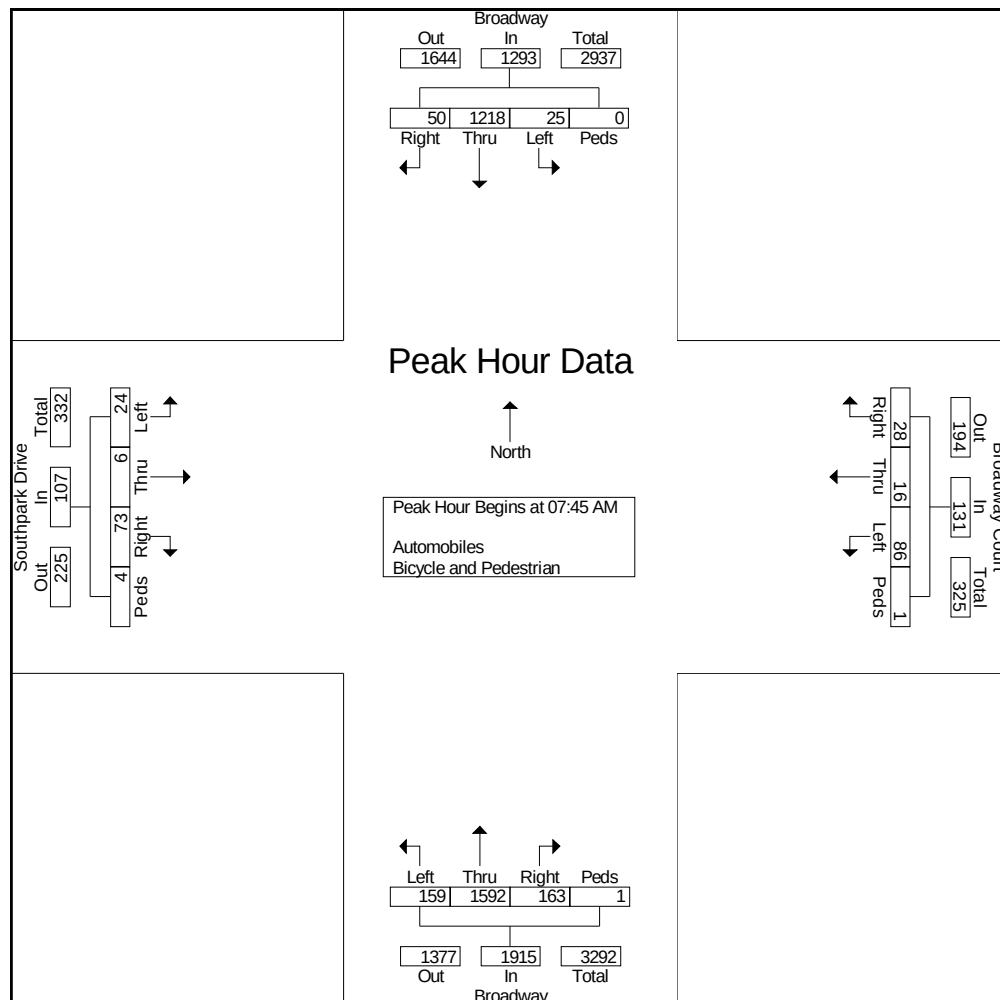


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Southpark Drive Eastbound					Broadway Court Westbound					Broadway Northbound					Broadway 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 07:45 AM																					
07:45 AM	3	0	17	2	22	20	2	3	0	25	48	437	37	0	522	4	306	16	0	326	895
08:00 AM	8	3	16	1	28	19	5	7	1	32	44	363	51	0	458	8	294	12	0	314	832
08:15 AM	6	2	26	1	35	22	4	10	0	36	39	387	34	1	461	6	302	9	0	317	849
08:30 AM	7	1	14	0	22	25	5	8	0	38	28	405	41	0	474	7	316	13	0	336	870
Total Volume	24	6	73	4	107	86	16	28	1	131	159	1592	163	1	1915	25	1218	50	0	1293	3446
% App. Total	22.4	5.6	68.2	3.7		65.6	12.2	21.4	0.8		8.3	83.1	8.5	0.1		1.9	94.2	3.9	0		
PHF	.750	.500	.702	.500	.764	.860	.800	.700	.250	.862	.828	.911	.799	.250	.917	.781	.964	.781	.000	.962	.963





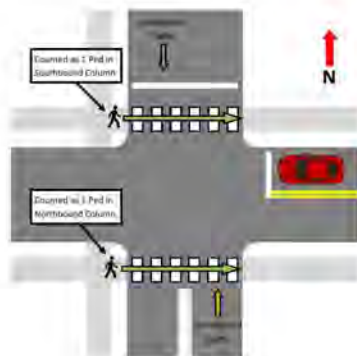
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway AM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

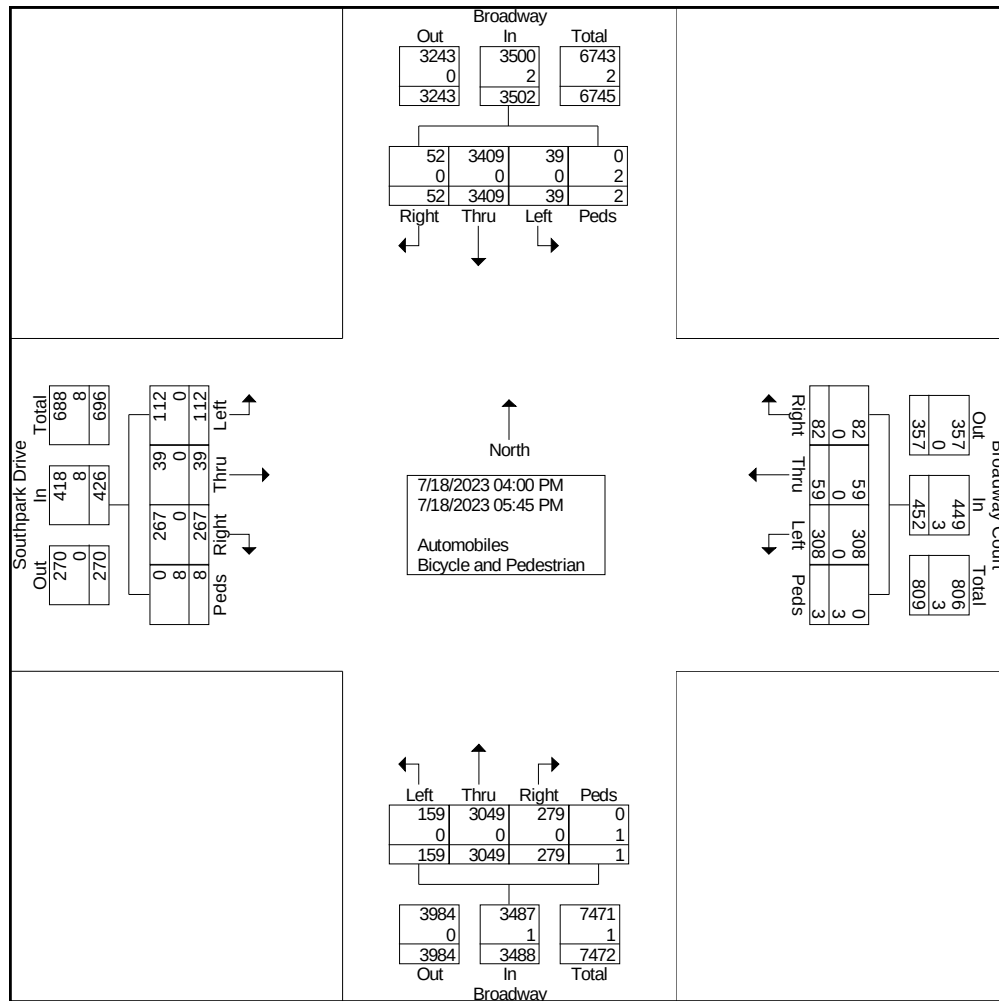
	Southpark Drive Eastbound					Broadway Court Westbound					Broadway Northbound					Broadway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	19	5	44	1	69	39	8	12	0	59	24	354	32	1	411	6	355	3	0	364	903
04:15 PM	10	9	28	0	47	31	7	7	0	45	17	367	41	0	425	4	469	9	1	483	1000
04:30 PM	14	4	42	1	61	37	11	14	0	62	21	336	24	0	381	4	397	6	0	407	911
04:45 PM	19	7	23	1	50	29	4	8	0	41	19	389	34	0	442	5	464	7	0	476	1009
Total	62	25	137	3	227	136	30	41	0	207	81	1446	131	1	1659	19	1685	25	1	1730	3823
05:00 PM	20	6	46	0	72	54	9	5	0	68	20	403	29	0	452	6	426	8	0	440	1032
05:15 PM	10	3	34	0	47	48	6	15	2	71	14	424	43	0	481	5	452	9	0	466	1065
05:30 PM	11	4	33	2	50	44	10	14	1	69	18	397	22	0	437	5	409	3	1	418	974
05:45 PM	9	1	17	3	30	26	4	7	0	37	26	379	54	0	459	4	437	7	0	448	974
Total	50	14	130	5	199	172	29	41	3	245	78	1603	148	0	1829	20	1724	27	1	1772	4045
Grand Total	112	39	267	8	426	308	59	82	3	452	159	3049	279	1	3488	39	3409	52	2	3502	7868
Apprch %	26.3	9.2	62.7	1.9		68.1	13.1	18.1	0.7		4.6	87.4	8	0		1.1	97.3	1.5	0.1		
Total %	1.4	0.5	3.4	0.1	5.4	3.9	0.7	1	0	5.7	2	38.8	3.5	0	44.3	0.5	43.3	0.7	0	44.5	
Automobiles	112	39	267	0	418	308	59	82	0	449	159	3049	279	0	3487	39	3409	52	0	3500	7854
% Automobiles	100	100	100	0	98.1	100	100	100	0	99.3	100	100	100	0	100	100	100	100	0	99.9	99.8
Bicycle and Pedestrian	0	0	0	8	8	0	0	0	3	3	0	0	0	1	1	0	0	0	2	2	14
% Bicycle and Pedestrian	0	0	0	100	1.9	0	0	0	100	0.7	0	0	0	100	0	0	0	0	100	0.1	0.2



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



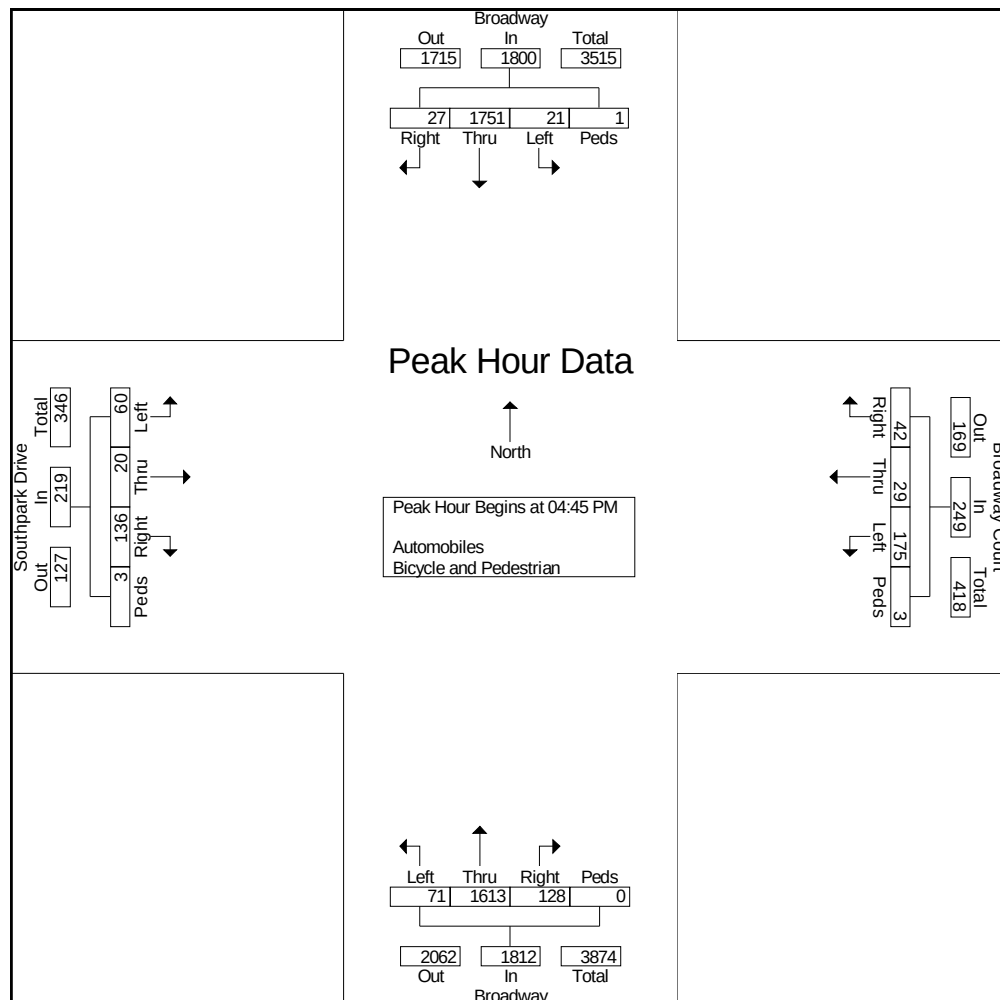


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	Southpark Drive Eastbound					Broadway Court Westbound					Broadway Northbound					Broadway 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 04:45 PM																					
04:45 PM	19	7	23	1	50	29	4	8	0	41	19	389	34	0	442	5	464	7	0	476	1009
05:00 PM	20	6	46	0	72	54	9	5	0	68	20	403	29	0	452	6	426	8	0	440	1032
05:15 PM	10	3	34	0	47	48	6	15	2	71	14	424	43	0	481	5	452	9	0	466	1065
05:30 PM	11	4	33	2	50	44	10	14	1	69	18	397	22	0	437	5	409	3	1	418	974
Total Volume	60	20	136	3	219	175	29	42	3	249	71	1613	128	0	1812	21	1751	27	1	1800	4080
% App. Total	27.4	9.1	62.1	1.4		70.3	11.6	16.9	1.2		3.9	89	7.1	0		1.2	97.3	1.5	0.1		
PHF	.750	.714	.739	.375	.760	.810	.725	.700	.375	.877	.888	.951	.744	.000	.942	.875	.943	.750	.250	.945	.958





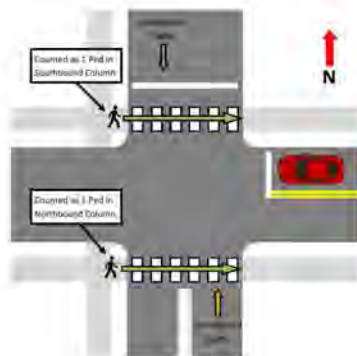
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
Southpark Dr and Broadway

File Name : Southpark Dr and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Littleton, CO
 KHA Mineral Ave Redevelopment P2
 AM Peak
 County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace AM
 Site Code : IPO 652
 Start Date : 9/27/2023
 Page No : 1

Groups Printed- Autos - Bike & Ped

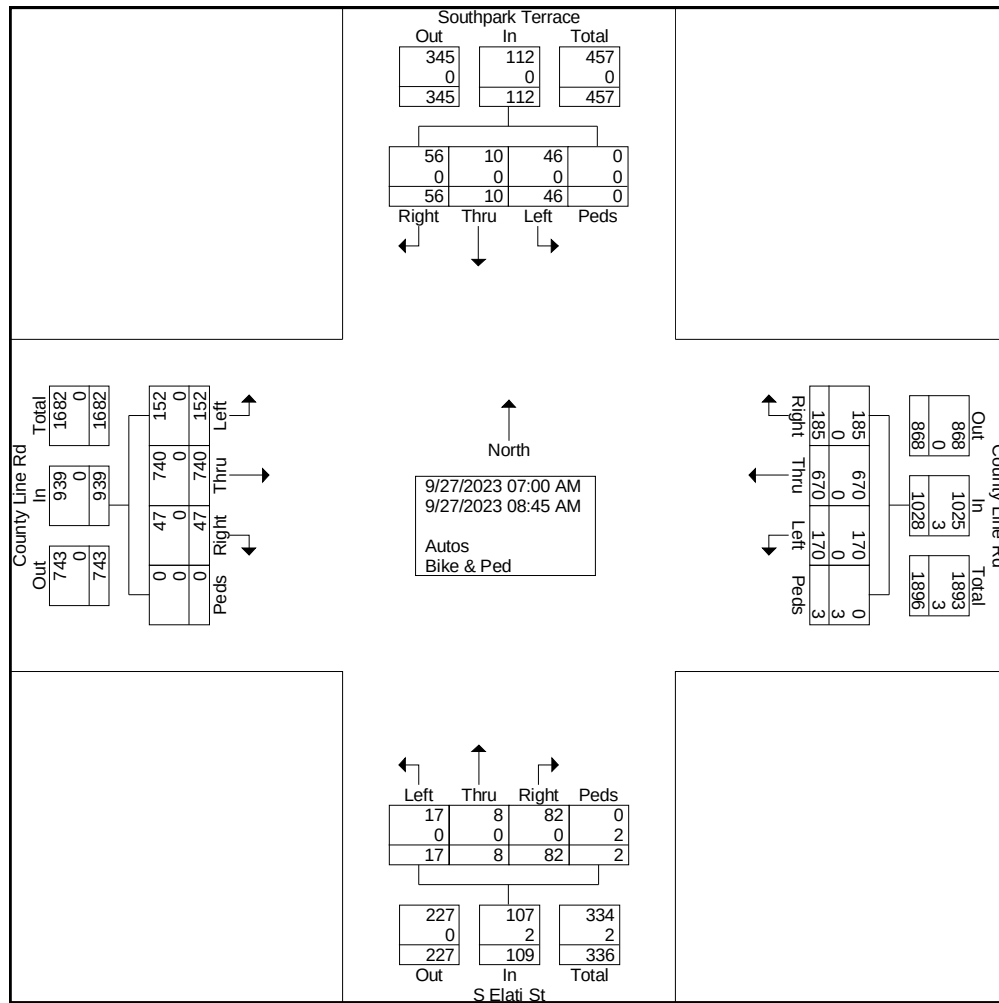
	County Line Rd Eastbound					County Line Rd Westbound					S Elati St Northbound					Southpark Terrace Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	7	59	1	0	67	17	56	4	1	78	1	0	5	0	6	3	1	4	0	8	159
07:15 AM	12	83	4	0	99	22	58	21	0	101	0	1	10	0	11	2	2	7	0	11	222
07:30 AM	17	95	5	0	117	18	88	16	1	123	1	0	14	0	15	6	2	6	0	14	269
07:45 AM	19	118	12	0	149	27	139	21	1	188	3	3	8	0	14	5	1	8	0	14	365
Total	55	355	22	0	432	84	341	62	3	490	5	4	37	0	46	16	6	25	0	47	1015
08:00 AM	17	120	5	0	142	18	74	15	0	107	5	2	12	0	19	11	0	8	0	19	287
08:15 AM	18	83	3	0	104	24	83	25	0	132	0	0	9	0	9	5	2	7	0	14	259
08:30 AM	24	95	8	0	127	17	85	19	0	121	1	0	10	1	12	7	1	9	0	17	277
08:45 AM	38	87	9	0	134	27	87	64	0	178	6	2	14	1	23	7	1	7	0	15	350
Total	97	385	25	0	507	86	329	123	0	538	12	4	45	2	63	30	4	31	0	65	1173
Grand Total	152	740	47	0	939	170	670	185	3	1028	17	8	82	2	109	46	10	56	0	112	2188
Apprch %	16.2	78.8	5	0		16.5	65.2	18	0.3		15.6	7.3	75.2	1.8		41.1	8.9	50	0		
Total %	6.9	33.8	2.1	0	42.9	7.8	30.6	8.5	0.1	47	0.8	0.4	3.7	0.1	5	2.1	0.5	2.6	0	5.1	
Autos	152	740	47	0	939	170	670	185	0	1025	17	8	82	0	107	46	10	56	0	112	2183
% Autos	100	100	100	0	100	100	100	100	0	99.7	100	100	100	0	98.2	100	100	100	0	100	99.8
Bike & Ped	0	0	0	0	0	0	0	0	3	3	0	0	0	2	2	0	0	0	0	0	5
% Bike & Ped	0	0	0	0	0	0	0	0	100	0.3	0	0	0	100	1.8	0	0	0	0	0	0.2



Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 2



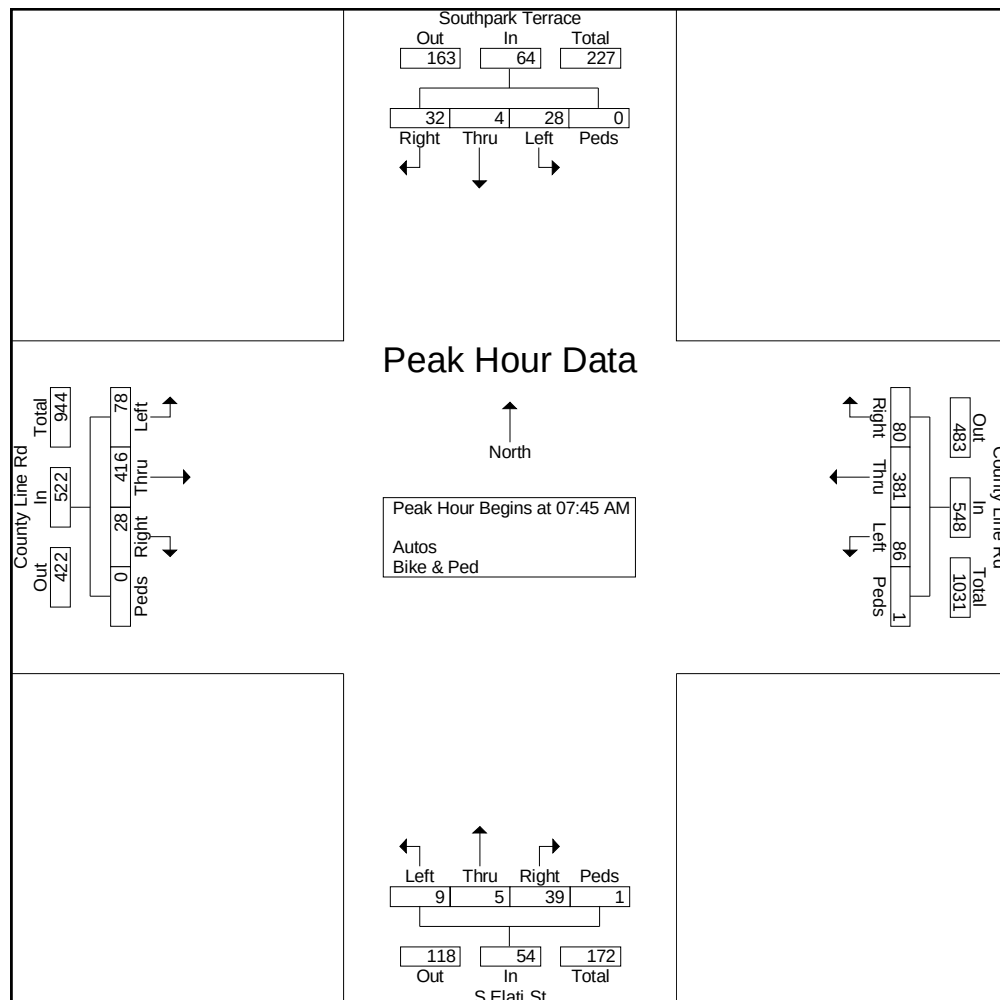


Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 3

	County Line Rd Eastbound					County Line Rd Westbound					S Elati St Northbound					Southpark Terrace 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 07:45 AM																					
07:45 AM	19	118	12	0	149	27	139	21	1	188	3	3	8	0	14	5	1	8	0	14	365
08:00 AM	17	120	5	0	142	18	74	15	0	107	5	2	12	0	19	11	0	8	0	19	287
08:15 AM	18	83	3	0	104	24	83	25	0	132	0	0	9	0	9	5	2	7	0	14	259
08:30 AM	24	95	8	0	127	17	85	19	0	121	1	0	10	1	12	7	1	9	0	17	277
Total Volume	78	416	28	0	522	86	381	80	1	548	9	5	39	1	54	28	4	32	0	64	1188
% App. Total	14.9	79.7	5.4	0		15.7	69.5	14.6	0.2		16.7	9.3	72.2	1.9		43.8	6.2	50	0		
PHF	.813	.867	.583	.000	.876	.796	.685	.800	.250	.729	.450	.417	.813	.250	.711	.636	.500	.889	.000	.842	.814





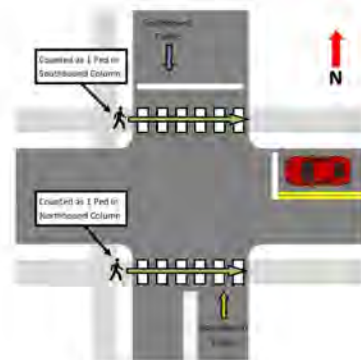
Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
AM Peak
County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace AM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





File Name : Cty Line & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 1

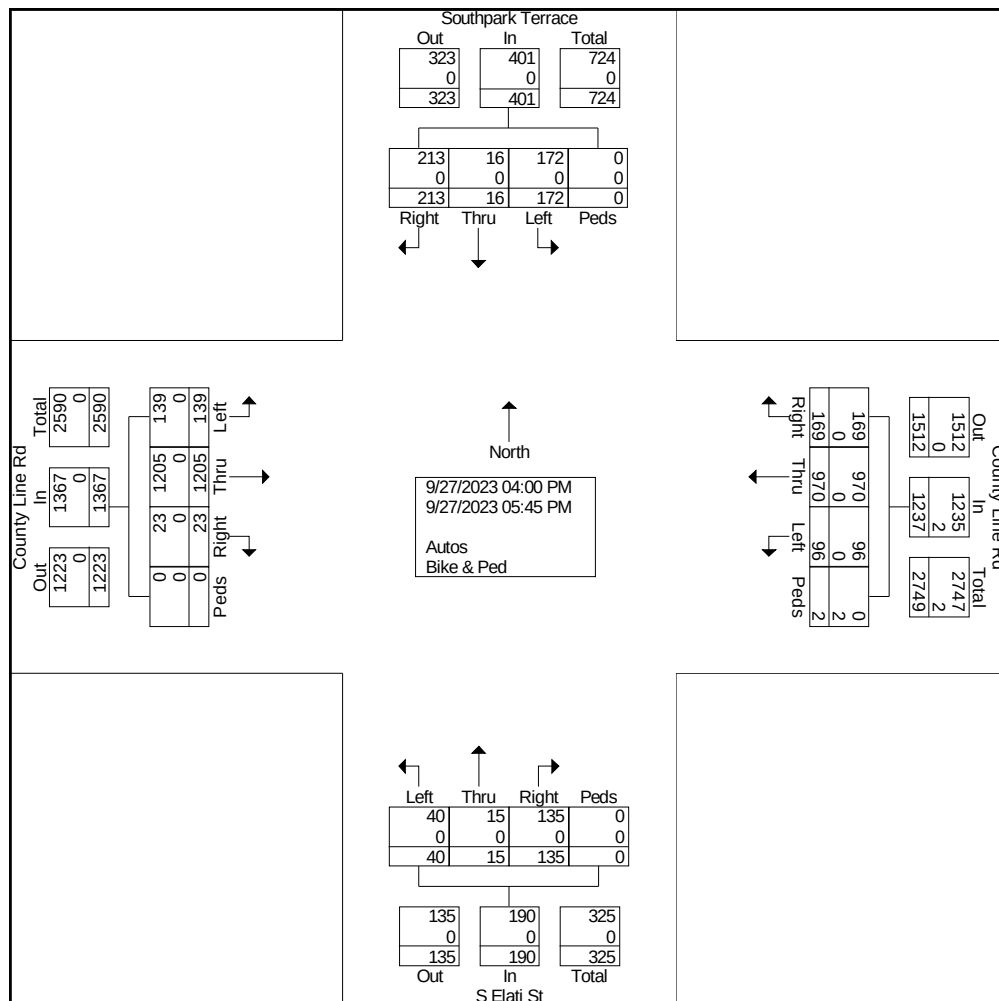
	County Line Rd Eastbound						County Line Rd Westbound					S Elati St Northbound					Southpark Terrace Southbound						
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total		
04:00 PM	10	176	2	0	188	14	119	9	0	142	9	1	14	0	24	20	2	25	0	47	401		
04:15 PM	22	155	5	0	182	15	120	18	0	153	1	2	17	0	20	14	1	26	0	41	396		
04:30 PM	13	166	4	0	183	18	117	12	0	147	3	4	8	0	15	25	3	29	0	57	402		
04:45 PM	11	146	1	0	158	11	120	13	0	144	6	1	20	0	27	15	2	27	0	44	373		
Total	56	643	12	0	711	58	476	52	0	586	19	8	59	0	86	74	8	107	0	189	1572		
05:00 PM	16	188	3	0	207	10	131	12	0	153	10	2	31	0	43	27	1	25	0	53	456		
05:15 PM	27	154	2	0	183	13	144	35	1	193	4	1	17	0	22	22	3	29	0	54	452		
05:30 PM	27	122	3	0	152	8	126	40	0	174	5	2	15	0	22	33	4	28	0	65	413		
05:45 PM	13	98	3	0	114	7	93	30	1	131	2	2	13	0	17	16	0	24	0	40	302		
Total	83	562	11	0	656	38	494	117	2	651	21	7	76	0	104	98	8	106	0	212	1623		
Grand Total	139	1205	23	0	1367	96	970	169	2	1237	40	15	135	0	190	172	16	213	0	401	3195		
Apprch %	10.2	88.1	1.7	0		7.8	78.4	13.7	0.2		21.1	7.9	71.1	0		42.9	4	53.1	0				
Total %	4.4	37.7	0.7	0	42.8	3	30.4	5.3	0.1	38.7	1.3	0.5	4.2	0	5.9	5.4	0.5	6.7	0	12.6			
Autos	139	1205	23	0	1367	96	970	169	0	1235	40	15	135	0	190	172	16	213	0	401	3193		
% Autos	100	100	100	0	100	100	100	100	0	99.8	100	100	100	0	100	100	100	100	0	100	99.9		
Bike & Ped	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2		
% Bike & Ped	0	0	0	0	0	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0.1		



Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 2



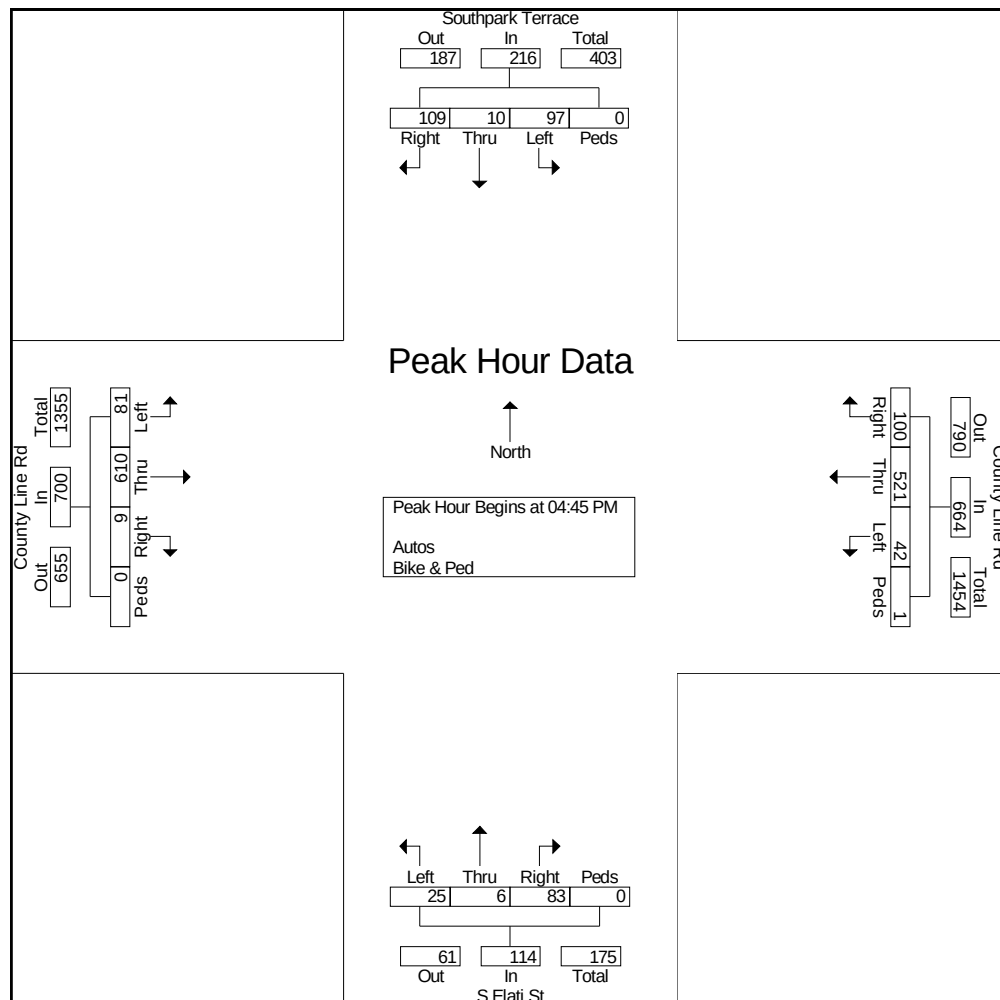


Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 3

	County Line Rd Eastbound					County Line Rd Westbound					S Elati St Northbound					Southpark Terrace 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 04:45 PM																					
04:45 PM	11	146	1	0	158	11	120	13	0	144	6	1	20	0	27	15	2	27	0	44	373
05:00 PM	16	188	3	0	207	10	131	12	0	153	10	2	31	0	43	27	1	25	0	53	456
05:15 PM	27	154	2	0	183	13	144	35	1	193	4	1	17	0	22	22	3	29	0	54	452
05:30 PM	27	122	3	0	152	8	126	40	0	174	5	2	15	0	22	33	4	28	0	65	413
Total Volume	81	610	9	0	700	42	521	100	1	664	25	6	83	0	114	97	10	109	0	216	1694
% App. Total	11.6	87.1	1.3	0		6.3	78.5	15.1	0.2		21.9	5.3	72.8	0		44.9	4.6	50.5	0		
PHF	.750	.811	.750	.000	.845	.808	.905	.625	.250	.860	.625	.750	.669	.000	.663	.735	.625	.940	.000	.831	.929





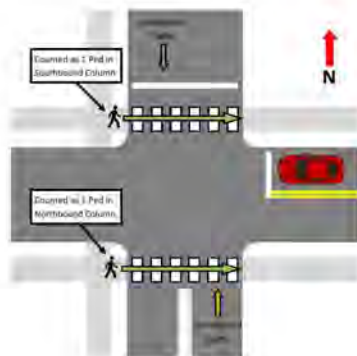
Ridgeview Data
Collection

Littleton, CO
KHA Mineral Ave Redevelopment P2
PM Peak
County Line Rd & Southpark Terrace

File Name : Cty Line & SP Terrace PM
Site Code : IPO 652
Start Date : 9/27/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

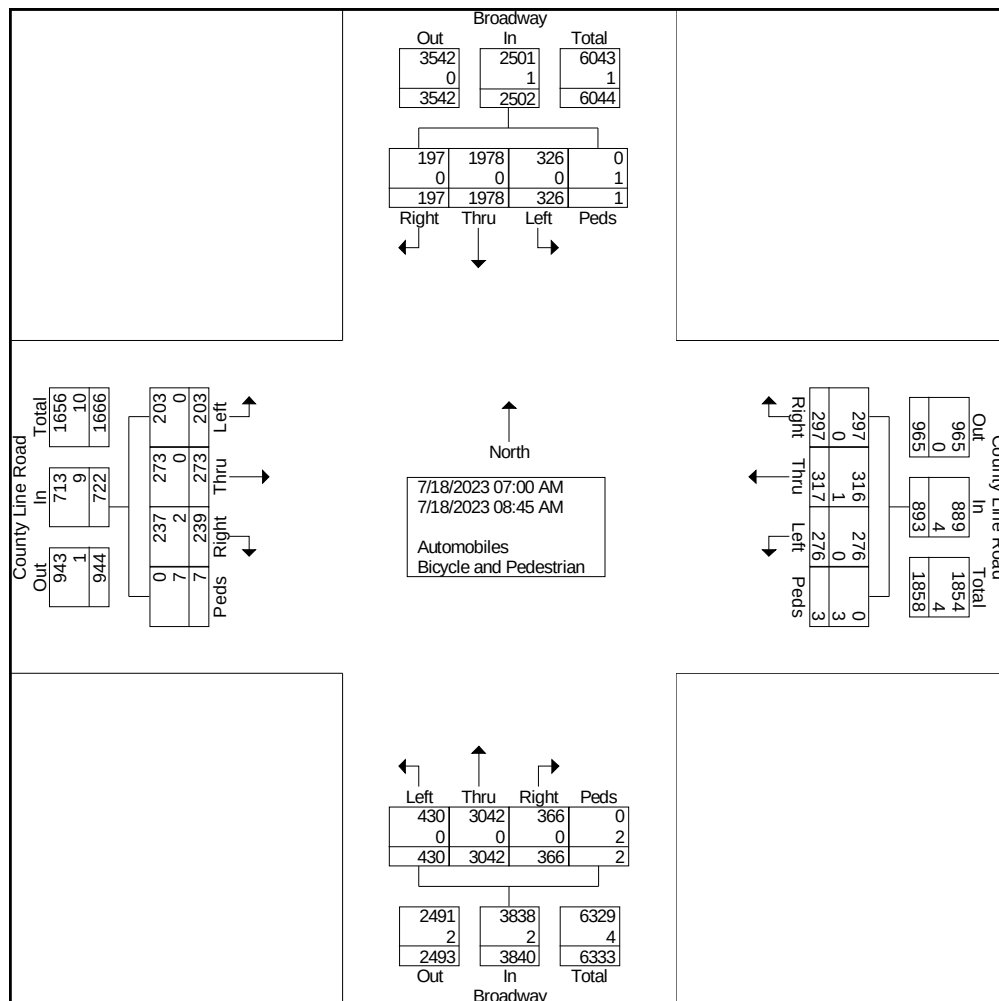
	County Line Road Eastbound					County Line Road Westbound					Broadway Northbound					Broadway Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	14	24	18	0	56	27	21	34	0	82	42	291	24	0	357	29	164	10	0	203	698
07:15 AM	23	19	18	0	60	22	25	28	0	75	40	338	36	0	414	32	220	21	0	273	822
07:30 AM	29	36	19	1	85	44	38	28	1	111	44	356	39	1	440	35	229	21	1	286	922
07:45 AM	29	39	23	1	92	41	38	33	1	113	66	474	62	1	603	45	266	30	0	341	1149
Total	95	118	78	2	293	134	122	123	2	381	192	1459	161	2	1814	141	879	82	1	1103	3591
08:00 AM	29	29	45	1	104	39	50	34	1	124	68	376	55	0	499	38	244	21	0	303	1030
08:15 AM	21	38	32	2	93	26	38	52	0	116	64	395	46	0	505	47	294	37	0	378	1092
08:30 AM	35	44	47	0	126	34	62	48	0	144	57	375	54	0	486	58	266	25	0	349	1105
08:45 AM	23	44	37	2	106	43	45	40	0	128	49	437	50	0	536	42	295	32	0	369	1139
Total	108	155	161	5	429	142	195	174	1	512	238	1583	205	0	2026	185	1099	115	0	1399	4366
Grand Total	203	273	239	7	722	276	317	297	3	893	430	3042	366	2	3840	326	1978	197	1	2502	7957
Apprch %	28.1	37.8	33.1	1		30.9	35.5	33.3	0.3		11.2	79.2	9.5	0.1		13	79.1	7.9	0		
Total %	2.6	3.4	3	0.1	9.1	3.5	4	3.7	0	11.2	5.4	38.2	4.6	0	48.3	4.1	24.9	2.5	0	31.4	
Automobiles	203	273	237	0	713	276	316	297	0	889	430	3042	366	0	3838	326	1978	197	0	2501	7941
% Automobiles	100	100	99.2	0	98.8	100	99.7	100	0	99.6	100	100	100	0	99.9	100	100	100	0	100	99.8
Bicycle and Pedestrian	0	0	2	7	9	0	1	0	3	4	0	0	0	2	2	0	0	0	1	1	16
% Bicycle and Pedestrian	0	0	0.8	100	1.2	0	0.3	0	100	0.4	0	0	0	100	0.1	0	0	0	100	0	0.2



Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2



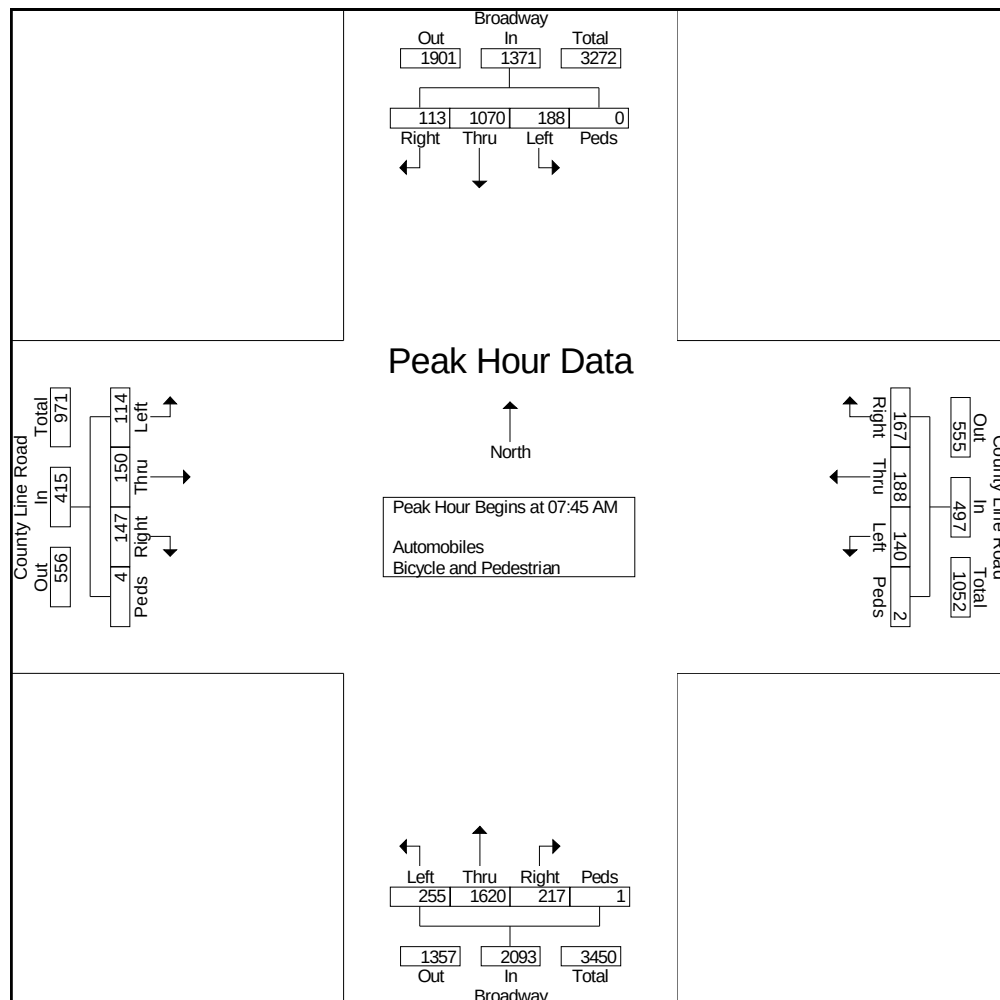


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	County Line Road Eastbound					County Line Road Westbound					Broadway Northbound					Broadway 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 07:45 AM																					
07:45 AM	29	39	23	1	92	41	38	33	1	113	66	474	62	1	603	45	266	30	0	341	1149
08:00 AM	29	29	45	1	104	39	50	34	1	124	68	376	55	0	499	38	244	21	0	303	1030
08:15 AM	21	38	32	2	93	26	38	52	0	116	64	395	46	0	505	47	294	37	0	378	1092
08:30 AM	35	44	47	0	126	34	62	48	0	144	57	375	54	0	486	58	266	25	0	349	1105
Total Volume	114	150	147	4	415	140	188	167	2	497	255	1620	217	1	2093	188	1070	113	0	1371	4376
% App. Total	27.5	36.1	35.4	1		28.2	37.8	33.6	0.4		12.2	77.4	10.4	0		13.7	78	8.2	0		
PHF	.814	.852	.782	.500	.823	.854	.758	.803	.500	.863	.938	.854	.875	.250	.868	.810	.910	.764	.000	.907	.952





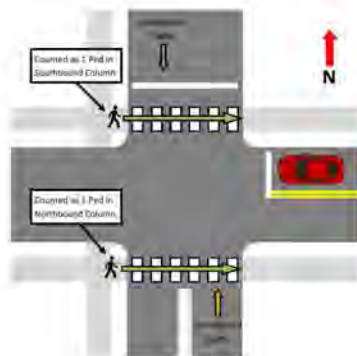
Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
AM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

	County Line Road Eastbound					County Line Road Westbound					Broadway Northbound					Broadway 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	45	80	47	1	173	55	62	58	0	175	34	334	87	0	455	50	390	34	0	474	1277
04:15 PM	38	64	44	2	148	50	76	71	0	197	49	288	77	0	414	52	405	27	0	484	1243
04:30 PM	34	71	66	1	172	66	66	61	0	193	42	321	93	0	456	51	427	29	0	507	1328
04:45 PM	36	74	67	0	177	68	92	73	0	233	38	293	78	0	409	61	407	25	1	494	1313
Total	153	289	224	4	670	239	296	263	0	798	163	1236	335	0	1734	214	1629	115	1	1959	5161
05:00 PM	33	74	66	0	173	66	82	68	0	216	39	362	91	0	492	55	489	26	0	570	1451
05:15 PM	33	85	94	0	212	59	94	79	3	235	54	344	60	0	458	63	410	25	0	498	1403
05:30 PM	22	43	69	0	134	78	83	64	0	225	29	379	76	0	484	43	453	29	1	526	1369
05:45 PM	27	43	42	2	114	64	71	55	0	190	43	356	59	0	458	45	411	26	0	482	1244
Total	115	245	271	2	633	267	330	266	3	866	165	1441	286	0	1892	206	1763	106	1	2076	5467
Grand Total	268	534	495	6	1303	506	626	529	3	1664	328	2677	621	0	3626	420	3392	221	2	4035	10628
Apprch %	20.6	41	38	0.5		30.4	37.6	31.8	0.2		9	73.8	17.1	0		10.4	84.1	5.5	0		
Total %	2.5	5	4.7	0.1	12.3	4.8	5.9	5	0	15.7	3.1	25.2	5.8	0	34.1	4	31.9	2.1	0	38	
Automobiles	268	534	493	0	1295	506	626	529	0	1661	328	2677	621	0	3626	420	3392	221	0	4033	10615
% Automobiles	100	100	99.6	0	99.4	100	100	100	0	99.8	100	100	100	0	100	100	100	100	0	100	99.9
Bicycle and Pedestrian	0	0	2	6	8	0	0	0	3	3	0	0	0	0	0	0	0	0	2	2	13
% Bicycle and Pedestrian	0	0	0.4	100	0.6	0	0	0	100	0.2	0	0	0	0	0	0	0	0	100	0	0.1



File Name : Cty Line Rd and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 2

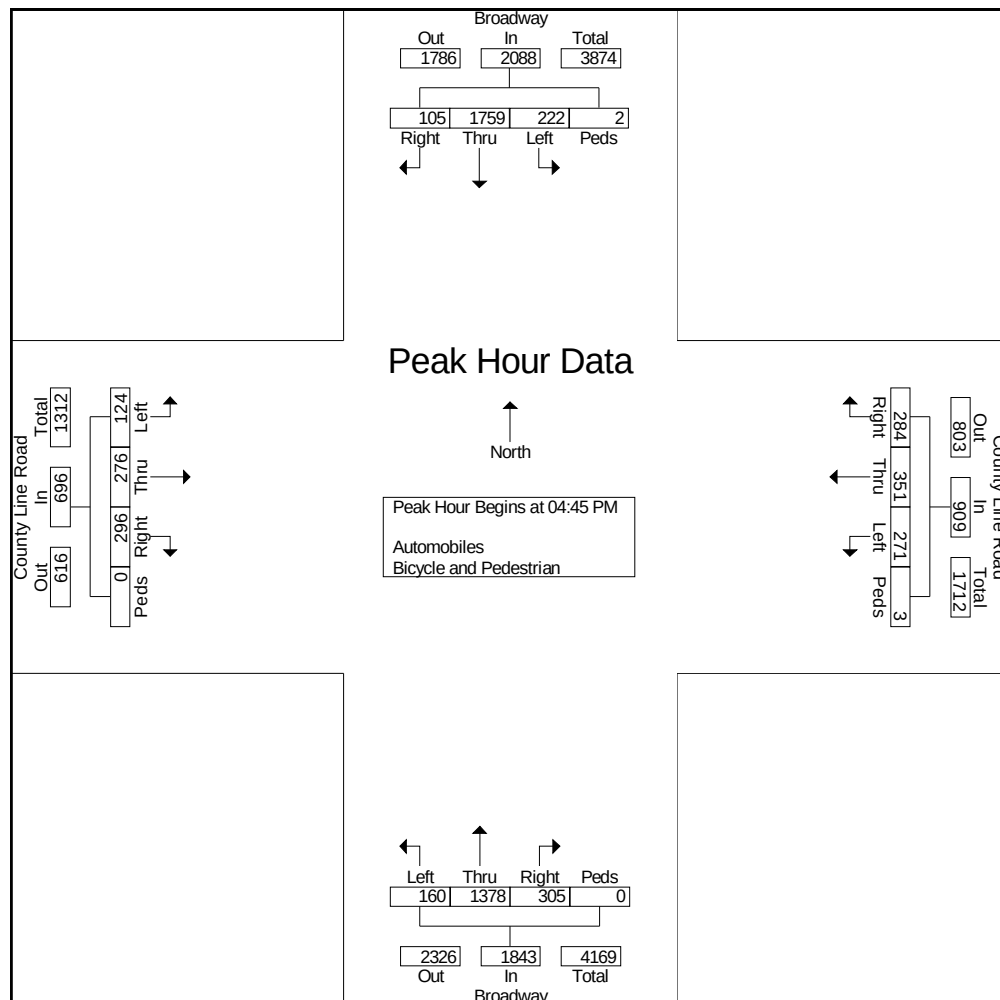


Ridgeview Data
Collection

Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 3

	County Line Road Eastbound					County Line Road Westbound					Broadway Northbound					Broadway 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 04:45 PM																					
04:45 PM	36	74	67	0	177	68	92	73	0	233	38	293	78	0	409	61	407	25	1	494	1313
05:00 PM	33	74	66	0	173	66	82	68	0	216	39	362	91	0	492	55	489	26	0	570	1451
05:15 PM	33	85	94	0	212	59	94	79	3	235	54	344	60	0	458	63	410	25	0	498	1403
05:30 PM	22	43	69	0	134	78	83	64	0	225	29	379	76	0	484	43	453	29	1	526	1369
Total Volume	124	276	296	0	696	271	351	284	3	909	160	1378	305	0	1843	222	1759	105	2	2088	5536
% App. Total	17.8	39.7	42.5	0		29.8	38.6	31.2	0.3		8.7	74.8	16.5	0		10.6	84.2	5	0.1		
PHF	.861	.812	.787	.000	.821	.869	.934	.899	.250	.967	.741	.909	.838	.000	.936	.881	.899	.905	.500	.916	.954

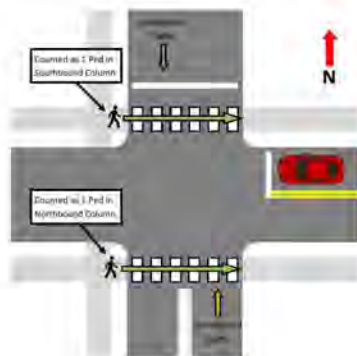


Littleton, CO
Littleton Mineral Ave Redevelopment
PM Peak
County Line Rd and Broadway

File Name : Cty Line Rd and Broadway PM
Site Code : KHA 646
Start Date : 7/18/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Ridgeview Data
Collection

Littleton, CO
Mineral Ave Redevelopment Part 3
AM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula AM
Site Code : IPO 652
Start Date : 11/1/2023
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

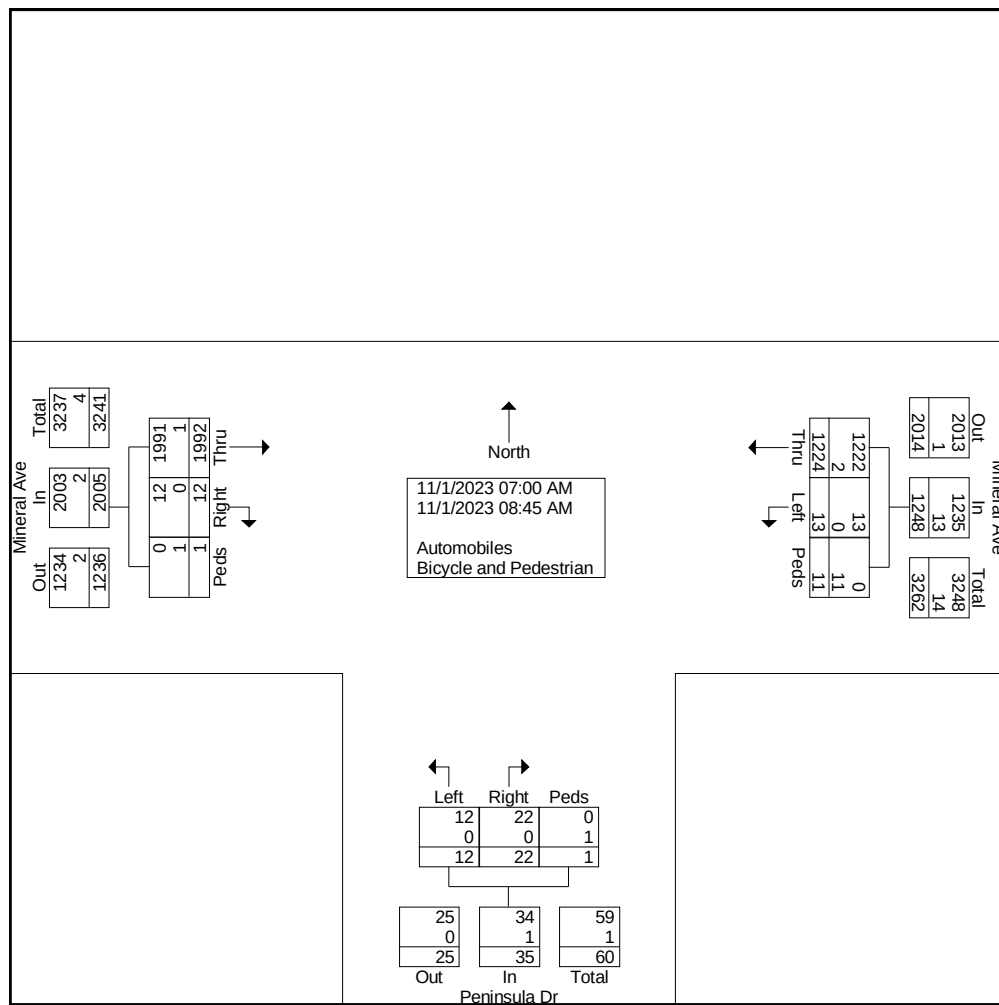
Start Time	Mineral Ave Eastbound				Mineral Ave Westbound				Peninsula Dr Northbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
07:00 AM	164	0	0	164	0	107	4	111	1	0	0	1	276
07:15 AM	230	2	0	232	2	119	0	121	0	2	0	2	355
07:30 AM	250	3	0	253	1	130	2	133	1	4	0	5	391
07:45 AM	338	0	1	339	3	189	3	195	2	1	0	3	537
Total	982	5	1	988	6	545	9	560	4	7	0	11	1559
08:00 AM	308	2	0	310	5	181	1	187	0	3	1	4	501
08:15 AM	222	1	0	223	0	175	0	175	2	3	0	5	403
08:30 AM	238	1	0	239	1	164	1	166	5	0	0	5	410
08:45 AM	242	3	0	245	1	159	0	160	1	9	0	10	415
Total	1010	7	0	1017	7	679	2	688	8	15	1	24	1729
Grand Total	1992	12	1	2005	13	1224	11	1248	12	22	1	35	3288
Apprch %	99.4	0.6	0		1	98.1	0.9		34.3	62.9	2.9		
Total %	60.6	0.4	0	61	0.4	37.2	0.3	38	0.4	0.7	0	1.1	
Automobiles	1991	12	0	2003	13	1222	0	1235	12	22	0	34	3272
% Automobiles	99.9	100	0	99.9	100	99.8	0	99	100	100	0	97.1	99.5
Bicycle and Pedestrian	1	0	1	2	0	2	11	13	0	0	1	1	16
% Bicycle and Pedestrian	0.1	0	100	0.1	0	0.2	100	1	0	0	100	2.9	0.5



Ridgeview Data
Collection

Littleton, CO
Mineral Ave Redevelopment Part 3
AM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula AM
Site Code : IPO 652
Start Date : 11/1/2023
Page No : 2



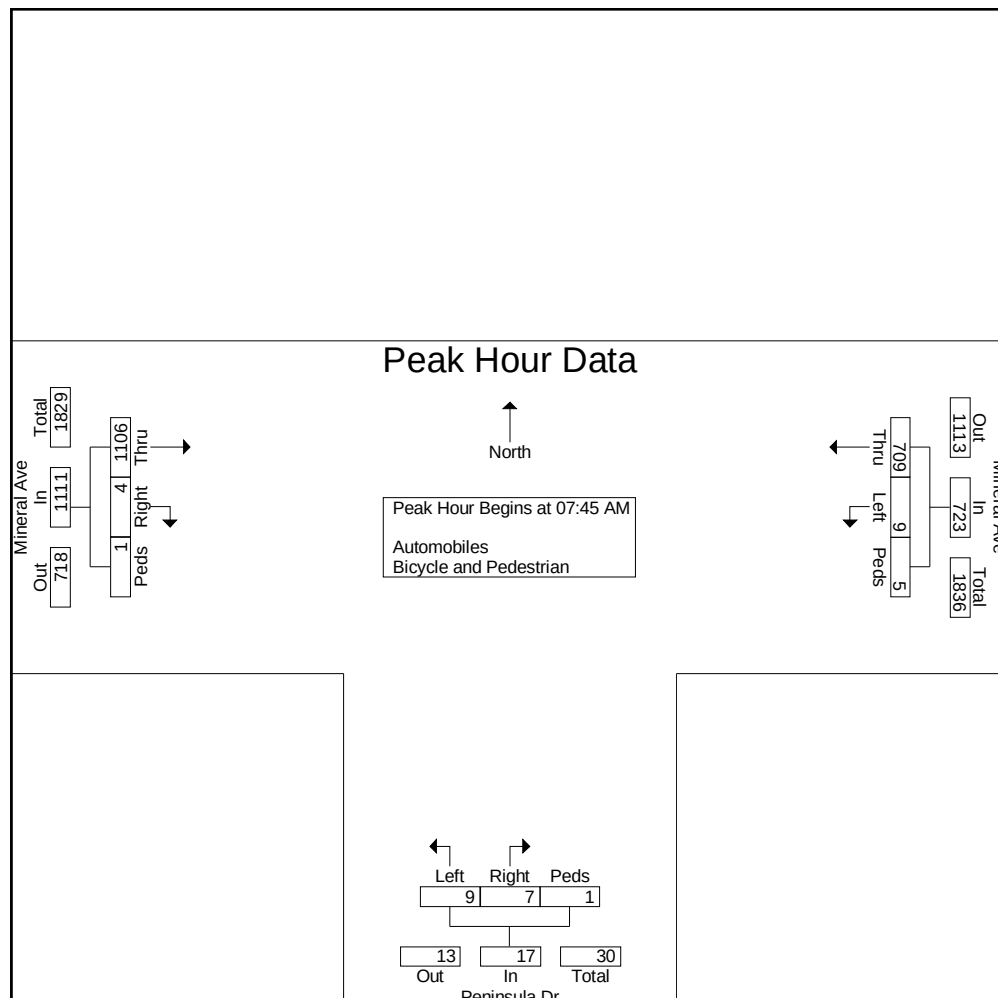


Ridgeview Data
Collection

Littleton, CO
Mineral Ave Redevelopment Part 3
AM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula AM
Site Code : IPO 652
Start Date : 11/1/2023
Page No : 3

	Mineral Ave Eastbound				Mineral Ave Westbound				Peninsula Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	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 07:45 AM													
07:45 AM	338	0	1	339	3	189	3	195	2	1	0	3	537
08:00 AM	308	2	0	310	5	181	1	187	0	3	1	4	501
08:15 AM	222	1	0	223	0	175	0	175	2	3	0	5	403
08:30 AM	238	1	0	239	1	164	1	166	5	0	0	5	410
Total Volume	1106	4	1	1111	9	709	5	723	9	7	1	17	1851
% App. Total	99.5	0.4	0.1		1.2	98.1	0.7		52.9	41.2	5.9		
PHF	.818	.500	.250	.819	.450	.938	.417	.927	.450	.583	.250	.850	.862





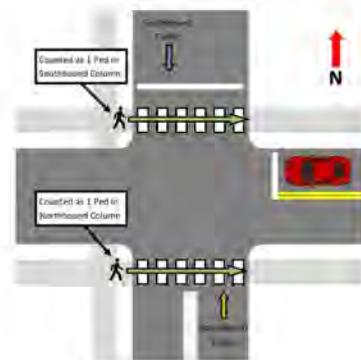
Ridgeview Data
Collection

Littleton, CO
Mineral Ave Redevelopment Part 3
AM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula AM
Site Code : IPO 652
Start Date : 11/1/2023
Page No : 4

Image 1

The number of pedestrians shown on this report is representative of the crossing on the approaching leg, i.e. pedestrians crossing the north side of the intersection are counted as pedestrians in the southbound crosswalk, as that is the approaching leg that they are crossing (see figure below). Diagonal crossings are counted on the two legs that will get the pedestrian to the same end point. Diagonals can be counted separately if discussed prior to count.





Littleton, CO
 Mineral Ave Redevelopment Part 3
 PM Peak
 Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula PM
 Site Code : IPO 652
 Start Date : 10/31/2023
 Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

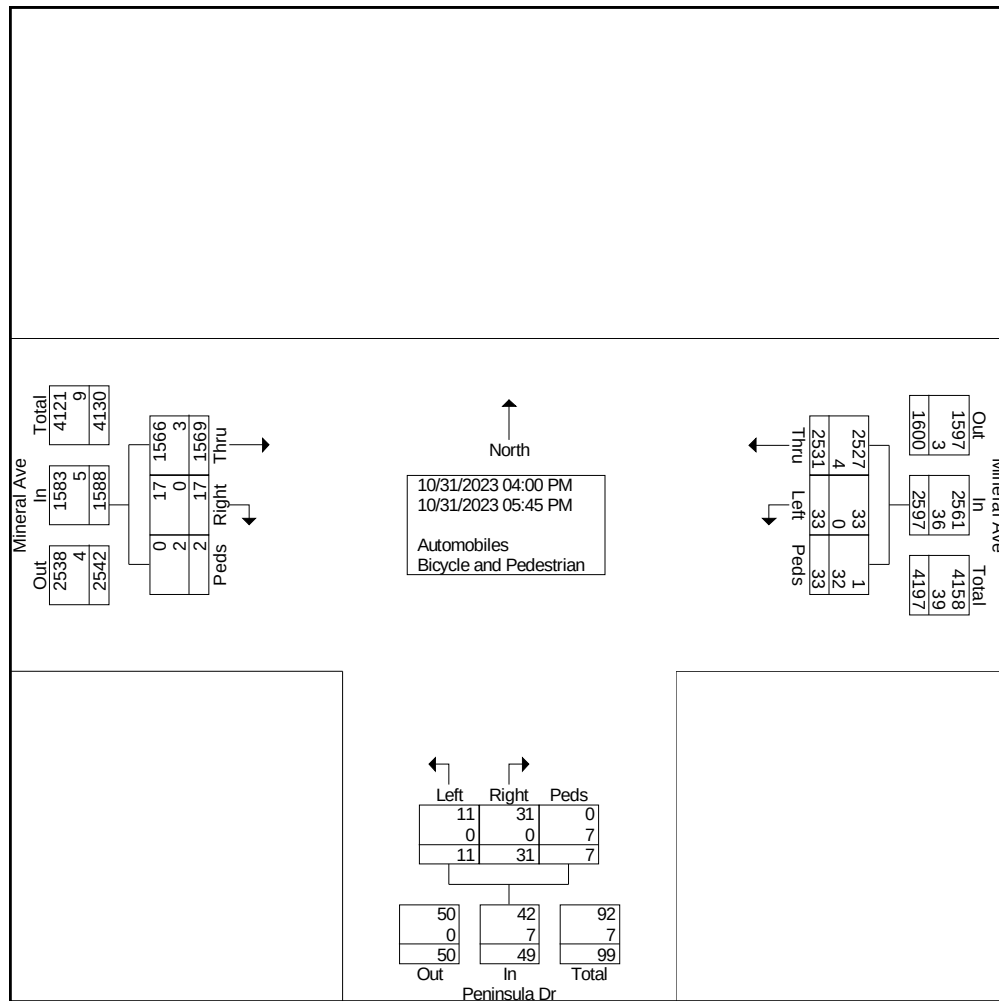
	Mineral Ave Eastbound				Mineral Ave Westbound				Peninsula Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
04:00 PM	200	2	1	203	1	352	5	358	1	6	0	7	568
04:15 PM	218	3	0	221	4	314	4	322	2	1	2	5	548
04:30 PM	206	5	0	211	6	318	4	328	0	7	1	8	547
04:45 PM	196	3	0	199	7	302	4	313	2	6	0	8	520
Total	820	13	1	834	18	1286	17	1321	5	20	3	28	2183
05:00 PM	216	1	1	218	6	396	3	405	1	2	0	3	626
05:15 PM	192	0	0	192	3	319	0	322	2	2	3	7	521
05:30 PM	184	0	0	184	4	313	4	321	1	3	1	5	510
05:45 PM	157	3	0	160	2	217	9	228	2	4	0	6	394
Total	749	4	1	754	15	1245	16	1276	6	11	4	21	2051
Grand Total	1569	17	2	1588	33	2531	33	2597	11	31	7	49	4234
Apprch %	98.8	1.1	0.1		1.3	97.5	1.3		22.4	63.3	14.3		
Total %	37.1	0.4	0	37.5	0.8	59.8	0.8	61.3	0.3	0.7	0.2	1.2	
Automobiles	1566	17	0	1583	33	2527	1	2561	11	31	0	42	4186
% Automobiles	99.8	100	0	99.7	100	99.8	3	98.6	100	100	0	85.7	98.9
Bicycle and Pedestrian	3	0	2	5	0	4	32	36	0	0	7	7	48
% Bicycle and Pedestrian	0.2	0	100	0.3	0	0.2	97	1.4	0	0	100	14.3	1.1



Ridgeview Data
Collection

Littleton, CO
Mineral Ave Redevelopment Part 3
PM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula PM
Site Code : IPO 652
Start Date : 10/31/2023
Page No : 2



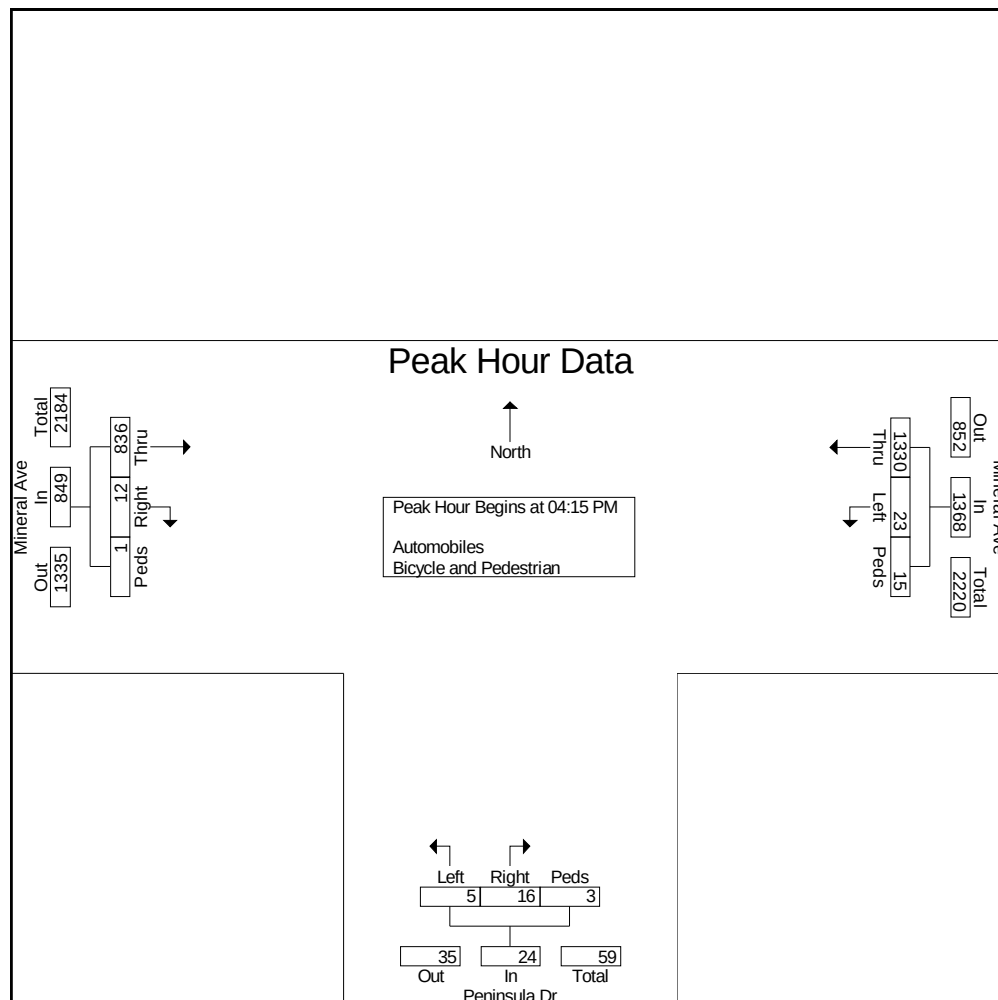


Ridgeview Data
Collection

Littleton, CO
Mineral Ave Redevelopment Part 3
PM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula PM
Site Code : IPO 652
Start Date : 10/31/2023
Page No : 3

	Mineral Ave Eastbound				Mineral Ave Westbound				Peninsula Dr Northbound				
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	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 04:15 PM													
04:15 PM	218	3	0	221	4	314	4	322	2	1	2	5	548
04:30 PM	206	5	0	211	6	318	4	328	0	7	1	8	547
04:45 PM	196	3	0	199	7	302	4	313	2	6	0	8	520
05:00 PM	216	1	1	218	6	396	3	405	1	2	0	3	626
Total Volume	836	12	1	849	23	1330	15	1368	5	16	3	24	2241
% App. Total	98.5	1.4	0.1		1.7	97.2	1.1		20.8	66.7	12.5		
PHF	.959	.600	.250	.960	.821	.840	.938	.844	.625	.571	.375	.750	.895

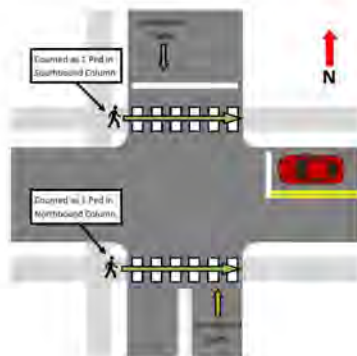


Littleton, CO
Mineral Ave Redevelopment Part 3
PM Peak
Mineral Ave & Peninsula Dr

File Name : Mineral & Peninsula PM
Site Code : IPO 652
Start Date : 10/31/2023
Page No : 4

Image 1

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APPENDIX B

Future Traffic Projections
Background Studies

Future Traffic Projections

Project Name: Mineral Avenue Redevelopment

Count Comparison

Broadway & Mineral Ave Overall Intersection Counts	AM	PM
Tues, April 18, 2023	4,193	4,609
Tues, July 18, 2023	3,740	4,759
% Difference	12.1%	-3%

DRCOG Traffic Projections:

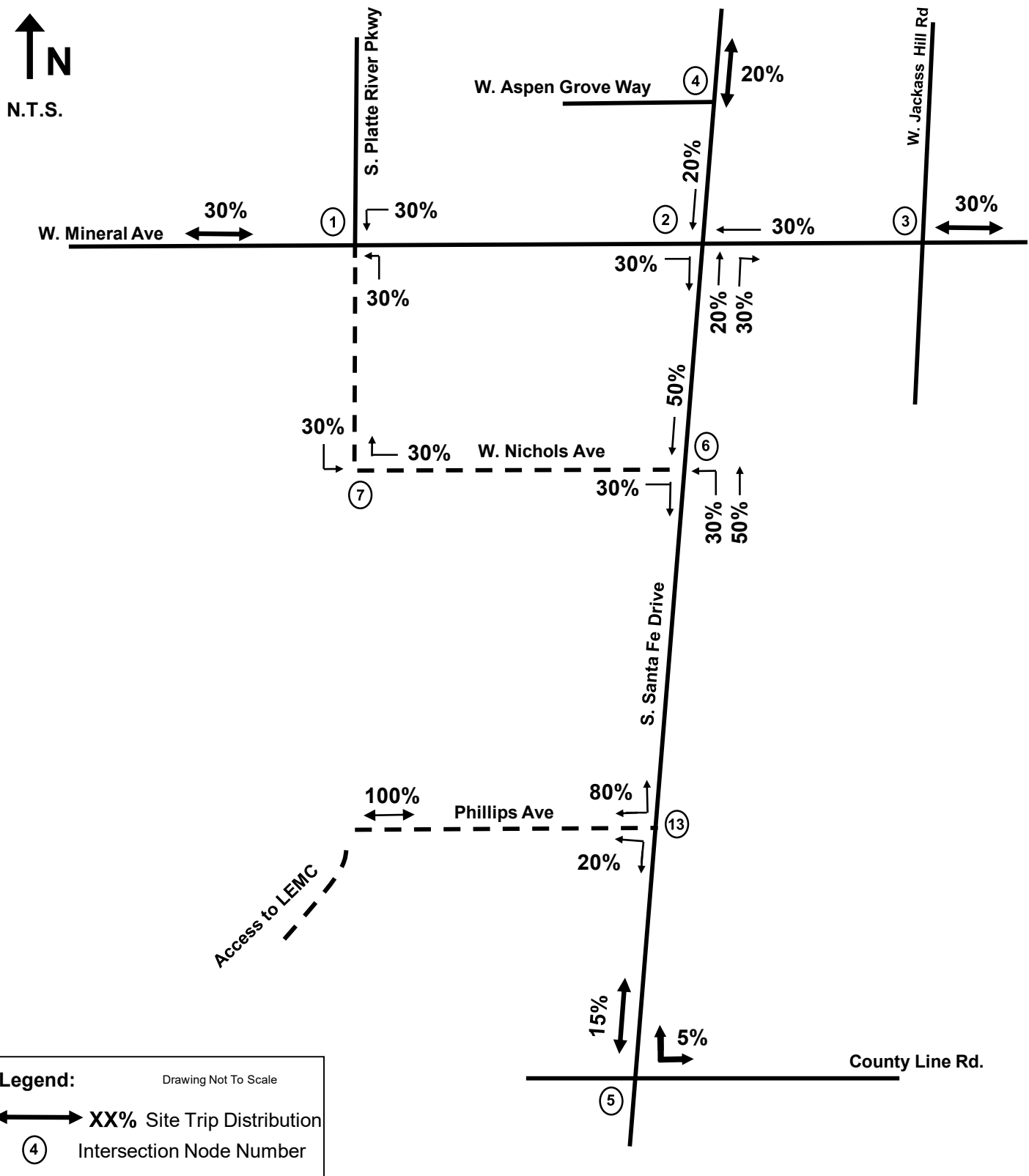
Location	2020	2050	Growth Factor	Annual Growth
Mineral Ave W/O Broadway	18,000	22,000	1.22	0.67%
Mineral Ave WO Southpark Ter	20,000	21,000	1.05	0.16%
Mineral Ave E/O Broadway	14,000	16,000	1.14	0.45%
Broadway N/O Mineral Ave	36,000	42,000	1.17	0.52%
Broadway S/O Mineral Ave	48,000	54,000	1.13	0.39%
Total	136,000	155,000	1.14	0.44%

Background Studies

APPENDIX “C”

LITTLETON EQUINE MEDICAL CENTER (LEMC) SITE TRIP GENERATION, DISTRIBUTION, & ASSIGNMENT

LEMC Redevelopment Site Generated Trips (Unadjusted)									
Land Use	Intensity	ITE Code	Daily (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
				Total	In	Out	Total	In	Out
General Light Industrial	26 TSF	110	157	16	14	2	15	2	13
General Office	91 TSF	710	968	112	96	16	104	17	87
Shopping Center	32 TSF	820	2770	168	104	64	234	112	122
Total		-	3,895	296	214	82	353	131	222



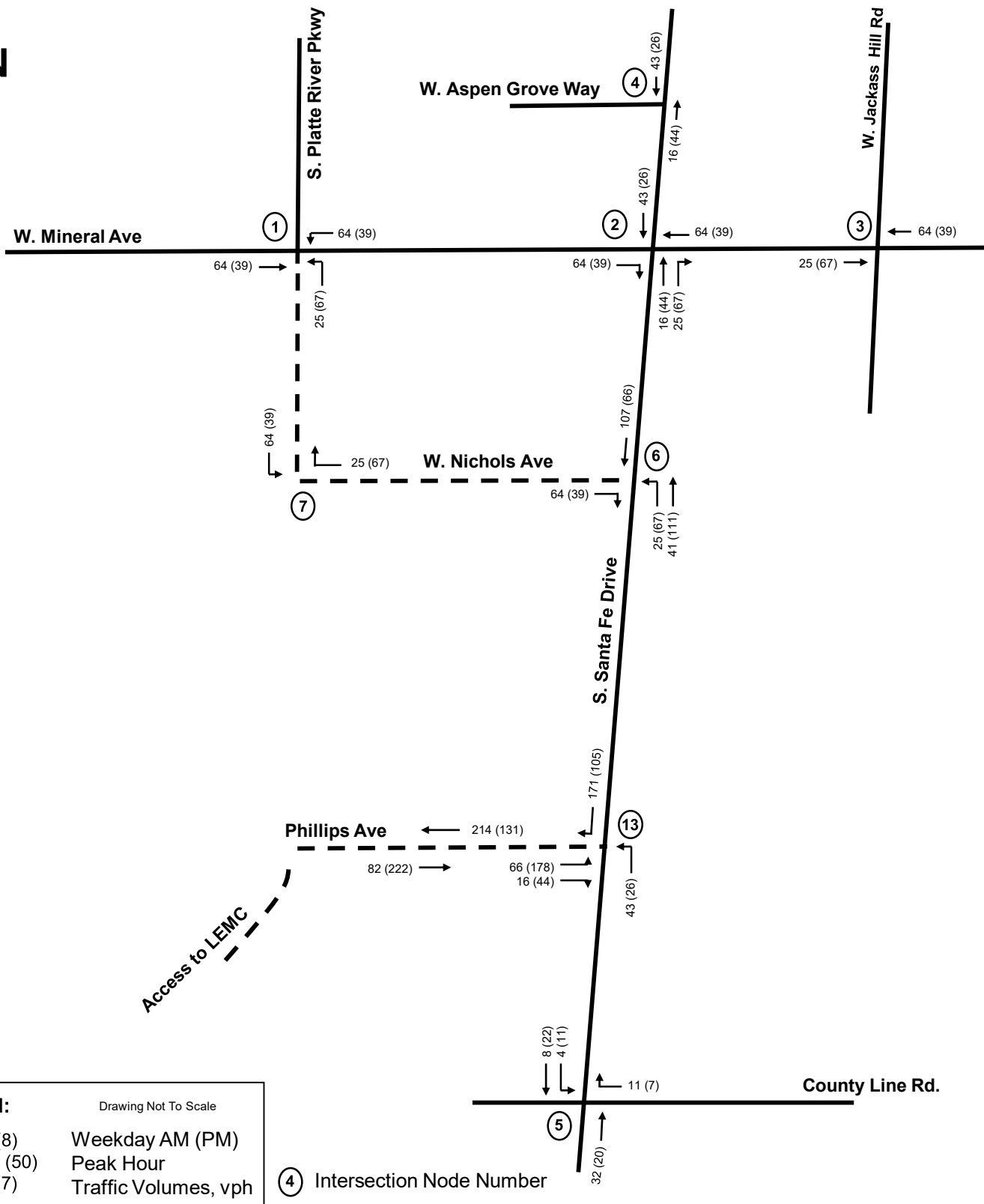
LEMC Site Generated Trip Distribution

Combined RiverPark & Santa Fe Park TIS

Evergreen Devco/Toll Brothers

HKS #160605

Figure C-2



LEMC Site Generated Trip Assignment

Combined RiverPark & Santa Fe Park TIS

Evergreen Devco/Toll Brothers

HKS #160605

Figure C-3



April 4, 2023

Ms. Adele O'Toole
James Properties, LLC
1404 Quail Street
Lakewood, CO 80215

Re: O'Toole's Garden Center Littleton
Traffic Study Letter
Littleton, Colorado

Dear Ms. O'Toole,

This letter documents the results of a traffic study including trip generation, trip distribution, traffic assignment, and intersection analysis for the proposed O'Toole's Garden Center to be located at the northern terminus of Mineral Place near the northwest corner of the Mineral Avenue & Mineral Place intersection in Littleton, Colorado. A vicinity map of the project area is attached in **Figure 1**. A conceptual site plan for the project is attached.

It is expected that the project will be completed in the next couple of years; therefore, analysis was conducted for the 2025 opening year horizon as well as a long-term 2045 horizon.

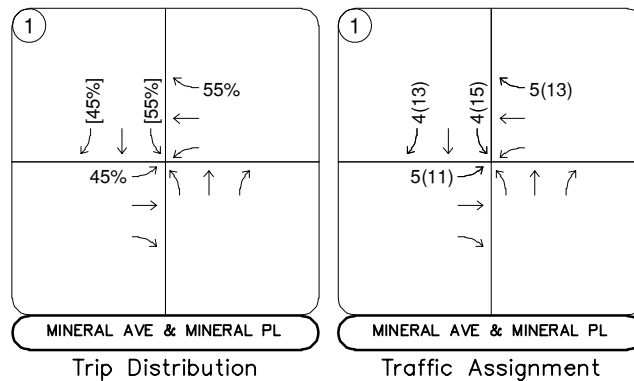
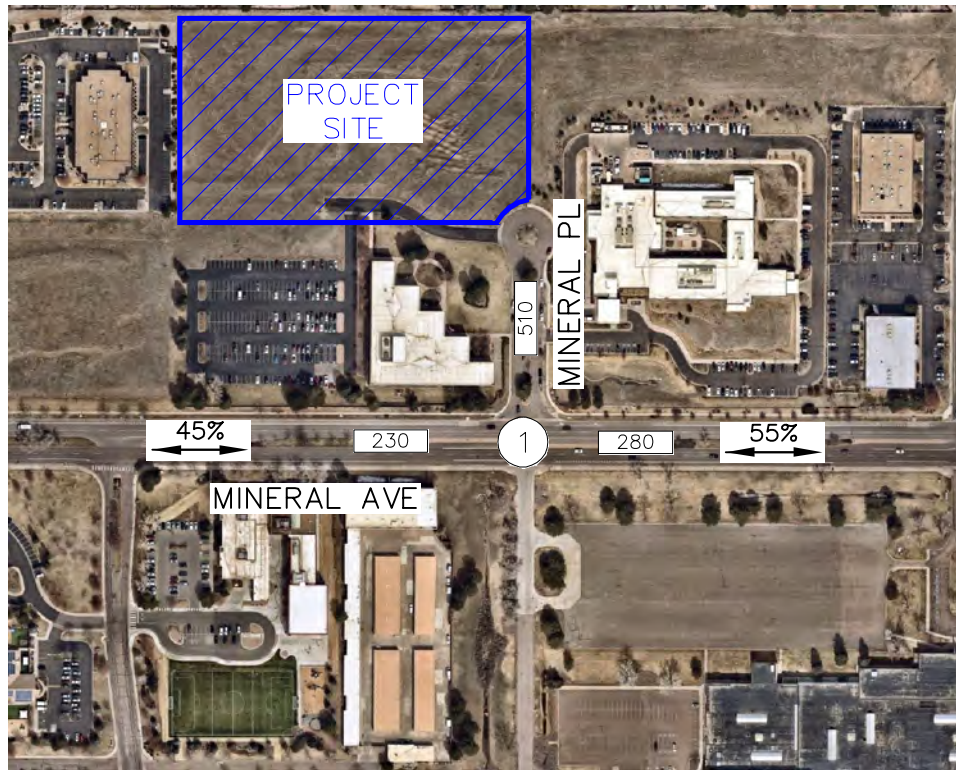
The intersection of Mineral Avenue & Mineral Place is incorporated into this traffic study in accordance with City of Littleton requested scope.

Regional access to O'Toole's Garden Center Littleton will be provided by C-470, Santa Fe Drive (US-85), and University Boulevard (State Highway 177) while primary access to the site will be provided Broadway, County Line Road, and Mineral Avenue. Direct access to the site will be provided by a proposed full movement access along the northern terminus of Mineral Place to the north of the existing Mineral Avenue & Mineral Place intersection.

EXISTING ROADWAY NETWORK

Mineral Avenue extends east/west with two through lanes in each direction and a posted speed limit of 40 miles per hour. There is a raised median along Mineral Avenue within the study area and bike lanes and sidewalk are also provided in each direction. Mineral Place is a north/south roadway with one through lane in each direction, on-street parallel parking, and a raised median while no posted speed limit could be determined from Google Street View.

The intersection of Mineral Avenue & Mineral Place is an unsignalized 4-leg intersection with stop control on the northbound and southbound Mineral Place approaches to the intersection. The eastbound and westbound Mineral Avenue approaches each provide a left turn lane, two through lanes, and a right turn lane. The northbound Mineral Place approach provides one through lane for shared left/through/right turning movements. The southbound Mineral Place approach does not have pavement striping to denote turn lanes, as such, in



LEGEND

(X) Study Area Key Intersection

XX% External Trip Distribution Percentage

XX%[XX%] Entering[Exiting] Trip Distribution Percentage

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

[xx,xx0] Estimated Daily Traffic Volume

FIGURE 4
 O'TOOLE'S GARDEN CENTER LITTLETON
 LITTLETON, COLORADO
 PROJECT TRIP DISTRIBUTION AND
 TRAFFIC ASSIGNMENT

MASTER DEVELOPMENT PLAN WITH SITE PLAN DETAILS
A PORTION OF LOT 1, SOUTHBRIDGE FILING NO. 3

NOTES

SITE ADDRESS: 1151 W MINERAL AVENUE, LITTLETON, CO
CURRENT ZONING: BC/PL-O

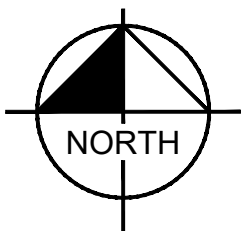
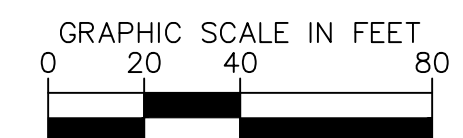
SITE INFORMATION

SITE AREA: 6.64 ACRES OR 289238 SQUARE FEET
 BUILDING AREA: 5,000 SQUARE FEET
 PARKING SPACES REQUIRED (1 SPACE PER 350 SF): 232
 ACES
 PARKING SPACES PROVIDED: 310 SPACES

1. ALL PROPERTY LINES HAVE BEEN SHOWN FOR ILLUSTRATION PURPOSES ONLY AND SHALL BE VERIFIED BASED UPON AN ALTA SURVEY PROVIDED BY A COLORADO-LICENSED PROFESSIONAL SURVEYOR.
2. SITE LAYOUT IS OPEN TO CHANGE BASED UPON CITY COMMENTS AND SETBACKS WILL BE CONFIRMED BASED UPON PRE-APPLICATION NOTES
3. DETENTION POND SIZING IS PRELIMINARY IN NATURE AND WILL NEED TO BE VERIFIED AFTER PRE-APPLICATION MEETING.

LEGEND

	SITE PROPERTY LINE
	SITE PROPERTY ROW LINE
	100' MAXIMUM BUILDING SETBACK
	EASEMENT LINE
	PROPOSED SITE FENCE
	PROPOSED DECORATIVE FENCE
	PROPOSED LANDSCAPE
	PROPOSED LIGHT DUTY ASPHALT PAVEMENT
	PROPOSED HEAVY DUTY ASPHALT PAVEMENT
	PROPOSED HEAVY DUTY CONCRETE PAVEMENT
	PROPOSED CONCRETE SIDEWALK
	PROPOSED OFFSITE ASPHALT PAVEMENT
	PROPOSED RIP RAP
	PROPOSED WETLAND
	PROPOSED FIRE HYDRANT
	PROPOSED PARKING COUNT
	"R1-1" STOP SIGN



Kimley»Horn

©2023 KIMLEY-HORN AND ASSOCIATES, INC.
4582 South Ulster Street, Suite 1500
Denver, Colorado 80237 (303) 228-2300

DESIGNED BY: JRB
DRAWN BY: SMO
CHECKED BY: JRB
DATE: 03/03/2023

1151 WEST MINERAL AVENUE
LITTLETON, ARAPAHOE COUNTY, COLORADO
MASTER DEVELOPMENT PLAN
SITE PLAN

PRELIMINARY
FOR REVIEW ONLY
NOT FOR
CONSTRUCTION
Kimley»Horn
Kimley-Horn and Associates, Inc.

PROJECT NO. 196600000
SHEET 3

TRAFFIC IMPACT REPORT COMBINED RIVERPARK & SANTA FE PARK SOUTH DEVELOPMENTS LITTLETON, COLORADO

February 17, 2021

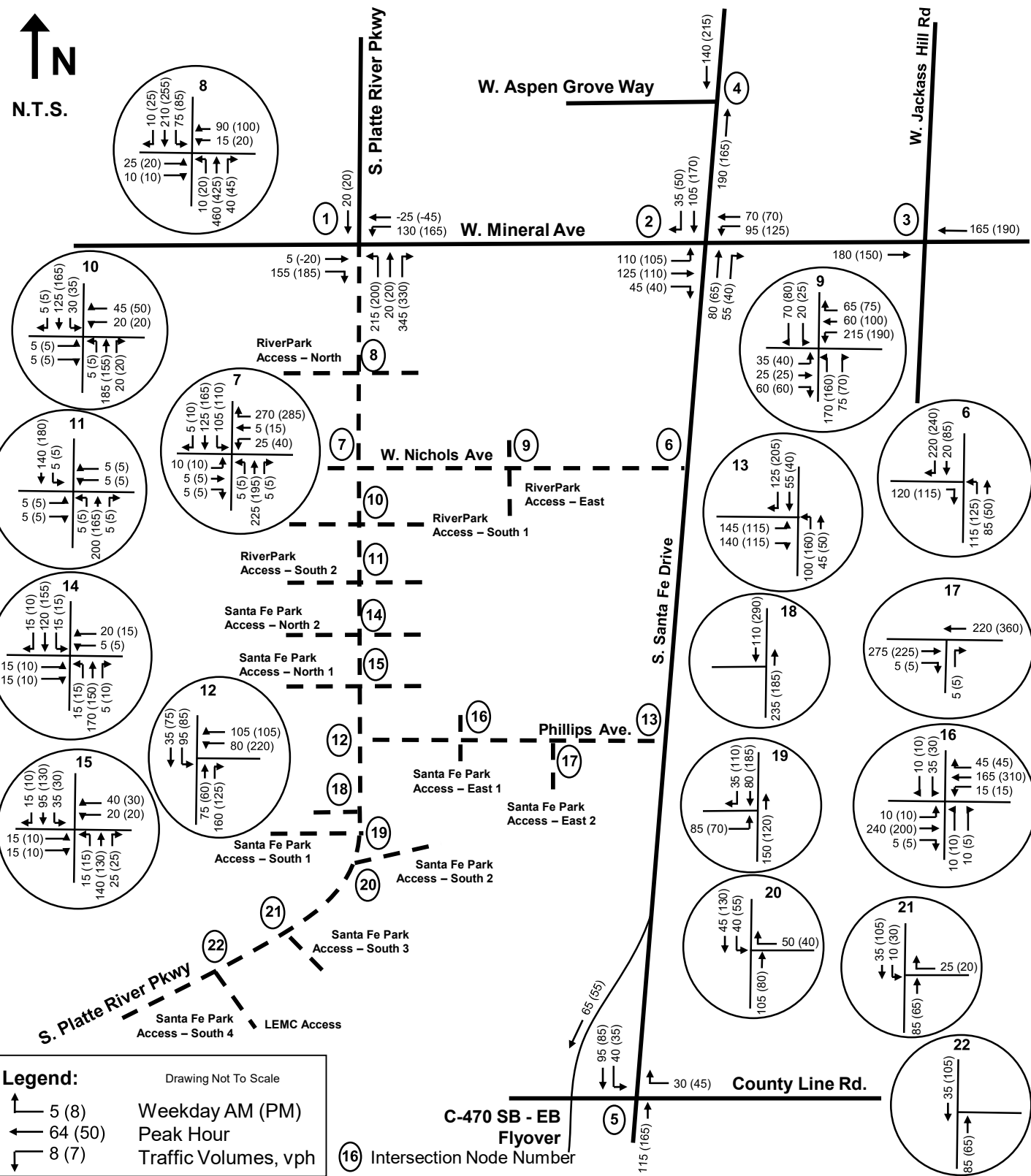
Prepared for:
Evergreen Development
1873 South Bellaire Street, Suite 1106
Denver, CO 80222
&
Toll Brothers
10 Inverness Drive East, Suite 125
Englewood, CO 80112

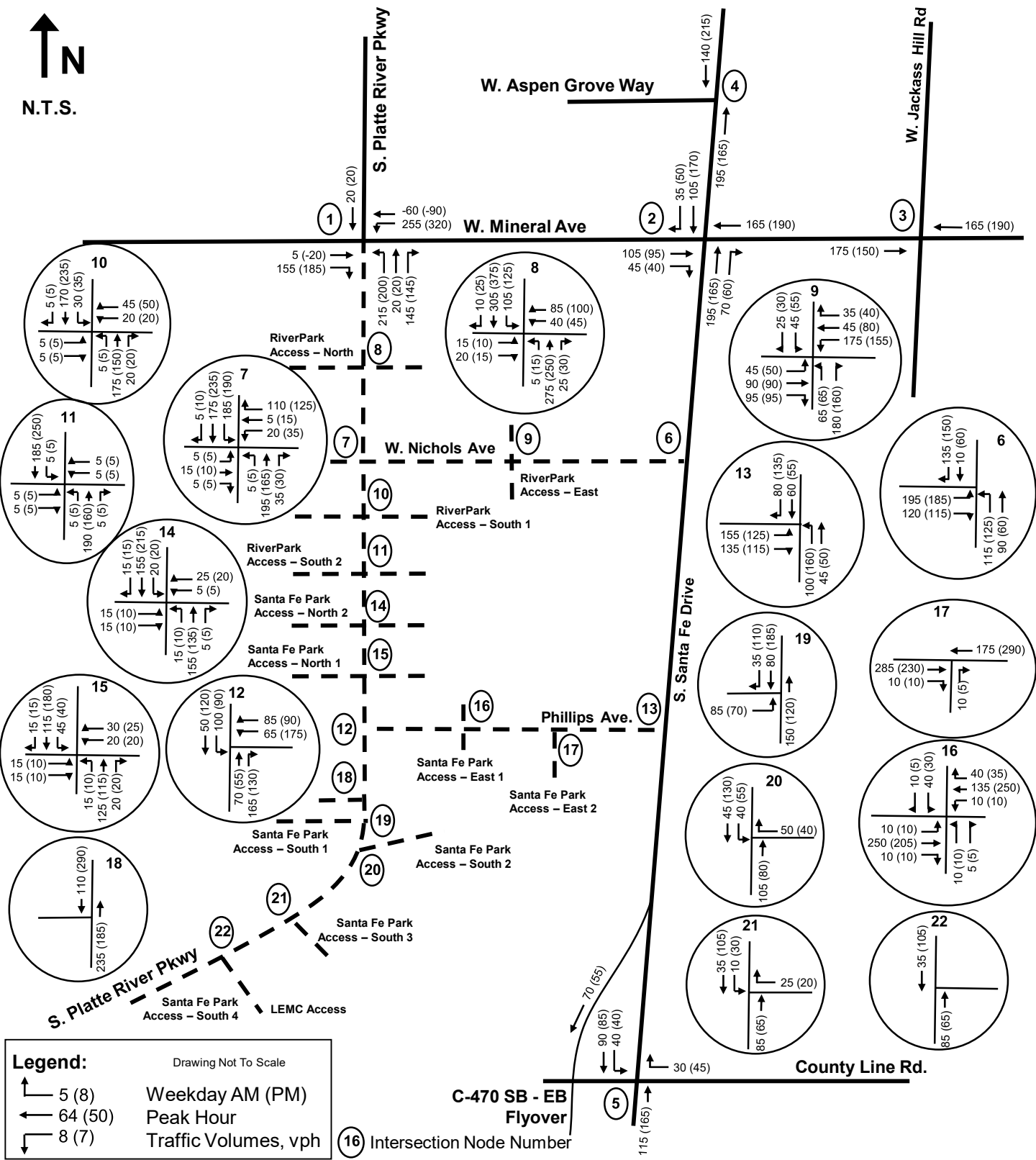
Prepared by:



1120 Lincoln Street
Denver, CO 80203
Ph: 303-623-6300

Harris Kocher Smith Project No. 160605





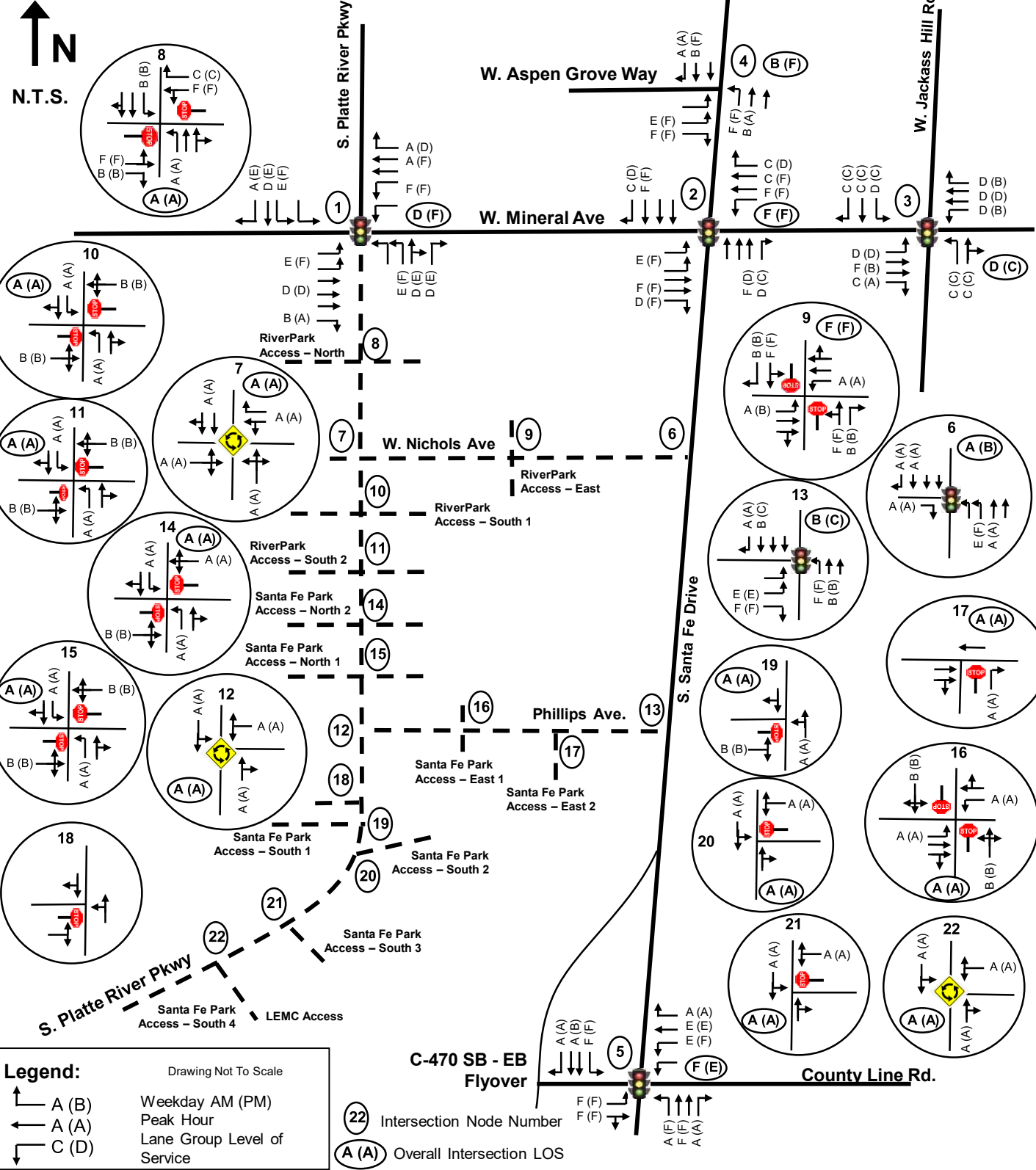
Combined RiverPark & Santa Fe Park South TIS

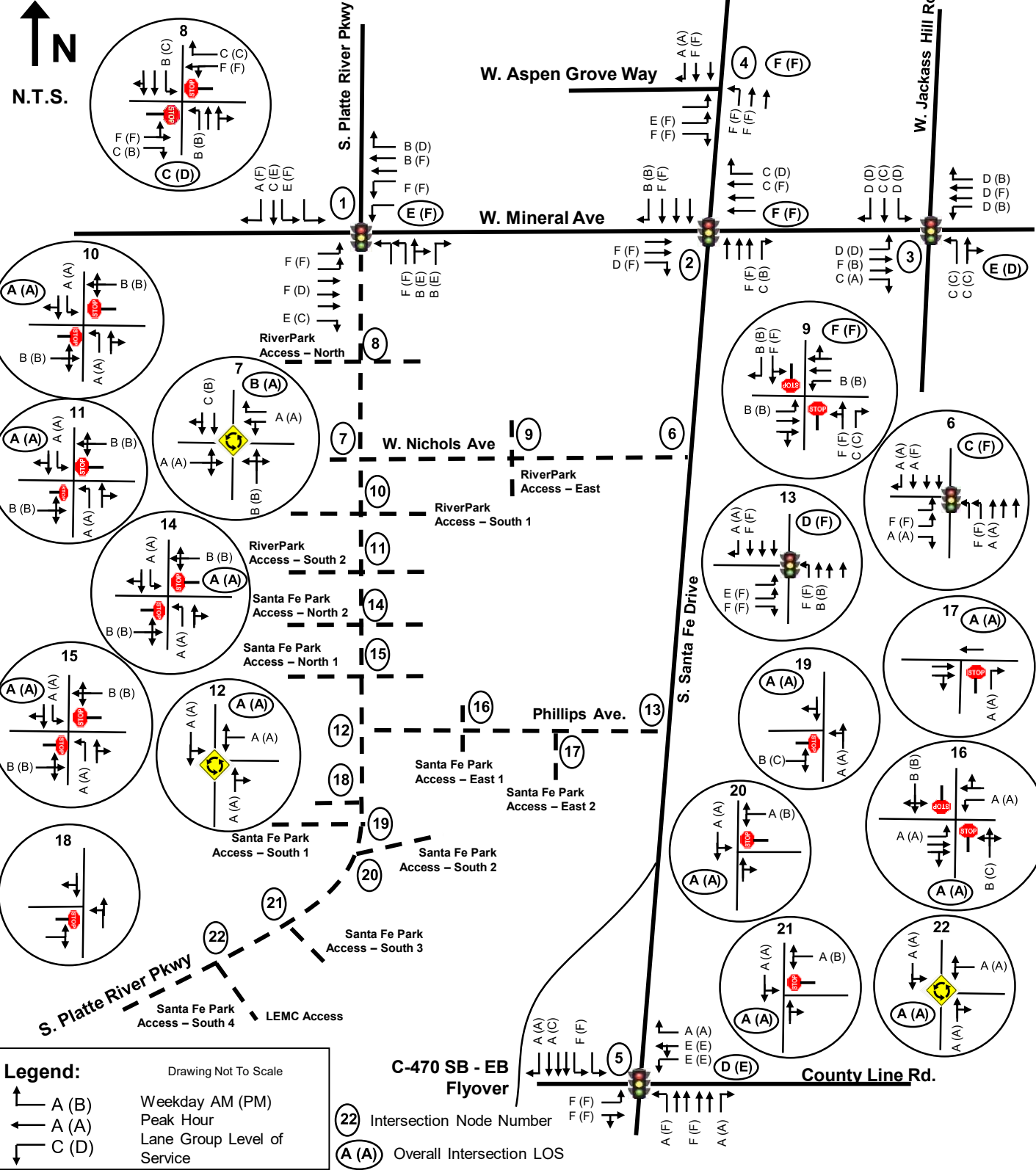
Evergreen Devco/Toll Brothers

HKS #160605

2040 Site Generated Trip Assignment: Combined RiverPark + Santa Fe Park South

Figure 27

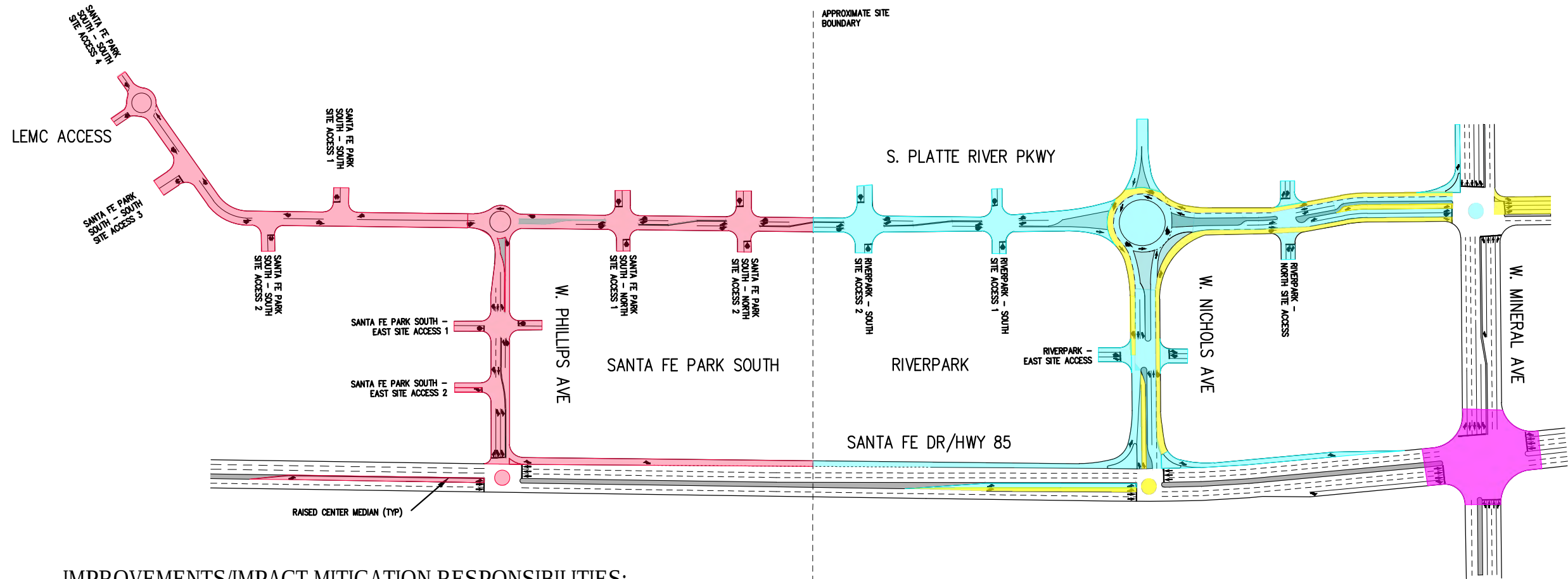




Combined RiverPark & Santa Fe Park South TIS
 Evergreen Devco/Toll Brothers
 HKS #160605

**2040 Total Traffic
 Operational Conditions**

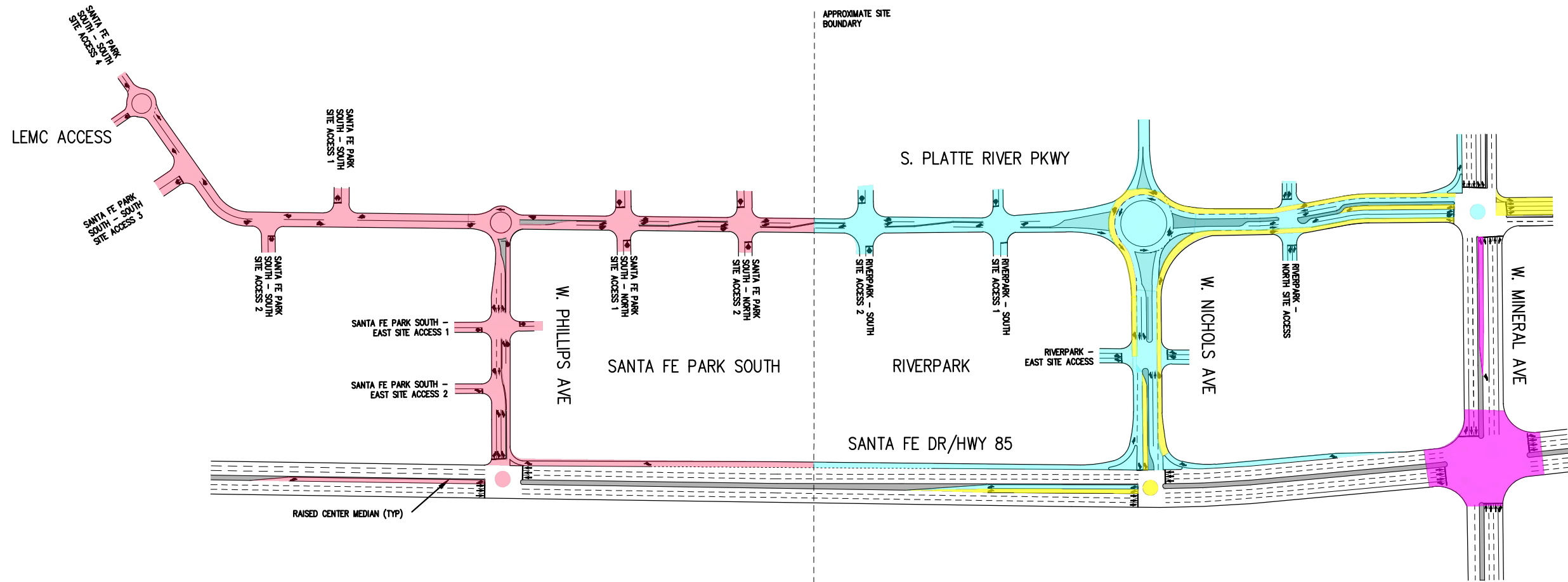
Figure 31



IMPROVEMENTS/IMPACT MITIGATION RESPONSIBILITIES:

- SANTA FE PARK SOUTH (SFPS) DEVELOPER
- RIVERPARK (RP) DEVELOPER
- CITY OF LITTLETON
- SHARED RESPONSIBILITY (RP/SFPS/CITY)
- TRAFFIC SIGNAL EQUIPMENT – SANTA FE PARK SOUTH (SFPS) DEVELOPER
- TRAFFIC SIGNAL EQUIPMENT – RIVERPARK (RP) DEVELOPER
- TRAFFIC SIGNAL EQUIPMENT – CITY OF LITTLETON

**FIGURE 32: 2025 BUILDOUT - RECOMMENDED
ROADWAY & INTERSECTION IMPROVEMENTS**



IMPROVEMENTS/IMPACT MITIGATION RESPONSIBILITIES:

- SANTA FE PARK SOUTH (SFPS) DEVELOPER
- RIVERPARK (RP) DEVELOPER
- CITY OF LITTLETON
- SHARED RESPONSIBILITY (RP/SFPS/CITY)
- TRAFFIC SIGNAL EQUIPMENT – SANTA FE PARK SOUTH (SFPS) DEVELOPER
- TRAFFIC SIGNAL EQUIPMENT – RIVERPARK (RP) DEVELOPER
- TRAFFIC SIGNAL EQUIPMENT – CITY OF LITTLETON

FIGURE 33: 2040 LONG TERM - RECOMMENDED
ROADWAY & INTERSECTION IMPROVEMENTS



APPENDIX C

Trip Generation Worksheets (Weekday)

Trip Generation Worksheets (Weekend)

Costco Trip Generation Memorandum

Trip Generation Worksheets (Weekday)

Mineral Avenue Redevelopment Trip Generation

ITE Land Use Code	Land Use	Size	Units	Daily Trips	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
821	Shopping Plaza (40-150k)	50	KSF	3,376	54	33	87	127	133	260
Client	Costco	160	KSF	10,552	113	101	214	559	582	1,141
862	Home Improvement Superstore	106	KSF	3,260	91	69	160	119	124	243
912	Drive-In Bank	6.5	KSF	652	38	27	65	68	69	137
930	Fast Casual Restaurant	4.5	KSF	438	3	3	6	31	25	56
932	High-Turnover (Sit-Down) Restaurant	10	KSF	1,072	53	43	96	56	35	91
934	Fast-Food Restaurant w/ D.T.	12	KSF	5,610	273	262	535	206	190	396
937	Coffee/Donut Shop w/ D.T.	2.5	KSF	1,334	110	105	215	49	49	98
220	Multifamily Housing (Low-Rise)	370	Dwelling Unit(s)	2,448	33	105	138	113	67	180
Total Project Trips				28,742	768	748	1,516	1,328	1,274	2,602
Total Retail Project Trips				26,294	735	643	1,378	1,215	1,207	2,422
Total Residential Project Trips				2,448	33	105	138	113	67	180
821	Shopping Plaza (40-150k)	50	KSF	2,928	50	29	78	103	114	217
Client	Costco	160	KSF	9,148	104	88	192	454	499	954
862	Home Improvement Superstore	106	KSF	2,828	84	60	144	97	106	203
912	Drive-In Bank	7	KSF	524	36	26	62	48	41	89
930	Fast Casual Restaurant	5	KSF	352	3	3	6	22	15	37
932	High-Turnover (Sit-Down) Restaurant	10	KSF	860	50	41	91	40	21	60
934	Fast-Food Restaurant w/ D.T.	12	KSF	4,494	258	249	508	146	112	258
937	Coffee/Donut Shop w/ D.T.	2.5	KSF	1,070	104	100	204	35	29	64
220	Multifamily Housing (Low-Rise)	370	Dwelling Unit(s)	2,448	33	105	138	113	67	180
Total Project Trips with Internal Capture				24,652	721	701	1,422	1,058	1,004	2,062
Total Retail Project Trips with Internal Capture				22,204	688	596	1,284	945	937	1,882
Total Residential Project Trips				2,448	33	105	138	113	67	180
821	Shopping Plaza (40-150k)	50	KSF	1,758	50	29	78	62	69	130
Client	Costco	160	KSF	4,758	54	46	100	236	260	496
862	Home Improvement Superstore	106	KSF	1,642	84	60	144	56	62	118
912	Drive-In Bank	6.5	KSF	342	26	18	44	31	26	58
930	Fast Casual Restaurant	4.5	KSF	352	3	3	6	22	15	37
932	High-Turnover (Sit-Down) Restaurant	10	KSF	492	50	41	91	23	12	35
934	Fast-Food Restaurant w/ D.T.	12	KSF	2,024	129	125	254	66	50	116
937	Coffee/Donut Shop w/ D.T.	2.5	KSF	1,070	52	50	102	16	13	29
220	Multifamily Housing (Low-Rise)	370	Dwelling Unit(s)	2,448	33	105	138	113	67	180
Total Project Trips with Internal Capture + Passby (Non-Passby)				14,886	480	476	956	625	573	1,198
Total Project Passby Trips				9,766	241	224	466	433	431	864
Retail Project Trips with Internal Capture + Passby (Non-Passby)				12,438	447	372	818	512	506	1,018
Retail Project Passby Trips				9,766	241	224	466	433	431	864

Project Mineral Avenue Redevelopment
Subject Trip Generation for Shopping Plaza (40-150k) - Supermarket-No
Designed by MAG Date August 10, 2023 Job No. 196757001
Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Shopping Plaza (40-150k) - Supermarket-No (821)

Independent Variable - 1000 Square Feet Gross Leasable Area (X)

Gross Leasable Area = 50,000 Square Feet

X = 50.000

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (800 Series Page 213)

Average Weekday	Directional Distribution:	62% ent.	38% exit.
T = 1.73 * (X)	T = 87	Average Vehicle Trip Ends	
T = 1.73 * 50	54 entering	33	exiting
	54 + 33 = 87		

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (800 Series page 214)

Average Weekday	Directional Distribution:	49% ent.	51% exit.
T = 5.19 * (X)	T = 260	Average Vehicle Trip Ends	
T = 5.19 * 50	127 entering	133	exiting
	127 + 133 = 260		

Weekday (800 Series page 212)

Average Weekday	Directional Distribution:	50% entering, 50% exiting	
T = 67.52 * (X)	T = 3376	Average Vehicle Trip Ends	
T = 67.52 * 50	1688 entering	1688	exiting
	1688 + 1688 = 3376		

Non Pass-By Trip Volumes (Between 40 and 150k) (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Non-Pass By PM Peak Hour = 60% Non-Pass By

Pass-By Trip Volumes (Between 40 and 150k) (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Pass By PM Peak Hour = 40% Pass By

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Discount Club
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by Date Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Discount Club (857)

Independent Variable - 1000 Square Feet (X)

SF = 160,000

X = 160.000

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (800 Series Page 388)

Directional Distribution: 61% ent. 39% exit.
 T = 128 Average Vehicle Trip Ends
 (T) = 0.80 (X) 78 entering 50 exiting
 (T) = 0.80 * (160.0)
 78 + 50 = 128

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (800 Series Page 389)

Directional Distribution: 50% ent. 50% exit.
 T = 670 Average Vehicle Trip Ends
 (T) = 4.19 (X) 335 entering 335 exiting
 (T) = 4.19 * (160.0)
 335 + 335 = 670

Weekday (800 Series Page 387)

Directional Distribution: 50% ent. 50% exit.
 T = 6794 Average Vehicle Trip Ends
 (T) = 42.46 (X) 3397 entering 3397 exiting
 (T) = 42.46 * (160.0)
 3397 + 3397 = 6794

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Non-Pass By PM Peak Hour = 66% Non-Pass By

Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Pass By PM Peak Hour = 34% Pass By

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Home Improvement Superstore
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by _____ Date _____ Sheet No. 1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Home Improvement Superstore (862)

Independent Variable - 1000 Square Feet Gross Floor Area (X)

Gross Floor Area = 106,000 Square Feet

X = 106.000

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Page 438)

		Directional Distribution: 57% ent. 43% exit.	
T = 1.51 (X)		T = 160	Average Vehicle Trip Ends
T = 1.51 *	106.000	91 entering	69 exiting
		91 + 69 =	160

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Page 439)

		Directional Distribution: 49% ent. 51% exit.	
T = 2.29 (X)		T = 243	Average Vehicle Trip Ends
T = 2.29 *	106.000	119 entering	124 exiting
		119 + 124 =	243

Weekday (Page 437)

Average Weekday		Directional Distribution: 50% entering, 50% exiting	
T = 30.74 (X)		T = 3260	Average Vehicle Trip Ends
T = 30.74*	106.000	1630 entering	1630 exiting
		1630 + 1630 =	3260

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Non-Pass By PM Peak Hour = 58% Non-Pass By

Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Pass By PM Peak Hour = 42% Pass By

Project Mineral Avenue Redevelopment
Subject Trip Generation for Drive-In Bank
Designed by MAG Date August 10, 2023 Job No. 196757001
Checked by Date Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Drive-In Bank (912)

Independent Variable - 1000 Square Feet Gross Floor Area (X)

SF = 6,500

X = 6.500

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Page 599)

Average Weekday

T = 9.95 (X)

T = 9.95 * 6.500

Directional Distribution: 58% ent. 42% exit.

T = 65 Average Vehicle Trip Ends

38 entering 27 exiting

38 + 27 = 65

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Page 600)

Average Weekday

T = 21.01 (X)

T = 21.01 * 6.500

Directional Distribution: 50% ent. 50% exit.

T = 137 Average Vehicle Trip Ends

68 entering 69 exiting

68 + 69 = 137

Weekday (Page 598)

Average Weekday

T = 100.35 (X)

T = 100.35 * 6.500

Directional Distribution: 50% entering, 50% exiting

T = 652 Average Vehicle Trip Ends

326 entering 326 exiting

326 + 326 = 652

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

PM Peak Hour = 65% Non-Pass By AM Peak Hour = 71% Non-Pass By

Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

PM Peak Hour = 35% Pass By AM Peak Hour = 29% Pass By

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Fast Casual Restaurant
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by Date Sheet No. 1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Fast Casual Restaurant (930)

Independent Variable - 1000 Square Feet (X)

SF = 4,500

X = 4.500

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 640)

(Note: Small Sample Size < 5)

(T) = 1.43 (X)		Directional Distribution:	50%	ent.	50%	exit.
(T) = 1.43 *	(4.5)	T = 6	Average Vehicle Trip Ends			
		3	entering	3	exiting	
		3	+	3	=	6

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 641)

(T) = 12.55 (X)		Directional Distribution:	55%	ent.	45%	exit.
(T) = 12.55 *	(4.5)	T = 56	Average Vehicle Trip Ends			
		31	entering	25	exiting	
		31	+	25	=	56

Weekday (900 Series Page 639)

(Note: Small Sample Size < 5)

(T) = 97.14 (X)		Directional Distribution:	50%	ent.	50%	exit.
(T) = 97.14 *	(4.5)	T = 438	Average Vehicle Trip Ends			
		219	entering	219	exiting	
		219	+	219	=	438

Project Mineral Avenue Redevelopment
 Subject Trip Generation for High Turnover Sit-Down Restaurant
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by Date Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - High Turnover Sit-Down Restaurant (932)

Independent Variable - 1000 Square Feet (X)

SF = 10,000

X = 10.000

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 674)

Directional Distribution: 55% ent. 45% exit.
 T = 96 Average Vehicle Trip Ends
 (T) = 9.57 (X)
 (T) = 9.57 * (10.0) 53 entering 43 exiting
 53 + 43 = 96

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 674)

Directional Distribution: 61% ent. 39% exit.
 T = 91 Average Vehicle Trip Ends
 (T) = 9.05 (X)
 (T) = 9.05 * (10.0) 56 entering 35 exiting
 56 + 35 = 91

Weekday (900 Series Page 673)

Directional Distribution: 50% ent. 50% exit.
 T = 1072 Average Vehicle Trip Ends
 (T) = 107.20 (X)
 (T) = 107.20 * (10.0) 536 entering 536 exiting
 536 + 536 = 1072

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Non-Pass By PM Peak Hour = 57% Non-Pass By

Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = Pass By PM Peak Hour = 43% Pass By

Project Mineral Avenue Redevelopment
Subject Trip Generation for Fast-Food Restaurant with Drive-Through Window
Designed by MAG Date August 10, 2023 Job No. 196757001
Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Fast-Food Restaurant with Drive-Through Window (934)

Independent Variable - 1000 Square Feet (X)

SF = 12,000

X = 12.000

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 726)

(T) = 44.61 (X)
(T) = 44.61 * (12.0)

Directional Distribution: 51% ent. 49% exit.
T = 535 Average Vehicle Trip Ends
273 entering 262 exiting
273 + 262 = 535

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 727)

(T) = 33.03 (X)
(T) = 33.03 * (12.0)

Directional Distribution: 52% ent. 48% exit.
T = 396 Average Vehicle Trip Ends
206 entering 190 exiting
206 + 190 = 396

Weekday (900 Series Page 725)

(T) = 467.48 (X)
(T) = 467.48 * (12.0)

Directional Distribution: 50% ent. 50% exit.
T = 5610 Average Vehicle Trip Ends
2805 entering 2805 exiting
2805 + 2805 = 5610

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 50% Non-Pass By PM Peak Hour = 45% Non-Pass By

Pass-By Trip Volumes (Per Trip Generation Manual, 11th Edition)

AM Peak Hour = 50% Pass By PM Peak Hour = 55% Pass By

Project Mineral Avenue Redevelopment

Subject Trip Generation for Coffee/Donut Shop with Drive Through

Designed by MAG

Date August 10, 2023

Job No. 196757001

Checked by

Date

Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Coffee/Donut Shop with Drive-Through Window (937)

Independent Variable - 1000 Square Feet Gross Floor Feet (X)

Gross Floor Area = 2,500

X = 2.5

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Series 900 Page 777)

T = 85.88 (X)		Directional Distribution:	51% ent.	49% exit.
T = 85.88 *	2.5	T =	215	Average Vehicle Trip Ends
		110 entering	105 exiting	

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Series 900 Page 778)

T = 38.99 (X)		Directional Distribution:	50% ent.	50% exit.
T = 38.99 *	2.5	T =	98	Average Vehicle Trip Ends
		49 entering	49 exiting	

Weekday (Series 900 Page 776)

Average Weekday		Directional Distribution:	50% entering, 50% exiting
(T) = 533.57 (X)		T =	1334
(T) = 533.57 *	(2.5)	667 entering	667 exiting
		667 + 667 =	1334

Applying ITE LU 934 Fast Food with Drive-Through Pass-by Rates

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 50% Non-Pass By PM Peak Hour = 45% Non-Pass By

Pass-By Trip Volumes (Per Trip Generation Manual, 11th Edition)

AM Peak Hour = 50% Pass By PM Peak Hour = 55% Pass By

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Multifamily Housing (Low-Rise)
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by Date Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independent Variable - Dwelling Units (X)

$$X = 370$$

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 255)

$$(T) = 0.31 (X) + 22.85$$

$$(T) = 0.31 * (370.0) + 22.85$$

Directional Distribution: 24% ent. 76% exit.

T = 138 Average Vehicle Trip Ends

33 entering 105 exiting

$$33 + 105 = 138$$

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 256)

$$(T) = 0.43 (X) + 20.55$$

$$(T) = 0.43 * (370.0) + 20.55$$

Directional Distribution: 63% ent. 37% exit.

T = 180 Average Vehicle Trip Ends

113 entering 67 exiting

$$113 + 67 = 180$$

Weekday (200 Series Page 254)

$$(T) = 6.41 (X) + 75.31$$

$$(T) = 6.41 * (370.0) + 75.31$$

Directional Distribution: 50% ent. 50% exit.

T = 2448 Average Vehicle Trip Ends

1224 entering 1224 exiting

$$1224 + 1224 = 2448$$

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Mineral Avenue Redevelopment			Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Littleton, Colorado			Performed By:	
Scenario Description:				Date:	
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		316	1,000 Sq Ft	461	258	203
Restaurant		36	1,000 Sq Ft	917	477	440
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		-	Dwelling Unit(s)	0	0	0
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				1,378	735	643

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

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

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		26	0	0	0
Restaurant	0	21		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,378	735	643
Internal Capture Percentage	7%	6%	7%
External Vehicle-Trips ⁵	1,284	688	596
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	13%
Restaurant	5%	5%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Mineral Avenue Redevelopment
Analysis Period:	

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	258	258	1.00	203	203
Restaurant	1.00	477	477	1.00	440	440
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	59		26	0	28	0
Restaurant	136	62		0	18	13
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		83	110	0	0	0
Retail	0		239	0	0	0
Restaurant	0	21		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	44	95	0		0
Hotel	0	10	29	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	21	237	258	237	0	0
Restaurant	26	451	477	451	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	26	177	203	177	0	0
Restaurant	21	419	440	419	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Mineral Avenue Redevelopment			Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Littleton, Colorado			Performed By:	
Scenario Description:				Date:	
Analysis Year:				Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		316	1,000 Sq Ft	1,644	805	839
Restaurant		36	1,000 Sq Ft	778	410	368
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		-	Dwelling Unit(s)	0	0	0
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				2,422	1,215	1,207

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

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

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		119	0	0	0
Restaurant	0	151		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	2,422	1,215	1,207
Internal Capture Percentage	22%	22%	22%
External Vehicle-Trips ⁵	1,882	945	937
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	19%	14%
Restaurant	29%	41%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

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

Project Name:	Mineral Avenue Redevelopment
Analysis Period:	

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	805	805	1.00	839	839
Restaurant	1.00	410	410	1.00	368	368
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	17		243	34	218	42
Restaurant	11	151		29	66	26
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		64	8	0	0	0
Retail	0		119	0	0	0
Restaurant	0	403		0	0	0
Cinema/Entertainment	0	32	12		0	0
Residential	0	81	57	0		0
Hotel	0	16	21	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	151	654	805	654	0	0
Restaurant	119	291	410	291	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	119	720	839	720	0	0
Restaurant	151	217	368	217	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Trip Generation Worksheets (Weekend)

Mineral Avenue Redevelopment Trip Generation (Saturday)

ITE Land Use Code	Land Use	Size	Units	Peak Hour of Generator		
				In	Out	Total
821	Shopping Plaza (40-150k)	50	KSF	162	149	311
Client	Costco	160	KSF	883	883	1,766
862	Home Improvement Superstore	106	KSF	236	227	463
912	Drive-In Bank	6.5	KSF	87	84	171
930	Fast Casual Restaurant	4.5	KSF	61	58	119
932	High-Turnover (Sit-Down) Restaurant	10	KSF	179	147	326
934	Fast-Food Restaurant w/ D.T.	12	KSF	338	325	663
937	Coffee/Donut Shop w/ D.T.	2.5	KSF	110	110	220
220	Multifamily Housing (Low-Rise)	370	Dwelling Unit(s)	79	73	152
Total Project Trips				2,135	2,056	4,191
821	Shopping Plaza (40-150k)	50	KSF	124	122	247
Client	Costco	160	KSF	678	725	1,403
862	Home Improvement Superstore	106	KSF	181	186	368
912	Drive-In Bank	7	KSF	62	50	111
930	Fast Casual Restaurant	5	KSF	43	34	77
932	High-Turnover (Sit-Down) Restaurant	10	KSF	127	87	214
934	Fast-Food Restaurant w/ D.T.	12	KSF	240	192	432
937	Coffee/Donut Shop w/ D.T.	2.5	KSF	78	65	143
220	Multifamily Housing (Low-Rise)	370	Dwelling Unit(s)	79	73	152
Total Project Trips with Internal Capture				1,613	1,534	3,147
821	Shopping Plaza (40-150k)	50	KSF	75	73	148
Client	Costco	160	KSF	353	377	730
862	Home Improvement Superstore	106	KSF	105	108	213
912	Drive-In Bank	6.5	KSF	40	32	72
930	Fast Casual Restaurant	4.5	KSF	43	34	78
932	High-Turnover (Sit-Down) Restaurant	10	KSF	72	49	122
934	Fast-Food Restaurant w/ D.T.	12	KSF	108	86	194
937	Coffee/Donut Shop w/ D.T.	2.5	KSF	35	29	64
220	Multifamily Housing (Low-Rise)	370	Dwelling Unit(s)	79	73	152
Total Project Trips with Internal Capture + Passby (Non-Passby)				910	863	1,773
Total Project Passby Trips				703	671	1,374

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Multifamily Housing (Low-Rise)
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Fitted Curve Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independent Variable - Dwelling Units (X)

$$X = 370$$

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

$$T = 0.41 * (X)$$

$$T = 0.41 * 370$$

Directional Distribution: 52% ent. 48% exit.

T = 152 Average Vehicle Trip Ends

79 entering 73 exiting

$$79 + 73 = 152$$

Saturday

$$(T) = 4.55 (X)$$

$$(T) = 4.55 * (370.0)$$

Directional Distribution: 50% ent. 50% exit.

T = 1684 Average Vehicle Trip Ends

842 entering 842 exiting

$$842 + 842 = 1684$$

Project Mineral Avenue Redevelopment
Subject Trip Generation for Shopping Plaza (40-150k) - Supermarket-No
Designed by MAG Date August 10, 2023 Job No. 196757001
Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Shopping Plaza (40-150k) - Supermarket-No (821)

Independent Variable - 1000 Square Feet Gross Leasable Area (X)

Gross Leasable Area = 50,000 Square Feet

X = 50.000

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 6.22 * (X)

T = 6.22 * 50

Directional Distribution: 52% ent. 48% exit.

T = 311 Average Vehicle Trip Ends

162 entering 149 exiting

162 + 149 = 311

Saturday

T = 81.07 * (X)

T = 81.07 * 50

Directional Distribution: 50% ent. 50% exit.

T = 4054 Average Vehicle Trip Ends

2027 entering 2027 exiting

2027 + 2027 = 4054

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Home Improvement Superstore
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by _____ Date _____ Sheet No. 1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Home Improvement Superstore (862)

Independent Variable - 1000 Square Feet Gross Floor Area (X)

Gross Floor Area = 106,000 Square Feet

X = 106.000

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 4.37 * (X)

T = 4.37 * 106

Directional Distribution: 51% ent. 49% exit.

T = 463 Average Vehicle Trip Ends

236 entering 227 exiting

236 + 227 = 463

Saturday

T = 55.72 * (X)

T = 55.72 * 106

Directional Distribution: 50% ent. 50% exit.

T = 5906 Average Vehicle Trip Ends

2953 entering 2953 exiting

2953 + 2953 = 5906

Project Mineral Avenue Redevelopment

Subject Trip Generation for Drive-In Bank

Designed by MAG

Date August 10, 2023

Job No. 196757001

Checked by

Date

Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Drive-In Bank (912)

Independent Variable - 1000 Square Feet Gross Floor Area (X)

SF = 6,500

X = 6.500

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 26.35 * (X)

T = 26.35 * 6.5

Directional Distribution: 51% ent. 49% exit.

T = 171 Average Vehicle Trip Ends

87 entering 84 exiting

87 + 84 = 171

Saturday

T = 86.48 * (X)

T = 86.48 * 6.5

Directional Distribution: 50% ent. 50% exit.

T = 562 Average Vehicle Trip Ends

281 entering 281 exiting

281 + 281 = 562

Project Mineral Avenue Redevelopment
 Subject Trip Generation for Fast Casual Restaurant
 Designed by MAG Date August 10, 2023 Job No. 196757001
 Checked by _____ Date _____ Sheet No. 1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Fast Casual Restaurant (930)

Independent Variable - 1000 Square Feet (X)

SF = 4,500

X = 4.500

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 26.35 * (X)

T = 26.35 * 4.5

Directional Distribution: 51% ent. 49% exit.

T = 119 Average Vehicle Trip Ends

61 entering 58 exiting

61 + 58 = 119

Project Mineral Avenue Redevelopment
Subject Trip Generation for High Turnover Sit-Down Restaurant
Designed by MAG Date August 10, 2023 Job No. 196757001
Checked by Date Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - High Turnover Sit-Down Restaurant (932)

Independent Variable - 1000 Square Feet (X)

SF = 10,000

X = 10

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 32.64 * (X)

T = 32.64 * 10

Directional Distribution: 55% ent. 45% exit.

T = 326 Average Vehicle Trip Ends

179 entering 147 exiting

179 + 147 = 326

0 + 0 = 0

Project Mineral Avenue Redevelopment*Subject* Trip Generation for Fast-Food Restaurant with Drive-Through Window*Designed by* MAG*Date* August 10, 2023*Job No.* 196757001*Checked by**Date**Sheet No.* of**TRIP GENERATION MANUAL TECHNIQUES**ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Fast-Food Restaurant with Drive-Through Window (934)

Independent Variable - 1000 Square Feet (X)

SF = 12,000

X = 12.000

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 55.25 * (X)

T = 55.25 * 12

Directional Distribution: 51% ent. 49% exit.

T = 663 Average Vehicle Trip Ends

338 entering 325 exiting

338 + 325 = 663

Saturday

T = 616.12 * (X)

T = 616.12 * 12

Directional Distribution: 50% ent. 50% exit.

T = 7393 Average Vehicle Trip Ends

3696 entering 3697 exiting

3696 + 3697 = 7393

Project Mineral Avenue Redevelopment

Subject Trip Generation for Coffee/Donut Shop with Drive Through

Designed by MAG

Date August 10, 2023

Job No. 196757001

Checked by

Date

Sheet No. of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Coffee/Donut Shop with Drive-Through Window (937)

Independent Variable - 1000 Square Feet Gross Floor Feet (X)

Gross Floor Area = 2,500

X = 2.5

T = Average Vehicle Trip Ends

Saturday Peak Hour of the Generator

T = 87.91 * (X)

T = 87.91 * 2.5

Directional Distribution: 50% ent. 50% exit.

T = 220 Average Vehicle Trip Ends

110 entering 110 exiting

110 + 110 = 220

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Mineral Avenue Redevelopment			Organization:	Kimley-Horn and Associates, Inc.
Project Location:	Littleton, Colorado			Performed By:	
Scenario Description:				Date:	
Analysis Year:				Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office		-	1,000 Sq Ft	0	0	0
Retail		316	1,000 Sq Ft	2,540	1,281	1,259
Restaurant		36	1,000 Sq Ft	1,499	775	724
Cinema/Entertainment		-	Screen(s)	0	0	0
Residential		-	Dwelling Unit(s)	0	0	0
Hotel		-	Room(s)	0	0	0
All Other Land Uses ²		-	0	0	0	0
				4,039	2,056	1,983

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00	0%	0%	1.00	0%	0%
Retail	1.00	0%	0%	1.00	0%	0%
Restaurant	1.00	0%	0%	1.00	0%	0%
Cinema/Entertainment	1.00	0%	0%	1.00	0%	0%
Residential	1.00	0%	0%	1.00	0%	0%
Hotel	1.00	0%	0%	1.00	0%	0%
All Other Land Uses ²	1.00	0%	0%	1.00	0%	0%

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

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		225	0	0	0
Restaurant	0	297		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	4,039	2,056	1,983
Internal Capture Percentage	26%	25%	26%
External Vehicle-Trips ⁵	2,995	1,534	1,461
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	23%	18%
Restaurant	29%	41%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

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

Project Name:	Mineral Avenue Redevelopment
Analysis Period:	

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	1281	1281	1.00	1259	1259
Restaurant	1.00	775	775	1.00	724	724
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	25		365	50	327	63
Restaurant	22	297		58	130	51
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		102	16	0	0	0
Retail	0		225	0	0	0
Restaurant	0	641		0	0	0
Cinema/Entertainment	0	51	23		0	0
Residential	0	128	109	0		0
Hotel	0	26	39	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	297	984	1281	984	0	0
Restaurant	225	550	775	550	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	225	1034	1259	1034	0	0
Restaurant	297	427	724	427	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	0	0	0	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Costco Trip Generation Memorandum

Technical Memorandum

November 13, 2023

Project# 29755

To: Pari Holliday, Costco Wholesale

From: Kristine Connolly and Amy Griffiths

RE: Littleton Costco Trip Generation

INTRODUCTION

Costco Wholesale is proposing to develop a Costco warehouse and Costco Gasoline fuel station on property in the southeast corner of W Mineral Avenue/Mineral Place in Littleton, Colorado. This memorandum provides a summary of the trip generation rates and characteristics of Costco Warehouses with fuel stations based on surveys of similar Costco locations.

The existing site was previously a research and development office facility for the Lumen company. However, the site is vacant and generates no traffic today. The site would be accessed via connections to W Mineral Avenue, S Elati Street and Southpark Terrace.

The proposed Costco warehouse is anticipated to be approximately 161,000 square-feet and the site will include a four-island fuel station with eight fueling positions on each island, for a total of 32 fueling positions. Both the Costco warehouse and Costco Gasoline fuel station will only be available to Costco members.

COSTCO SITE TRIP GENERATION ESTIMATE

Kittelson & Associates, Inc. (Kittelson) has maintained a database of traffic data and travel characteristics for Costco Wholesale for over 20 years. This database includes trip generation studies conducted at Costco Wholesale sites using industry standard engineering practices consistent with guidance provided within the Institute of Transportation Engineers (ITE) standard reference, *Trip Generation Handbook*.

The resulting Costco trip database includes facilities with gas stations and the gas station trips are inherently included in the overall trip generation for the Costco development (warehouse and fuel station). The database includes trip rates, trip type percentages, and parking demand for Costco locations in the United States as well as Canada and Mexico. The database is updated and refined as new Costco traffic counts or information become available to Kittelson.

Costco has invested significant effort into developing this site-specific trip generation database for both their warehouses and their fuel stations because of the unique characteristics of Costco customer travel that exist due to membership requirements and the nature of Costco sales. These unique elements apply to the trip generation and distribution for Costco warehouses, Costco Gasoline fuel stations, and the interaction of trips between the two. Based on the database, Costco sites typically generate higher traffic volumes than other land uses with similar building sizes.

Costco Gasoline fuel stations all function as ancillary uses to the main Costco Warehouses. Like other Costco services, fuel can only be purchased by Costco members. Payment at the Costco fuel stations can only be made with a credit card and, unlike traditional gas/service station operations, there are no other automotive services (such as repairs) or other type of sales (including food or sundries) associated with the Costco Gasoline fuel stations. The Costco Gasoline fuel station will have a minimum of one attendant

working at all times. The attendant(s) is responsible for safety, expediting members' use of the fuel positions, directing entering vehicles to available positions, and managing on-site queues.

Costco Wholesale Trip Generation

The Costco database includes customer survey information to provide the percentage of primary, pass-by, and diverted trips, as further described below.

- Primary Trips (an entirely new trip on the roadway system for the express purpose of driving to and from Costco),
- Pass-by Trips (existing trips that are on roadways adjacent to the site that allow the motorist to turn into the Costco development, and then continue on to their ultimate destination when their shopping is concluded), and
- Diverted Trips (existing trips on nearby roadways in which the motorist makes a decision to drive out-of-direction for a distance to stop at Costco, and when their shopping is concluded, continue on their trip to the ultimate destination).

Table 1 summarizes the average trip generation rates recorded at four representative Costco warehouses in Colorado. The table also summarizes the percentage of primary, pass-by, and diverted trips during weekday PM peak hour and Saturday midday peak hour based on the data from 15 surveys of Costco Warehouses in Western United States¹. In addition to analyzing the traditional weekday AM and PM peak hours, the Saturday midday data is offered because Costco warehouses typically experience the highest customer volumes during the Saturday midday peak. The Costco warehouse typically opens after 10:00 AM weekdays, meaning there are relatively few trips generated during the weekday AM peak hour, and they are comprised mostly of Costco fuel station trips.

Table 1. Average Trip Characteristics for a Costco Warehouse with Fuel Station

Land Use/ Trip Type	Weekday Daily Trip Rate (per KSF)	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Daily Trip Rate (per KSF)	Saturday Midday Peak Hour		
		Trip Rate (per KSF)	Portion In	Portion Out	Trip Rate (per KSF)	Portion In	Portion Out		Trip Rate (per KSF)	Portion In	Portion Out
Costco Warehouse with Fuel Station	65.54	1.33	53%	47%	7.09	49%	51%	78.47	10.97	50%	50%
Primary Trips	N/A	52% ¹			52%			N/A	60%		
Pass-by Trips	N/A	19% ¹			19%			N/A	19%		
Diverted Trips	N/A	29% ¹			29%			N/A	21%		

Source: Kittelson & Associates, 2023.

¹ Weekday AM Peak Hour Pass-by and Diverted rates are based on the PM Peak Hour.

¹ Includes data from Arizona, California, Idaho, Oregon, Utah, and Washington. Weekday PM peak hour trip types were available at 14 sites and Saturday midday peak hour trip types were available at 15 sites.

Littleton Costco Trip Generation Estimate

Table 2 presents trip generation estimates for the proposed Littleton Costco Warehouse and fuel station based on the data shown in Table 1. In this case, pass-by trips would be from W Mineral Avenue. The diverted trips in the study area are expected to travel to/from Broadway Street, County Line Road and Colorado 470. While treated as new trips and some nearby intersections, diverted trips result in fewer system capacity and environmental impacts as compared to new trips to the system because these trips generally have no impact once traced back onto the system they divert from.

Table 2. Littleton Costco Warehouse with Fuel Station Trip Generation Estimate

Land Use/ Trip Type	Size	Weekday Daily Trips (Saturday Daily Trips)	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Costco Warehouse with Fuel Station	161 KSF	10,552 (12,634)	214	113	101	1,141	559	582	1,766	883	883
Pass-by Trips (19% weekday AM, weekday PM, and Sat midday)		N/A	-40	-20	-20	-216	-108	-108	-336	-168	-168
Diverted Trips (29% weekday AM and PM, 21% Sat midday)		N/A	-62	-31	-31	-330	-165	-165	-370	-185	-185
Net New Primary Trips			112	62	50	595	286	309	1,060	530	530

Source: Kittelson & Associates, 2023

Comparison to ITE Trip Generation Rates for Discount Club

The use of the Costco-specific trip generation data results in a higher number of total trips at the site driveway and nearby off-site intersections when compared to the general data in the *ITE Trip Generation Manual* for Discount Club (ITE Land Use Code 857). By comparison, the *Trip Generation Manual* Discount Club data was collected at:

- unidentified retail businesses,
- in unidentified communities,
- at sites that may or may not include on-site fueling pumps,
- and at sites located in Alabama, Alberta (Canada), California, Connecticut, Delaware, Florida, Maryland, Massachusetts, Ohio, Oregon, Pennsylvania, and Washington.

The *ITE Trip Generation Manual, 11th Edition* trip rates were reviewed to provide a comparison to the Costco database. The land use designation Discount Club (857) was applied, with estimates provided in Table 3. The ITE data for Discount Club includes some sites with fuel centers and provides pass-by trip rates for the weekday PM and Saturday midday peak hours. ITE does not provide diverted trip rates for Discount Club.

Table 3. Littleton Costco Warehouse and Costco Fuel Station Trip Generation Estimate Using ITE Rates

Land Use	Size	Weekday Daily Trips (Saturday Daily Trips)	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
			In	Out	Total	In	Out	Total	In	Out	Total
Discount Club (ITE Code 857) Total Trip Ends	161 KSF	6,836 (8,654)	129	79	50	675	337	338	1,026	503	523
Pass-by Trips (34% weekday AM and PM ¹ , 25% Sat midday)		N/A ²	-44	-22	-22	-230	-115	-115	-256	-128	-128
Net New Primary Trips			85	57	28	445	222	223	770	375	395

¹ Weekday AM Peak Hour Pass-by and Diverted rates are based on the PM Peak Hour.

² Weekday Daily and Saturday Daily trip estimates do not account for pass-by and diverted trips.

The trip generation estimate based on the Costco database was compared to the estimate based on the ITE *Trip Generation Manual* in Table 4.

Table 4. Net New Primary Trip Generation Comparison for Littleton Costco

	Weekday Daily ¹	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Daily ¹	Saturday Midday Peak Hour
Costco Specific Data	10,552	112	595	12,634	1,060
ITE Manual	6,836	85	445	8,654	770
Difference	+3,716	+27	+150	+3,980	+290

¹ Weekday Daily and Saturday Daily trip estimates do not account for pass-by and diverted trips.

As shown in Table 4, the trip generation based on Costco Specific data shows a higher number of net new primary (external) trips. It is our professional judgment that the Costco trip rates derived from existing Costco sites are representative of the expected trip generation for the proposed Littleton Costco. We therefore recommend using them for evaluating the impact of the proposed Costco site on the surrounding roadway network. We also note that Costco makes a significant long-term investment in each of their development sites and, as a member-based retailer, it is in Costco's best interest to be certain that the transportation facilities that will serve the site are appropriately designed to facilitate access for members as well as to serve the needs of the surrounding community.

Please contact us at 503.535.7448 or kconnolly@kittelton.com if you have questions and/or want to discuss this information.

COSTCO TRIP GENERATION FOR ANCILLARY GAS STATION

It is common and consistent practice for the over 100 Costco sites we have worked on to provide a consolidated trip generation rate for the Costco warehouse and fuel facility as they are contained on the same site, the fuel facility is an ancillary use for the warehouse (essentially another product Costco provides to its members), and our database data collection includes the combination of warehouses and fuel facilities in the data. There is a large proportion of shared trips between the warehouse and fuel facility. Like other Costco services, fuel can only be purchased by Costco members and require a membership card for pump activation. The membership base is not defined by the size of the fuel facility, but rather by the size and market area of the warehouse. The primary outcome of providing a larger fuel facility is not to significantly increase trips to the site, but to reduce wait times and queues to provide better service and experiences for Costco members.

Costco makes a significant long-term investment in each of their development sites and, as a member-based retailer, it is in their best interest to be certain that transportation facilities that will serve the site once it is operational are appropriate to facilitate access for members as well as to serve the needs of the surrounding community. Given this commitment, the Costco trip data used for the proposed Littleton Costco traffic study was provided to Kimley Horn by Kittelson & Associates, Inc. on behalf of Costco to make certain that adequate transportation facilities could be appropriately identified.

The trip generation rates proposed in the November 13, 2023 *Littleton Costco Trip Generation Memorandum* (November 2023 Memo) are based on data collected at existing Costco sites that are similar to the market area and customer base that is expected for the proposed site in Littleton. For comparison, the table below shows that the proposed trip generation rates are consistent with the trip generation observed at three existing Costco warehouses that have 30-32 position fuel facilities as is proposed in Littleton:

Costco Warehouse with Fuel Facility	Number of Fueling Positions	Weekday AM Peak Hour Trip Rate (per KSF)	Weekday PM Peak Hour Trip Rate (per KSF)	Saturday Midday Peak Hour Trip Rate (per KSF)
Scottsdale, AZ	32	1.9	7.6	11.6
Bellingham, WA	30	1.4	7.2	8.7
Spokane, WA	30	1.3	6.9	8.8
Average Rates:		1.53	7.23	9.7
Littleton Proposed Rates (November 2023 Memo):		1.33	7.09	10.97

As can be seen from the table, the trip generation rates proposed for the Littleton Costco site are consistent with data collected at existing Costco locations that have 30 and 32 fueling position Costco Gasoline stations as part of the Costco development. The trip generation rates proposed in the November 2023 Memo were developed in accordance with the procedures and methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Handbook*, which recommends using a weighted average rate based on 6 or more sites when the weighted average line falls within the cluster of data points at the size of the study site. As shown in the table above, the weighted average rates calculated based on 15 sites in the western United States would fall within the cluster of individual sites of the same size. Therefore, it is our continued professional judgment that the trip rates from the November 2023 Memo are an accurate and fair representation of impacts for the proposed Littleton Costco.

APPENDIX D

Internal Trip Distribution Figures

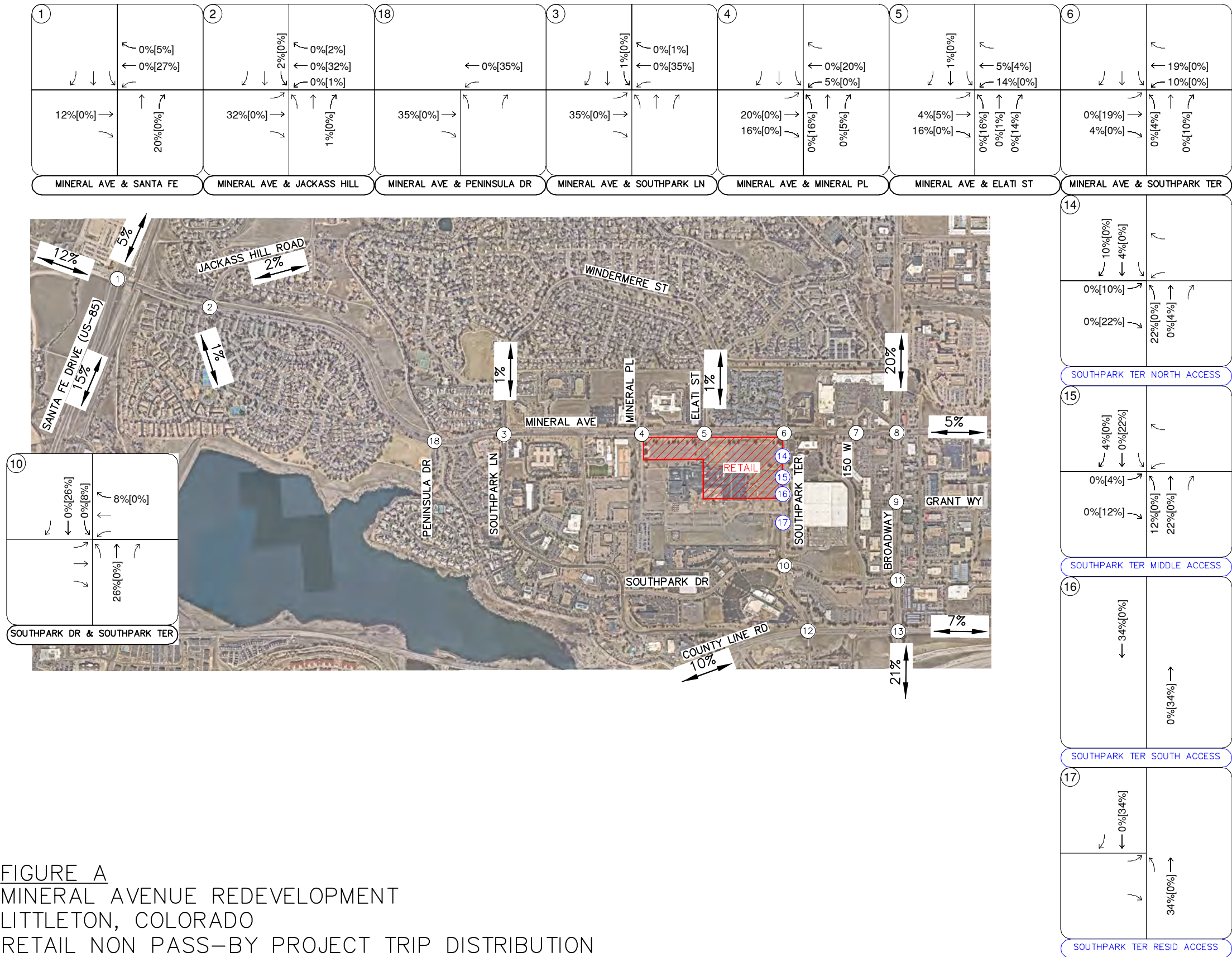


FIGURE A
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RETAIL NON PASS-BY PROJECT TRIP DISTRIBUTION

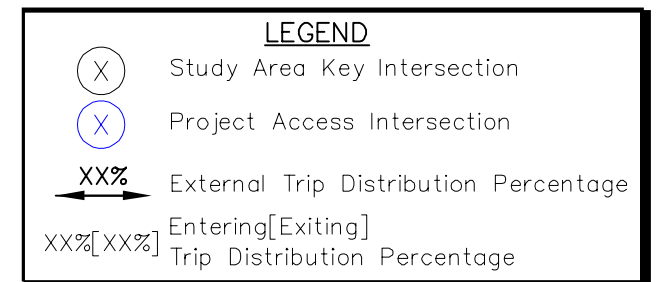
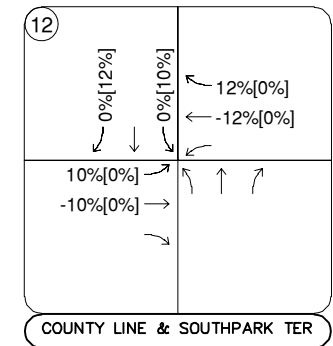
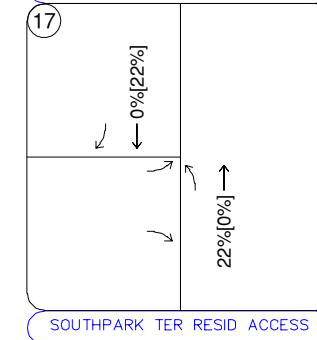
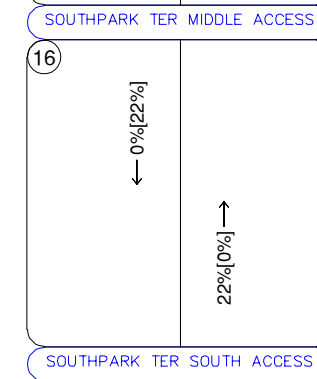
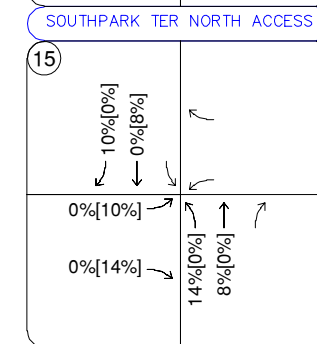
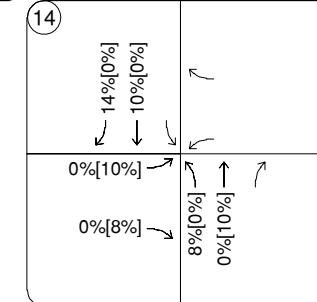
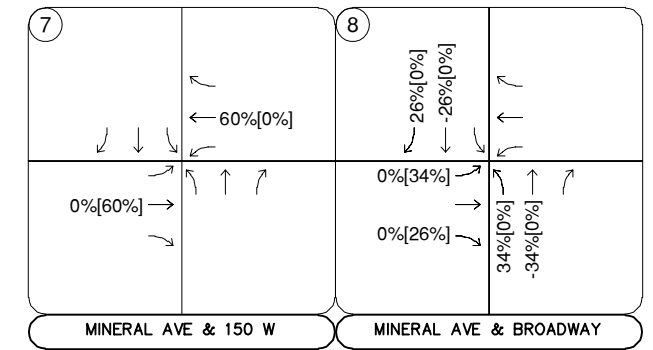
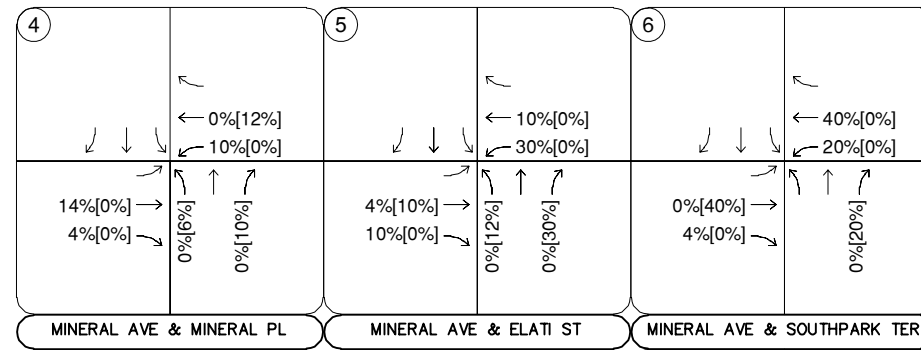
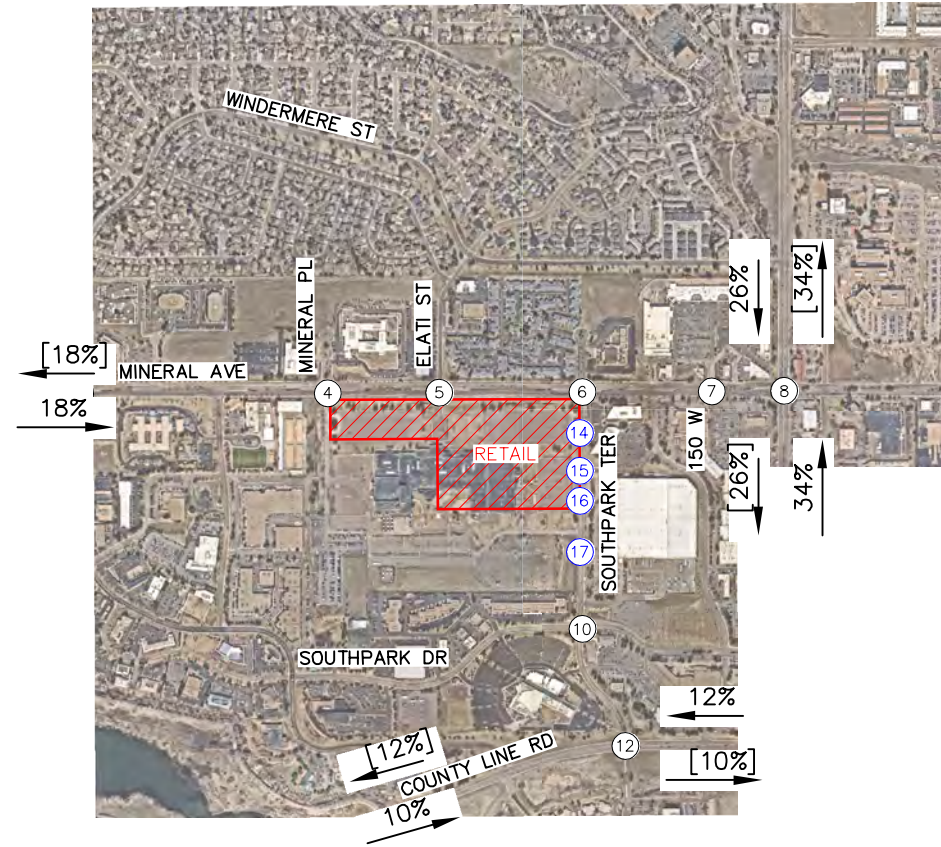
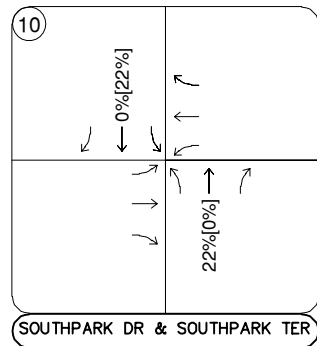
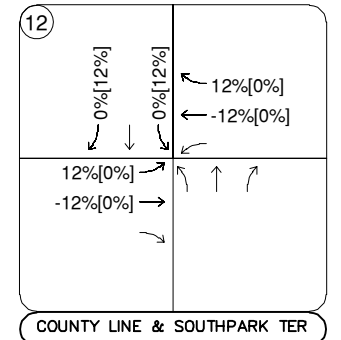
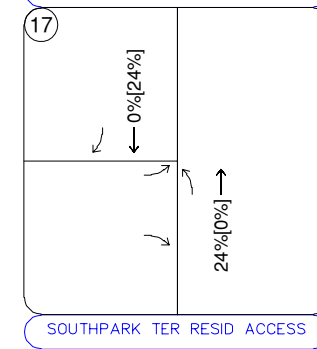
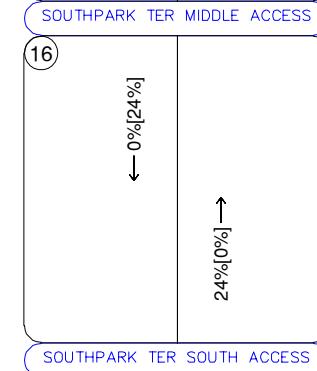
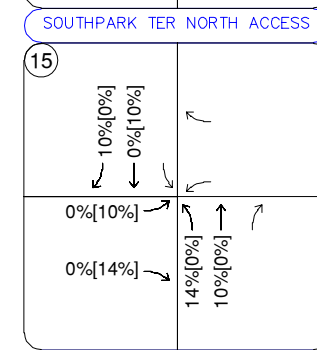
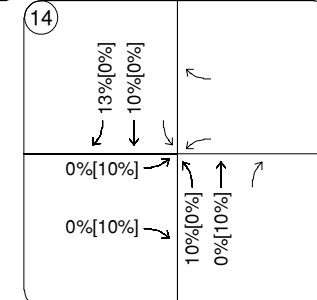
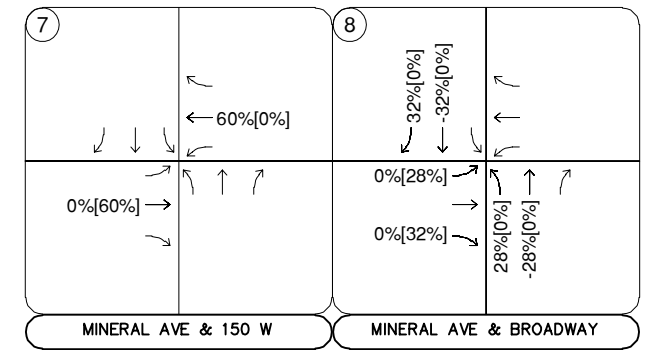
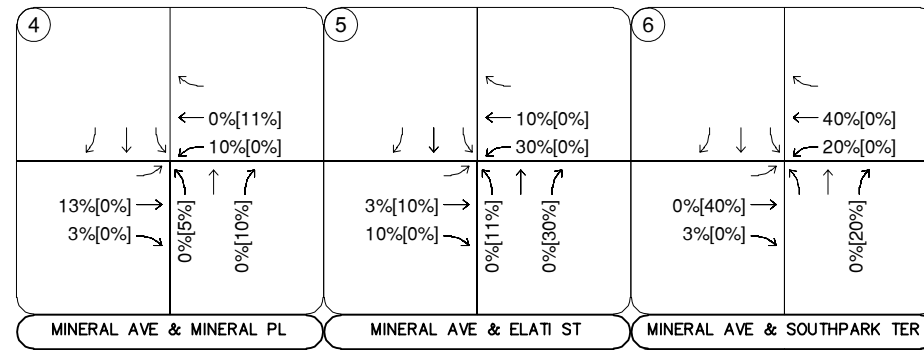
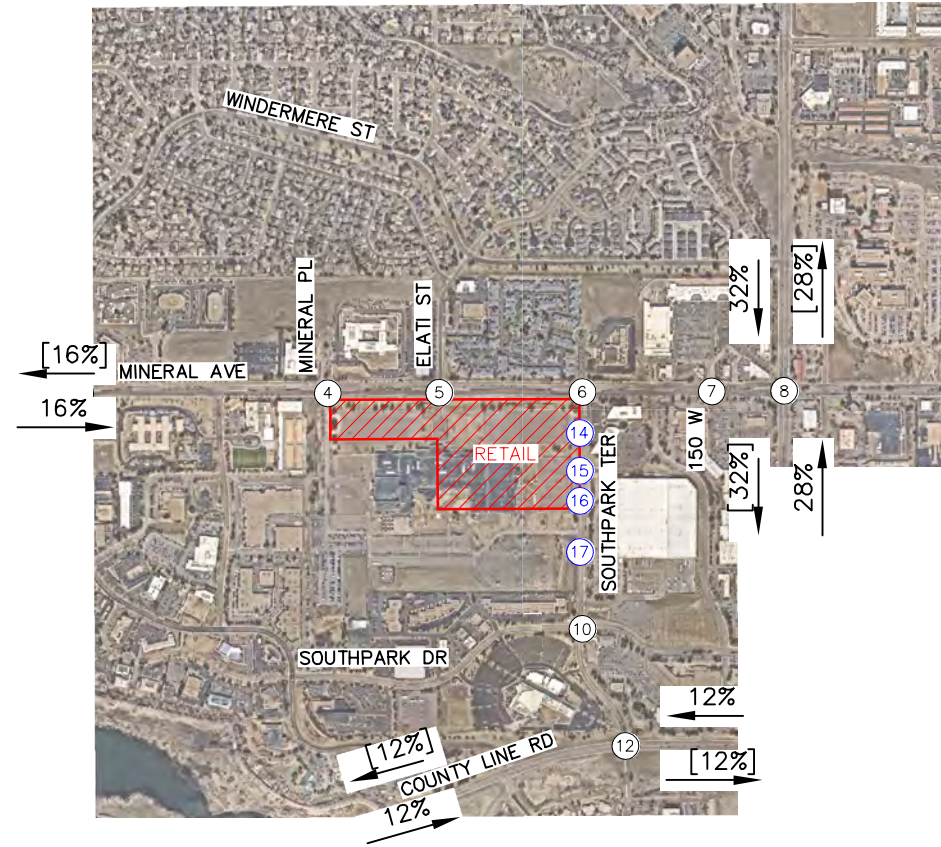
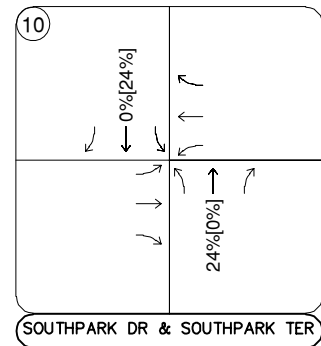


FIGURE B
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RETAIL AM PASS-BY/DIVERTED LINK PROJECT TRIP DISTRIBUTION



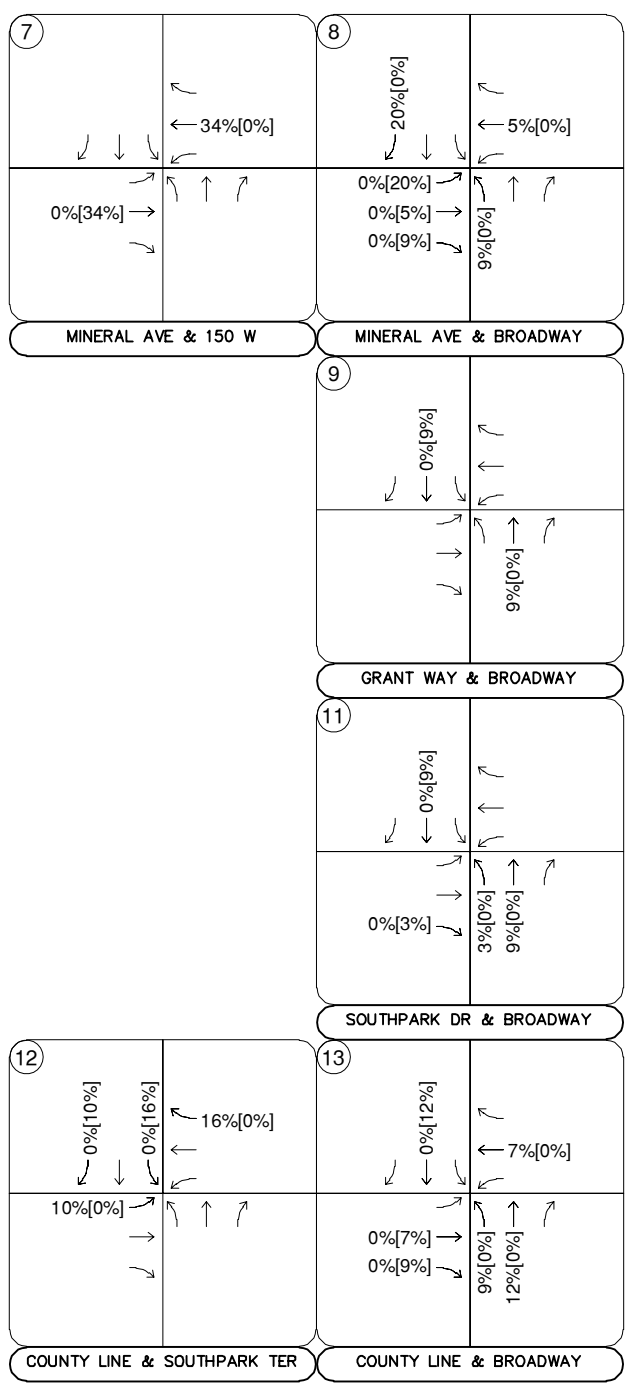
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- (X) Study Area Key Intersection
- (X) Project Access Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE C
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RETAIL PM PASS-BY/DIVERTED LINK PROJECT TRIP DISTRIBUTION

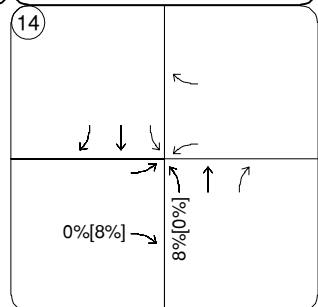
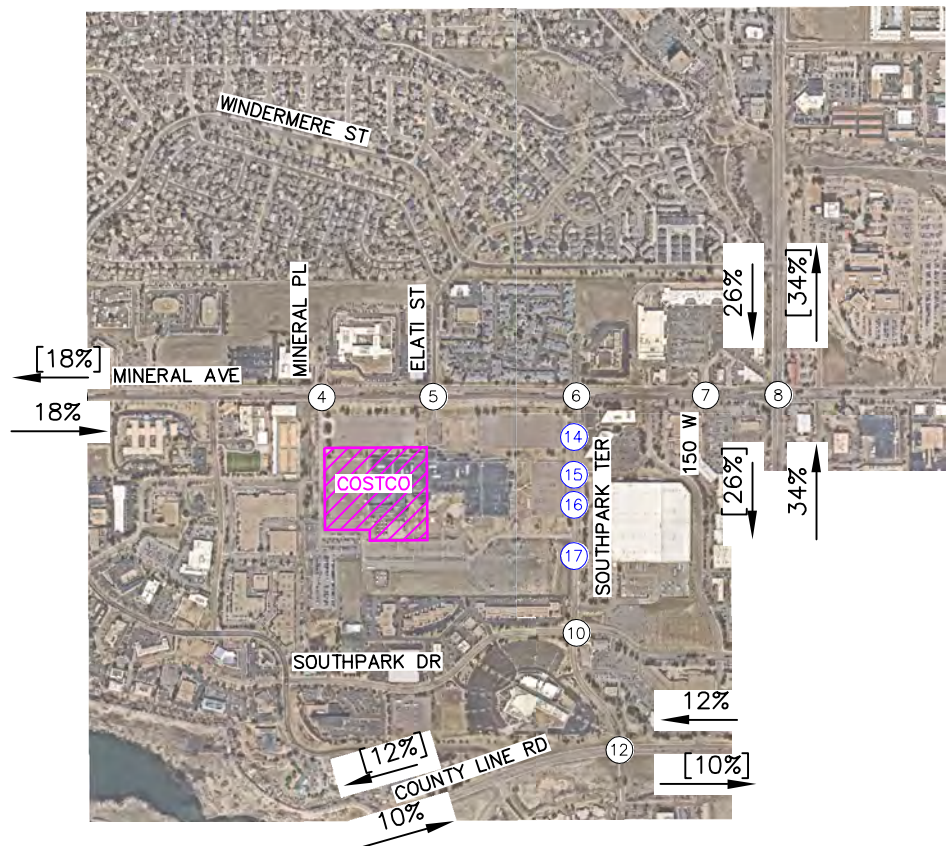
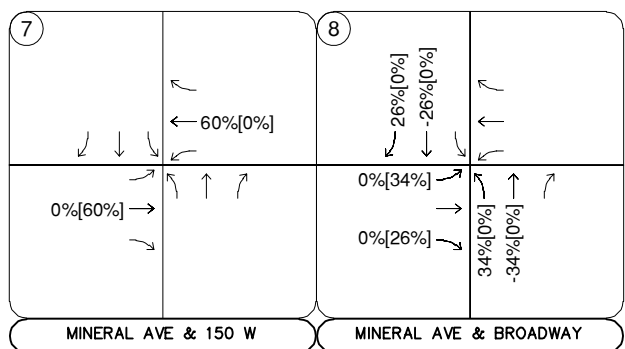
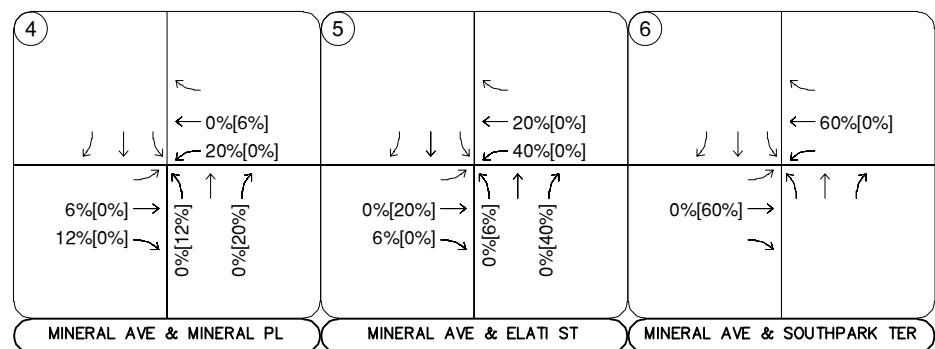


FIGURE D
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
COSTCO NON PASS-BY PROJECT TRIP DISTRIBUTION

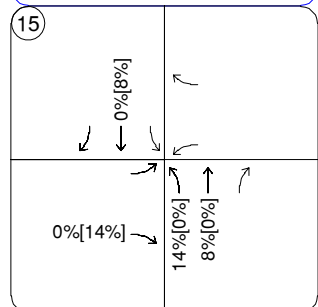


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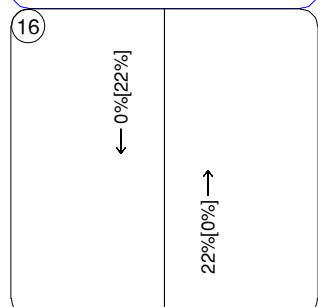
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- xx%[xx%] Entering[Exiting] Trip Distribution Percentage



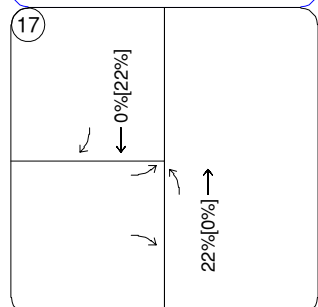
SOUTHPARK TER NORTH ACCESS



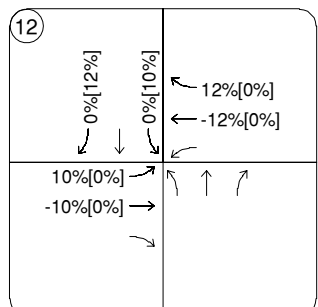
SOUTHPARK TER MIDDLE ACCESS



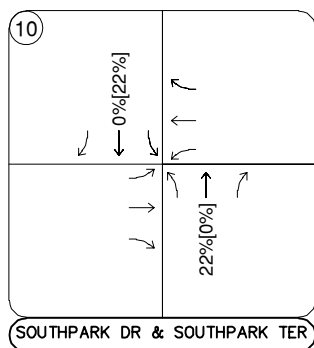
SOUTHPARK TER SOUTH ACCESS



SOUTHPARK TER RESID ACCESS

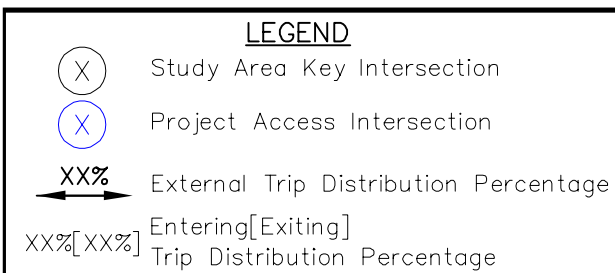


COUNTY LINE & SOUTHPARK TER



SOUTHPARK DR & SOUTHPARK TER

FIGURE E
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
COSTCO AM PASS-BY/DIVERTED LINK PROJECT TRIP DISTRIBUTION



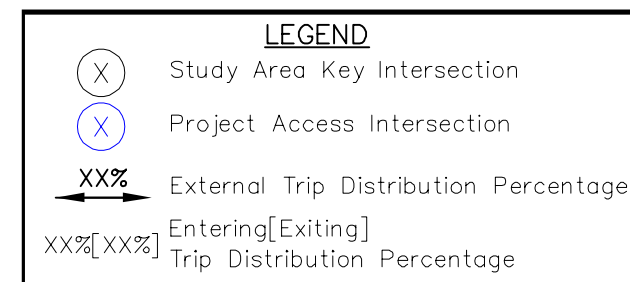
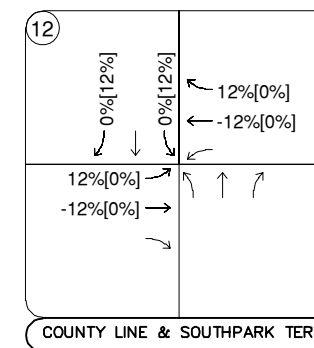
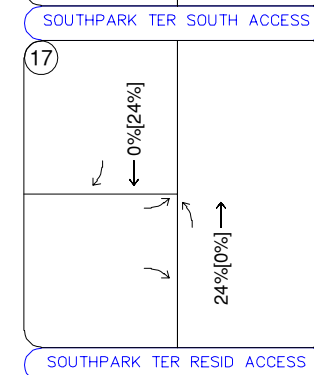
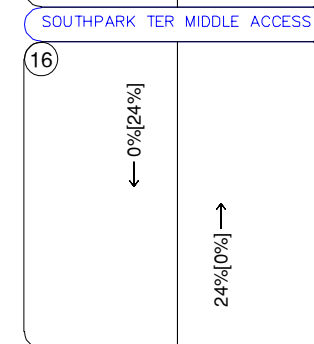
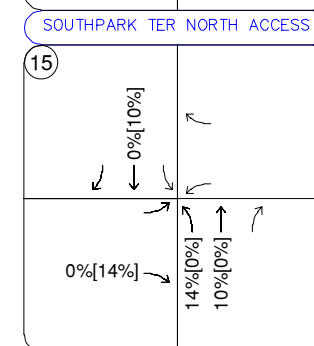
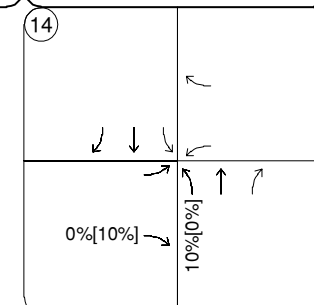
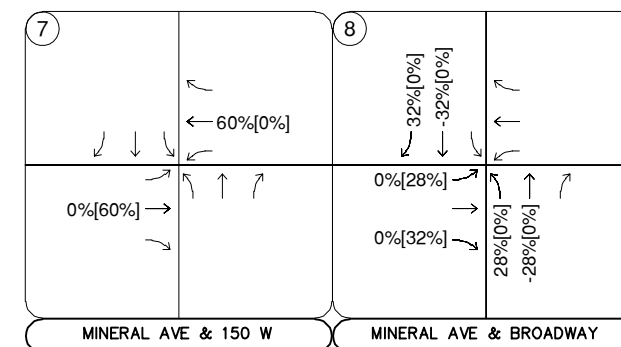
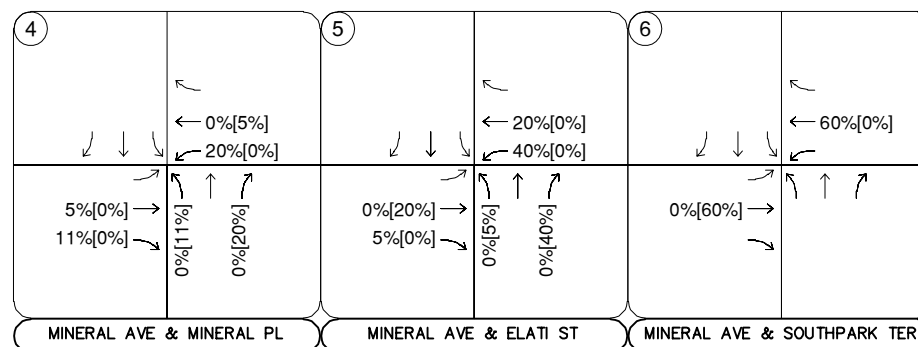
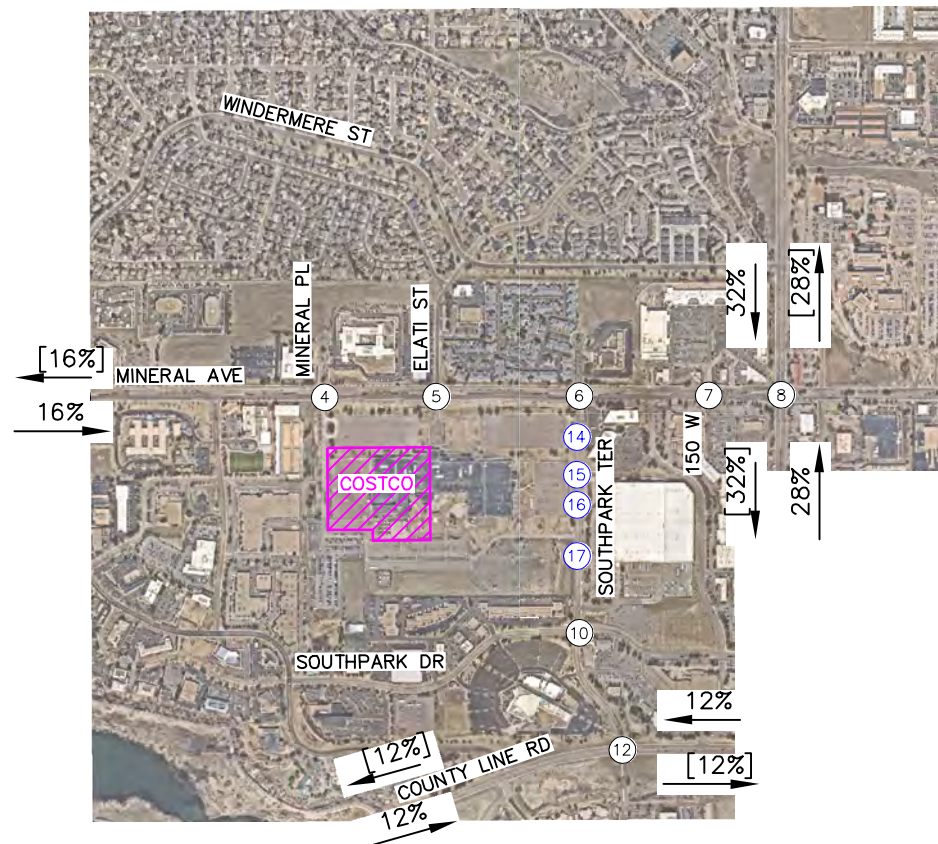
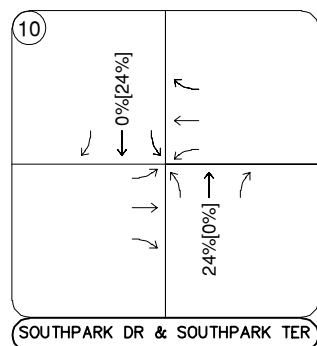


FIGURE F
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
COSTCO PM PASS-BY/DIVERTED LINK PROJECT TRIP DISTRIBUTION

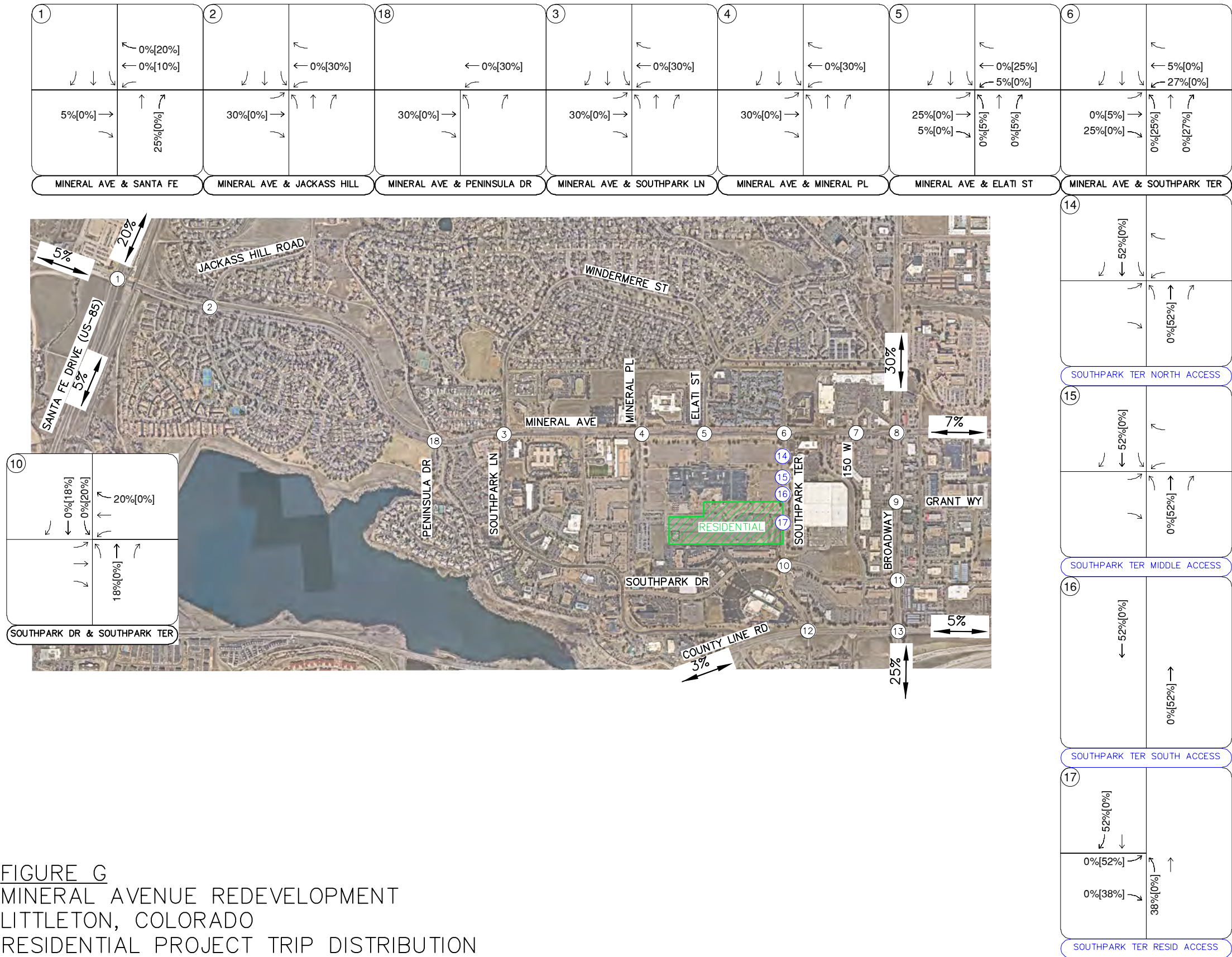
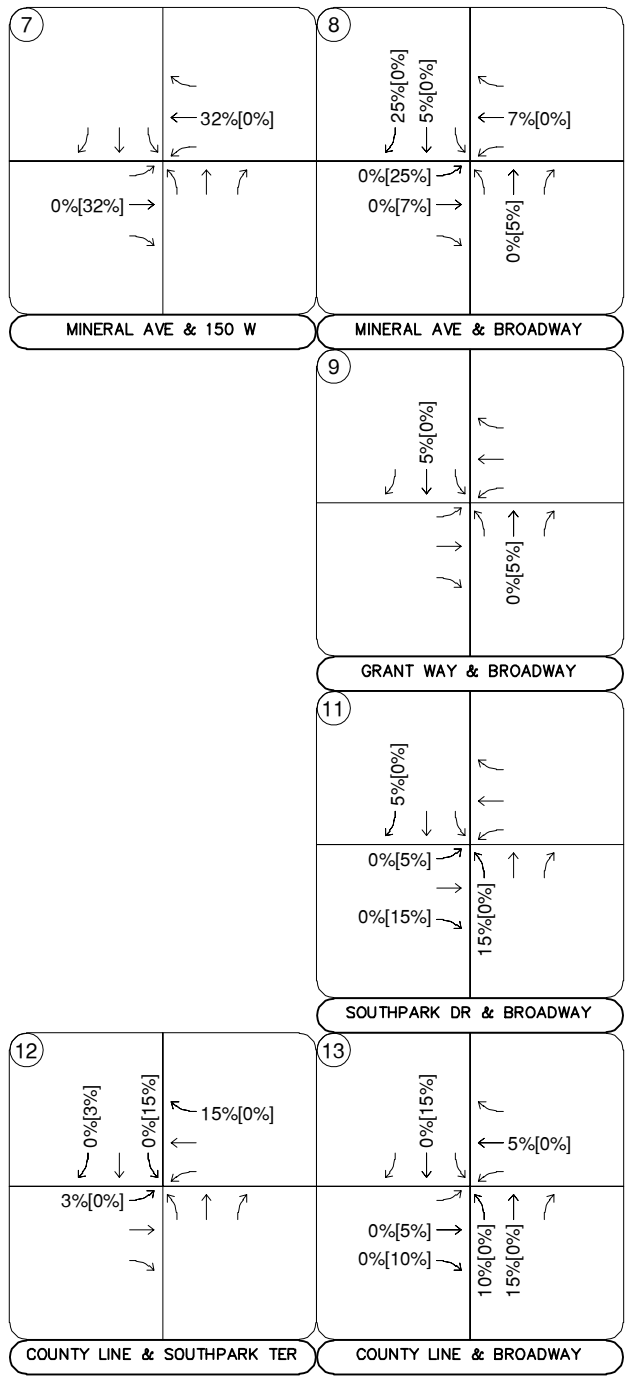


FIGURE G
MINERAL AVENUE REDEVELOPMENT
LITTLETON, COLORADO
RESIDENTIAL PROJECT TRIP DISTRIBUTION



LEGEND

(X) Study Area Key Intersection
(X) Project Access Intersection
XX% External Trip Distribution Percentage
XX%[XX%] Entering[Exiting] Trip Distribution Percentage

APPENDIX E

Intersection Analysis Worksheets

Timings

2023 Adjusted Existing AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	911	762	161	423	259	157	1614	198	315	1423	120
Future Volume (vph)	207	911	762	161	423	259	157	1614	198	315	1423	120
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0	24.0	11.0	24.0	
Total Split (s)	21.0	42.0		19.0	40.0		15.0	70.0	70.0	19.0	74.0	
Total Split (%)	14.0%	28.0%		12.7%	26.7%		10.0%	46.7%	46.7%	12.7%	49.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
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)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)

														
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8							
19 s	70 s	19 s	42 s	15 s	74 s	21 s	40 s							

HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 		 	 		 	 	
Traffic Volume (veh/h)	207	911	762	161	423	259	157	1614	198	315	1423	120
Future Volume (veh/h)	207	911	762	161	423	259	157	1614	198	315	1423	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	930	0	164	432	0	160	1647	202	321	1452	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	853		154	894		204	1516	676	299	1615	
Arrive On Green	0.08	0.24	0.00	0.09	0.25	0.00	0.06	0.43	0.43	0.09	0.45	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	211	930	0	164	432	0	160	1647	202	321	1452	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	9.0	36.0	0.0	13.0	15.5	0.0	6.9	64.0	12.6	13.0	56.5	0.0
Cycle Q Clear(g_c), s	9.0	36.0	0.0	13.0	15.5	0.0	6.9	64.0	12.6	13.0	56.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	853		154	894		204	1516	676	299	1615	
V/C Ratio(X)	0.81	1.09		1.06	0.48		0.78	1.09	0.30	1.07	0.90	
Avail Cap(c_a), veh/h	346	853		154	894		207	1516	676	299	1615	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.93	0.93	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	68.3	57.0	0.0	68.5	47.8	0.0	69.6	43.0	28.3	68.5	37.8	0.0
Incr Delay (d2), s/veh	10.4	58.4	0.0	87.4	0.4	0.0	17.5	50.3	1.1	72.4	8.4	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	4.4	23.1	0.0	9.7	7.0	0.0	3.5	38.4	5.1	8.8	26.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	115.4	0.0	155.9	48.2	0.0	87.2	93.3	29.4	140.9	46.2	0.0
LnGrp LOS	E	F		F	D		F	F	C	F	D	
Approach Vol, veh/h	1141			596			2009			1773		
Approach Delay, s/veh	108.6			77.8			86.4			63.3		
Approach LOS	F			E			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	70.0	19.0	42.0	14.8	74.2	17.3	43.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	13.0	64.0	13.0	36.0	9.0	68.0	15.0	34.0				
Max Q Clear Time (g_c+I1), s	15.0	66.0	15.0	38.0	8.9	58.5	11.0	17.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.6	0.2	2.6				

Intersection Summary

HCM 6th Ctrl Delay	82.7
HCM 6th LOS	F

Notes

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

Timings

2023 Adjusted Existing PM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/01/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	715	665	210	775	196	330	1268	221	205	1350	237
Future Volume (vph)	126	715	665	210	775	196	330	1268	221	205	1350	237
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	24.0		11.0	24.0		11.0	24.0	24.0	11.0	24.0	
Total Split (s)	14.0	37.0		24.0	47.0		21.0	71.0	71.0	18.0	68.0	
Total Split (%)	9.3%	24.7%		16.0%	31.3%		14.0%	47.3%	47.3%	12.0%	45.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
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)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	

Intersection Summary

Cycle Length: 150

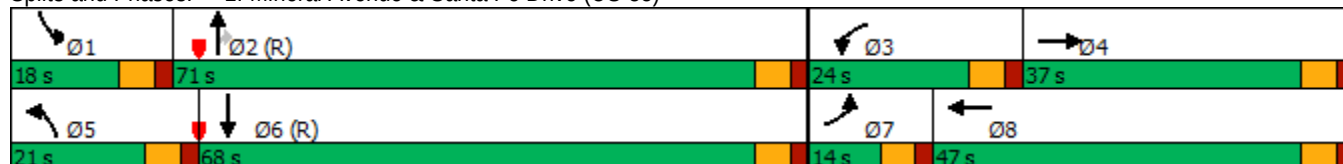
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2023 Adjusted Existing PM

11/01/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	715	665	210	775	196	330	1268	221	205	1350	237
Future Volume (veh/h)	126	715	665	210	775	196	330	1268	221	205	1350	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	131	745	0	219	807	0	344	1321	230	214	1406	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	734		214	981		346	1558	695	259	1469	
Arrive On Green	0.05	0.21	0.00	0.12	0.28	0.00	0.10	0.44	0.44	0.07	0.41	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	131	745	0	219	807	0	344	1321	230	214	1406	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	5.6	31.0	0.0	18.0	31.9	0.0	14.9	49.8	14.3	9.2	57.6	0.0
Cycle Q Clear(g_c), s	5.6	31.0	0.0	18.0	31.9	0.0	14.9	49.8	14.3	9.2	57.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	734		214	981		346	1558	695	259	1469	
V/C Ratio(X)	0.75	1.01		1.02	0.82		1.00	0.85	0.33	0.83	0.96	
Avail Cap(c_a), veh/h	184	734		214	981		346	1558	695	276	1469	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.87	0.87	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	70.3	59.5	0.0	66.0	50.9	0.0	67.5	37.6	27.7	68.4	42.7	0.0
Incr Delay (d2), s/veh	14.8	36.8	0.0	63.9	5.0	0.0	47.1	5.9	1.3	17.6	15.3	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	2.9	17.7	0.0	12.0	14.9	0.0	8.9	22.9	5.8	4.7	28.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.1	96.3	0.0	129.9	55.9	0.0	114.6	43.6	28.9	86.1	58.0	0.0
LnGrp LOS	F	F		F	E		F	D	C	F	E	
Approach Vol, veh/h	876			1026			1895			1620		
Approach Delay, s/veh	94.7			71.7			54.7			61.7		
Approach LOS	F			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	71.8	24.0	37.0	21.0	68.0	13.6	47.4				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	65.0	18.0	31.0	15.0	62.0	8.0	41.0				
Max Q Clear Time (g_c+l1), s	11.2	51.8	20.0	33.0	16.9	59.6	7.6	33.9				
Green Ext Time (p_c), s	0.1	8.3	0.0	0.0	0.0	1.9	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay	66.5											
HCM 6th LOS	E											

Timings

2028 Background AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	934	781	599	266	1867	526	1782	123
Future Volume (vph)	934	781	599	266	1867	526	1782	123
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	65.0		65.0		85.0	85.0	85.0	
Total Split (%)	43.3%		43.3%		56.7%	56.7%	56.7%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

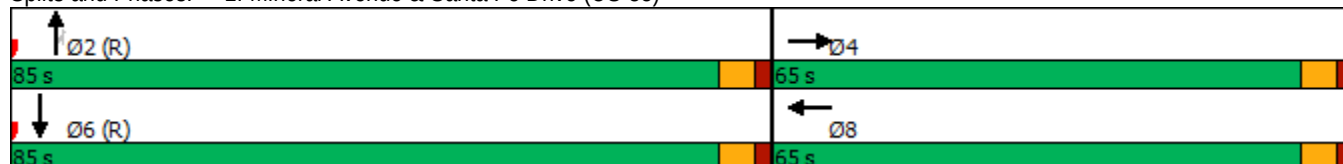
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	934	781	0	599	266	0	1867	526	0	1782	123
Future Volume (veh/h)	0	934	781	0	599	266	0	1867	526	0	1782	123
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	953	0	0	611	0	0	1905	537	0	1818	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1105		0	1588		0	3110	965	0	3110	
Arrive On Green	0.00	0.31	0.00	0.00	0.31	0.00	0.00	0.61	0.61	0.00	0.61	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	953	0	0	611	0	0	1905	537	0	1818	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	37.9	0.0	0.0	14.0	0.0	0.0	34.9	30.0	0.0	32.4	0.0
Cycle Q Clear(g_c), s	0.0	37.9	0.0	0.0	14.0	0.0	0.0	34.9	30.0	0.0	32.4	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1105		0	1588		0	3110	965	0	3110	
V/C Ratio(X)	0.00	0.86		0.00	0.38		0.00	0.61	0.56	0.00	0.58	
Avail Cap(c_a), veh/h	0	1398		0	2008		0	3110	965	0	3110	
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)	0.00	1.00	0.00	0.00	0.87	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	48.7	0.0	0.0	40.4	0.0	0.0	18.3	17.3	0.0	17.8	0.0
Incr Delay (d2), s/veh	0.0	4.8	0.0	0.0	0.1	0.0	0.0	0.9	2.3	0.0	0.8	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	0.0	17.5	0.0	0.0	6.0	0.0	0.0	13.8	11.5	0.0	12.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	53.4	0.0	0.0	40.6	0.0	0.0	19.2	19.6	0.0	18.6	0.0
LnGrp LOS	A	D		A	D		A	B	B	A	B	
Approach Vol, veh/h	953			611			2442			1818		
Approach Delay, s/veh	53.4			40.6			19.3			18.6		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	97.4			52.6			97.4			52.6		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	79.0			59.0			79.0			59.0		
Max Q Clear Time (g_c+l1), s	36.9			39.9			34.4			16.0		
Green Ext Time (p_c), s	27.2			6.8			22.0			4.9		
Intersection Summary												
HCM 6th Ctrl Delay	26.9											
HCM 6th LOS	C											

Timings

2028 Background PM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	733	682	1010	201	1429	437	1594	243
Future Volume (vph)	733	682	1010	201	1429	437	1594	243
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	63.0		63.0		87.0	87.0	87.0	
Total Split (%)	42.0%		42.0%		58.0%	58.0%	58.0%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

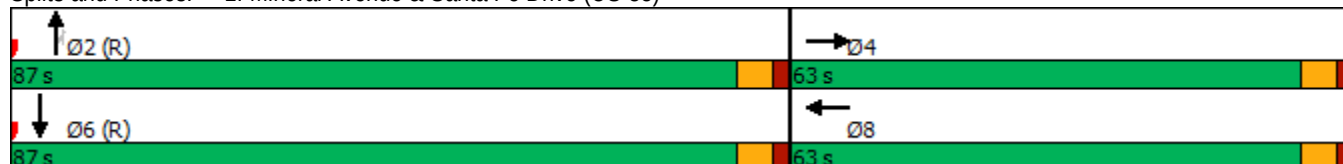
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	733	682	0	1010	201	0	1429	437	0	1594	243
Future Volume (veh/h)	0	733	682	0	1010	201	0	1429	437	0	1594	243
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	764	0	0	1052	0	0	1489	455	0	1660	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	930		0	1336		0	3362	1044	0	3362	
Arrive On Green	0.00	0.26	0.00	0.00	0.26	0.00	0.00	0.66	0.66	0.00	0.66	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	764	0	0	1052	0	0	1489	455	0	1660	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	30.3	0.0	0.0	28.7	0.0	0.0	21.1	20.6	0.0	24.7	0.0
Cycle Q Clear(g_c), s	0.0	30.3	0.0	0.0	28.7	0.0	0.0	21.1	20.6	0.0	24.7	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	930		0	1336		0	3362	1044	0	3362	
V/C Ratio(X)	0.00	0.82		0.00	0.79		0.00	0.44	0.44	0.00	0.49	
Avail Cap(c_a), veh/h	0	1350		0	1940		0	3362	1044	0	3362	
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)	0.00	1.00	0.00	0.00	0.77	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	52.1	0.0	0.0	51.5	0.0	0.0	12.4	12.3	0.0	13.0	0.0
Incr Delay (d2), s/veh	0.0	2.8	0.0	0.0	1.1	0.0	0.0	0.4	1.3	0.0	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	0.0	13.9	0.0	0.0	12.4	0.0	0.0	8.1	7.6	0.0	9.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	54.8	0.0	0.0	52.6	0.0	0.0	12.8	13.6	0.0	13.5	0.0
LnGrp LOS	A	D		A	D		A	B	B	A	B	
Approach Vol, veh/h	764			1052			1944			1660		
Approach Delay, s/veh	54.8			52.6			13.0			13.5		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	104.8			45.2			104.8			45.2		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	81.0			57.0			81.0			57.0		
Max Q Clear Time (g_c+l1), s	23.1			32.3			26.7			30.7		
Green Ext Time (p_c), s	21.8			5.7			20.5			8.5		
Intersection Summary												
HCM 6th Ctrl Delay	26.7											
HCM 6th LOS	C											

Timings

2028 Total AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	989	781	709	305	1867	624	1782	123
Future Volume (vph)	989	781	709	305	1867	624	1782	123
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	62.0		62.0		88.0	88.0	88.0	
Total Split (%)	41.3%		41.3%		58.7%	58.7%	58.7%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

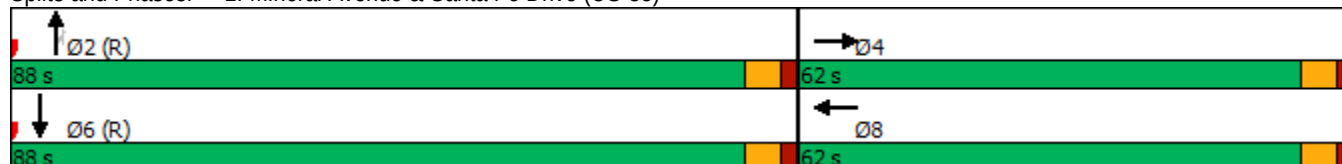
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2028 Total AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	989	781	0	709	305	0	1867	624	0	1782	123
Future Volume (veh/h)	0	989	781	0	709	305	0	1867	624	0	1782	123
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1009	0	0	723	0	0	1905	637	0	1818	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1146		0	1646		0	3052	947	0	3052	
Arrive On Green	0.00	0.32	0.00	0.00	0.32	0.00	0.00	0.60	0.60	0.00	0.60	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	1009	0	0	723	0	0	1905	637	0	1818	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	40.3	0.0	0.0	16.8	0.0	0.0	35.9	40.6	0.0	33.4	0.0
Cycle Q Clear(g_c), s	0.0	40.3	0.0	0.0	16.8	0.0	0.0	35.9	40.6	0.0	33.4	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1146		0	1646		0	3052	947	0	3052	
V/C Ratio(X)	0.00	0.88		0.00	0.44		0.00	0.62	0.67	0.00	0.60	
Avail Cap(c_a), veh/h	0	1327		0	1906		0	3052	947	0	3052	
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)	0.00	1.00	0.00	0.00	0.79	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	48.1	0.0	0.0	40.1	0.0	0.0	19.4	20.3	0.0	18.9	0.0
Incr Delay (d2), s/veh	0.0	6.5	0.0	0.0	0.1	0.0	0.0	1.0	3.8	0.0	0.9	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	0.0	18.9	0.0	0.0	7.1	0.0	0.0	14.3	15.8	0.0	13.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	54.6	0.0	0.0	40.3	0.0	0.0	20.3	24.1	0.0	19.7	0.0
LnGrp LOS	A	D		A	D		A	C	C	A	B	
Approach Vol, veh/h	1009			723			2542			1818		
Approach Delay, s/veh	54.6			40.3			21.3			19.7		
Approach LOS	D			D			C			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	95.6			54.4			95.6			54.4		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	82.0			56.0			82.0			56.0		
Max Q Clear Time (g_c+l1), s	42.6			42.3			35.4			18.8		
Green Ext Time (p_c), s	26.9			6.0			22.4			5.8		
Intersection Summary												
HCM 6th Ctrl Delay	28.6											
HCM 6th LOS	C											

Timings

2028 Total PM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↗	↑↑↑	↗	↑↑↑	↗	↑↑↑	↗
Traffic Volume (vph)	800	682	1154	239	1429	567	1594	243
Future Volume (vph)	800	682	1154	239	1429	567	1594	243
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	58.0		58.0		92.0	92.0	92.0	
Total Split (%)	38.7%		38.7%		61.3%	61.3%	61.3%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)

↑ Ø2 (R)	→ Ø4
92 s	58 s
↓ Ø6 (R)	← Ø8
92 s	58 s

HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2028 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	800	682	0	1154	239	0	1429	567	0	1594	243
Future Volume (veh/h)	0	800	682	0	1154	239	0	1429	567	0	1594	243
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	833	0	0	1202	0	0	1489	591	0	1660	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1019		0	1465		0	3233	1004	0	3233	
Arrive On Green	0.00	0.29	0.00	0.00	0.29	0.00	0.00	0.63	0.63	0.00	0.63	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	833	0	0	1202	0	0	1489	591	0	1660	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	32.8	0.0	0.0	32.9	0.0	0.0	22.7	32.7	0.0	26.5	0.0
Cycle Q Clear(g_c), s	0.0	32.8	0.0	0.0	32.9	0.0	0.0	22.7	32.7	0.0	26.5	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1019		0	1465		0	3233	1004	0	3233	
V/C Ratio(X)	0.00	0.82		0.00	0.82		0.00	0.46	0.59	0.00	0.51	
Avail Cap(c_a), veh/h	0	1232		0	1770		0	3233	1004	0	3233	
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)	0.00	1.00	0.00	0.00	0.65	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	49.8	0.0	0.0	49.9	0.0	0.0	14.2	16.1	0.0	15.0	0.0
Incr Delay (d2), s/veh	0.0	3.7	0.0	0.0	1.8	0.0	0.0	0.5	2.5	0.0	0.6	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	0.0	15.1	0.0	0.0	14.3	0.0	0.0	8.8	12.4	0.0	10.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	53.5	0.0	0.0	51.7	0.0	0.0	14.7	18.6	0.0	15.5	0.0
LnGrp LOS	A	D		A	D		A	B	B	A	B	
Approach Vol, veh/h	833			1202			2080			1660		
Approach Delay, s/veh	53.5			51.7			15.8			15.5		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	101.0			49.0			101.0			49.0		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	86.0			52.0			86.0			52.0		
Max Q Clear Time (g_c+l1), s	34.7			34.8			28.5			34.9		
Green Ext Time (p_c), s	22.6			5.5			20.8			8.1		
Intersection Summary												
HCM 6th Ctrl Delay	28.6											
HCM 6th LOS	C											

Timings

2045 Background AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	1017	850	652	289	2032	573	1940	134
Future Volume (vph)	1017	850	652	289	2032	573	1940	134
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	65.0		65.0		85.0	85.0	85.0	
Total Split (%)	43.3%		43.3%		56.7%	56.7%	56.7%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

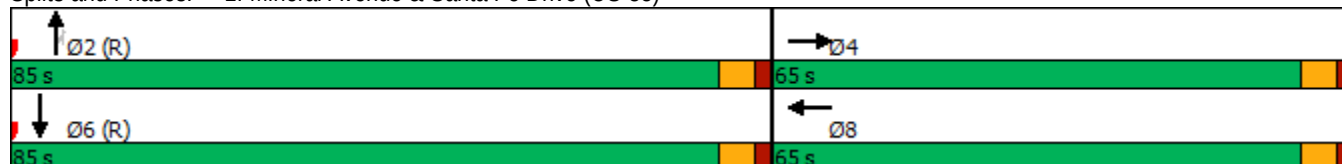
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	1017	850	0	652	289	0	2032	573	0	1940	134
Future Volume (veh/h)	0	1017	850	0	652	289	0	2032	573	0	1940	134
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1038	0	0	665	0	0	2073	585	0	1980	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1185		0	1702		0	2995	930	0	2995	
Arrive On Green	0.00	0.33	0.00	0.00	0.33	0.00	0.00	0.59	0.59	0.00	0.59	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	1038	0	0	665	0	0	2073	585	0	1980	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	41.3	0.0	0.0	15.0	0.0	0.0	42.4	36.3	0.0	39.3	0.0
Cycle Q Clear(g_c), s	0.0	41.3	0.0	0.0	15.0	0.0	0.0	42.4	36.3	0.0	39.3	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1185		0	1702		0	2995	930	0	2995	
V/C Ratio(X)	0.00	0.88		0.00	0.39		0.00	0.69	0.63	0.00	0.66	
Avail Cap(c_a), veh/h	0	1398		0	2008		0	2995	930	0	2995	
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)	0.00	1.00	0.00	0.00	0.84	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	47.1	0.0	0.0	38.3	0.0	0.0	21.6	20.3	0.0	20.9	0.0
Incr Delay (d2), s/veh	0.0	5.8	0.0	0.0	0.1	0.0	0.0	1.3	3.2	0.0	1.2	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	0.0	19.2	0.0	0.0	6.4	0.0	0.0	17.1	14.1	0.0	15.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	52.9	0.0	0.0	38.4	0.0	0.0	22.9	23.5	0.0	22.1	0.0
LnGrp LOS	A	D		A	D		A	C	C	A	C	
Approach Vol, veh/h	1038			665			2658			1980		
Approach Delay, s/veh	52.9			38.4			23.1			22.1		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	94.0			56.0			94.0			56.0		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	79.0			59.0			79.0			59.0		
Max Q Clear Time (g_c+l1), s	44.4			43.3			41.3			17.0		
Green Ext Time (p_c), s	26.1			6.8			22.7			5.4		
Intersection Summary												
HCM 6th Ctrl Delay	29.3											
HCM 6th LOS	C											

Timings
1: Mineral Avenue & Santa Fe Drive (US-85)

2045 Background PM

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	798	742	1099	219	1556	476	1736	264
Future Volume (vph)	798	742	1099	219	1556	476	1736	264
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	63.0		63.0		87.0	87.0	87.0	
Total Split (%)	42.0%		42.0%		58.0%	58.0%	58.0%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

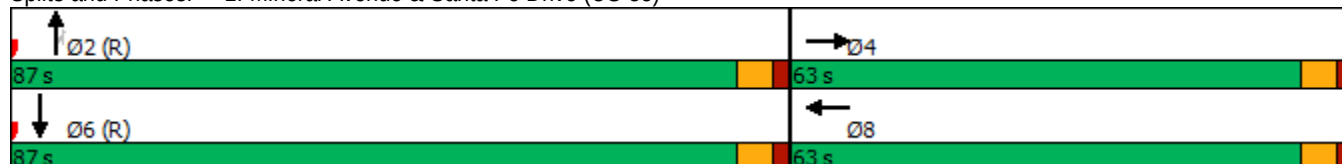
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2045 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	798	742	0	1099	219	0	1556	476	0	1736	264
Future Volume (veh/h)	0	798	742	0	1099	219	0	1556	476	0	1736	264
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	831	0	0	1145	0	0	1621	496	0	1808	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1000		0	1437		0	3261	1012	0	3261	
Arrive On Green	0.00	0.28	0.00	0.00	0.28	0.00	0.00	0.64	0.64	0.00	0.64	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	831	0	0	1145	0	0	1621	496	0	1808	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	32.9	0.0	0.0	31.2	0.0	0.0	25.2	24.7	0.0	29.7	0.0
Cycle Q Clear(g_c), s	0.0	32.9	0.0	0.0	31.2	0.0	0.0	25.2	24.7	0.0	29.7	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1000		0	1437		0	3261	1012	0	3261	
V/C Ratio(X)	0.00	0.83		0.00	0.80		0.00	0.50	0.49	0.00	0.55	
Avail Cap(c_a), veh/h	0	1350		0	1940		0	3261	1012	0	3261	
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)	0.00	1.00	0.00	0.00	0.72	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	50.5	0.0	0.0	49.9	0.0	0.0	14.4	14.3	0.0	15.2	0.0
Incr Delay (d2), s/veh	0.0	3.4	0.0	0.0	1.2	0.0	0.0	0.5	1.7	0.0	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	0.0	15.1	0.0	0.0	13.5	0.0	0.0	9.8	9.3	0.0	11.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	53.9	0.0	0.0	51.2	0.0	0.0	14.9	16.0	0.0	15.9	0.0
LnGrp LOS	A	D		A	D		A	B	B	A	B	
Approach Vol, veh/h	831			1145			2117			1808		
Approach Delay, s/veh	53.9			51.2			15.1			15.9		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	101.8			48.2			101.8			48.2		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	81.0			57.0			81.0			57.0		
Max Q Clear Time (g_c+l1), s	27.2			34.9			31.7			33.2		
Green Ext Time (p_c), s	24.6			6.1			22.8			9.1		
Intersection Summary												
HCM 6th Ctrl Delay	27.8											
HCM 6th LOS	C											

Timings

2045 Total AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	1072	850	762	328	2032	671	1940	134
Future Volume (vph)	1072	850	762	328	2032	671	1940	134
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	62.0		62.0		88.0	88.0	88.0	
Total Split (%)	41.3%		41.3%		58.7%	58.7%	58.7%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

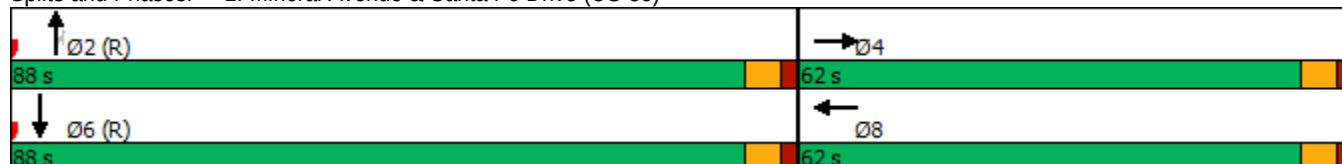
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2045 Total AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	1072	850	0	762	328	0	2032	671	0	1940	134
Future Volume (veh/h)	0	1072	850	0	762	328	0	2032	671	0	1940	134
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1094	0	0	778	0	0	2073	685	0	1980	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1215		0	1746		0	2952	916	0	2952	
Arrive On Green	0.00	0.34	0.00	0.00	0.34	0.00	0.00	0.58	0.58	0.00	0.58	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	1094	0	0	778	0	0	2073	685	0	1980	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	43.9	0.0	0.0	17.7	0.0	0.0	43.2	48.2	0.0	40.1	0.0
Cycle Q Clear(g_c), s	0.0	43.9	0.0	0.0	17.7	0.0	0.0	43.2	48.2	0.0	40.1	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1215		0	1746		0	2952	916	0	2952	
V/C Ratio(X)	0.00	0.90		0.00	0.45		0.00	0.70	0.75	0.00	0.67	
Avail Cap(c_a), veh/h	0	1327		0	1906		0	2952	916	0	2952	
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)	0.00	1.00	0.00	0.00	0.76	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	46.9	0.0	0.0	38.3	0.0	0.0	22.5	23.5	0.0	21.8	0.0
Incr Delay (d2), s/veh	0.0	8.2	0.0	0.0	0.1	0.0	0.0	1.4	5.5	0.0	1.2	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	0.0	20.8	0.0	0.0	7.5	0.0	0.0	17.5	19.1	0.0	16.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	55.2	0.0	0.0	38.5	0.0	0.0	23.9	29.1	0.0	23.0	0.0
LnGrp LOS	A	E		A	D		A	C	C	A	C	
Approach Vol, veh/h	1094			778			2758			1980		
Approach Delay, s/veh	55.2			38.5			25.2			23.0		
Approach LOS	E			D			C			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	92.7			57.3			92.7			57.3		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	82.0			56.0			82.0			56.0		
Max Q Clear Time (g_c+l1), s	50.2			45.9			42.1			19.7		
Green Ext Time (p_c), s	25.0			5.4			23.5			6.4		
Intersection Summary												
HCM 6th Ctrl Delay	31.1											
HCM 6th LOS	C											

Timings

2045 Total PM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/10/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations	↑↑	↑	↑↑↑	↑	↑↑↑	↑	↑↑↑	↑
Traffic Volume (vph)	865	742	1243	257	1556	606	1736	264
Future Volume (vph)	865	742	1243	257	1556	606	1736	264
Turn Type	NA	Free	NA	Free	NA	Perm	NA	Free
Protected Phases	4		8		2		6	
Permitted Phases		Free		Free		2		Free
Detector Phase	4		8		2	2	6	
Switch Phase								
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0		24.0	24.0	24.0	
Total Split (s)	59.0		59.0		91.0	91.0	91.0	
Total Split (%)	39.3%		39.3%		60.7%	60.7%	60.7%	
Yellow Time (s)	4.0		4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0		6.0		6.0	6.0	6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None		None		C-Max	C-Max	C-Max	

Intersection Summary

Cycle Length: 150

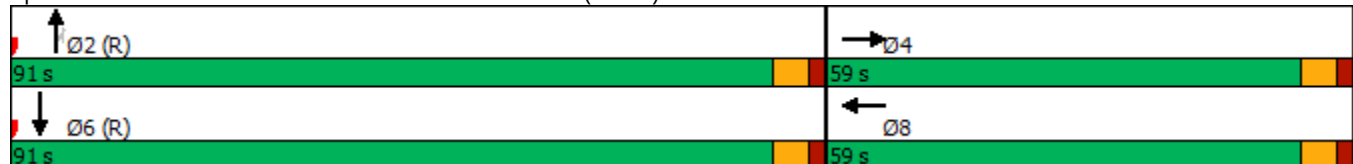
Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 1: Mineral Avenue & Santa Fe Drive (US-85)



HCM 6th Signalized Intersection Summary

1: Mineral Avenue & Santa Fe Drive (US-85)

2045 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑↑	↗		↑↑↑	↗		↑↑↑	↗
Traffic Volume (veh/h)	0	865	742	0	1243	257	0	1556	606	0	1736	264
Future Volume (veh/h)	0	865	742	0	1243	257	0	1556	606	0	1736	264
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	0	1870	1870	0	1870	1870	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	901	0	0	1295	0	0	1621	631	0	1808	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	0	2	2	0	2	2	0	2	2
Cap, veh/h	0	1083		0	1556		0	3142	975	0	3142	
Arrive On Green	0.00	0.30	0.00	0.00	0.30	0.00	0.00	0.62	0.62	0.00	0.62	0.00
Sat Flow, veh/h	0	3647	1585	0	5274	1585	0	5274	1585	0	5274	1585
Grp Volume(v), veh/h	0	901	0	0	1295	0	0	1621	631	0	1808	0
Grp Sat Flow(s),veh/h/ln	0	1777	1585	0	1702	1585	0	1702	1585	0	1702	1585
Q Serve(g_s), s	0.0	35.4	0.0	0.0	35.4	0.0	0.0	26.8	38.2	0.0	31.6	0.0
Cycle Q Clear(g_c), s	0.0	35.4	0.0	0.0	35.4	0.0	0.0	26.8	38.2	0.0	31.6	0.0
Prop In Lane	0.00		1.00	0.00		1.00	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	1083		0	1556		0	3142	975	0	3142	
V/C Ratio(X)	0.00	0.83		0.00	0.83		0.00	0.52	0.65	0.00	0.58	
Avail Cap(c_a), veh/h	0	1256		0	1804		0	3142	975	0	3142	
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)	0.00	1.00	0.00	0.00	0.59	0.00	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	48.6	0.0	0.0	48.6	0.0	0.0	16.3	18.4	0.0	17.2	0.0
Incr Delay (d2), s/veh	0.0	4.3	0.0	0.0	1.8	0.0	0.0	0.6	3.3	0.0	0.8	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	0.0	16.4	0.0	0.0	15.4	0.0	0.0	10.6	14.7	0.0	12.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	52.9	0.0	0.0	50.4	0.0	0.0	16.9	21.7	0.0	18.0	0.0
LnGrp LOS	A	D		A	D		A	B	C	A	B	
Approach Vol, veh/h	901			1295			2252			1808		
Approach Delay, s/veh	52.9			50.4			18.2			18.0		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	98.3			51.7			98.3			51.7		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	85.0			53.0			85.0			53.0		
Max Q Clear Time (g_c+l1), s	40.2			37.4			33.6			37.4		
Green Ext Time (p_c), s	24.3			5.7			23.2			8.3		
Intersection Summary												
HCM 6th Ctrl Delay	29.8											
HCM 6th LOS	C											

Timings 2: Long Avenue/Jackass Hill Road & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	358	850	14	7	533	209	63	68	174	43	231
Future Volume (vph)	358	850	14	7	533	209	63	68	174	43	231
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	41.0	70.0	70.0	11.0	40.0	40.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	34.2%	58.3%	58.3%	9.2%	33.3%	33.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

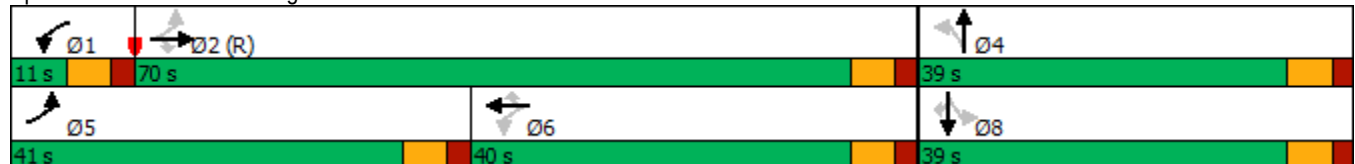
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	850	14	7	533	209	63	68	14	174	43	231
Future Volume (veh/h)	358	850	14	7	533	209	63	68	14	174	43	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	955	16	8	599	235	71	76	16	196	48	260
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	556	2221	991	359	1799	803	268	322	68	286	403	341
Arrive On Green	0.13	0.62	0.62	0.01	0.51	0.51	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1071	1498	315	1304	1870	1585
Grp Volume(v), veh/h	402	955	16	8	599	235	71	0	92	196	48	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1071	0	1814	1304	1870	1585
Q Serve(g_s), s	12.2	16.5	0.5	0.3	12.0	10.3	6.9	0.0	5.0	17.5	2.5	18.5
Cycle Q Clear(g_c), s	12.2	16.5	0.5	0.3	12.0	10.3	9.3	0.0	5.0	22.6	2.5	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	556	2221	991	359	1799	803	268	0	390	286	403	341
V/C Ratio(X)	0.72	0.43	0.02	0.02	0.33	0.29	0.26	0.00	0.24	0.69	0.12	0.76
Avail Cap(c_a), veh/h	847	2221	991	416	1799	803	332	0	499	364	514	436
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)	0.15	0.15	0.15	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	11.5	8.5	14.1	17.6	17.2	41.7	0.0	38.9	48.3	37.9	44.2
Incr Delay (d2), s/veh	0.3	0.1	0.0	0.0	0.1	0.2	0.5	0.0	0.3	3.7	0.1	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.3	0.2	0.1	4.9	3.8	1.9	0.0	2.3	6.0	1.2	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	11.6	8.5	14.2	17.7	17.4	42.2	0.0	39.2	51.9	38.1	50.1
LnGrp LOS	B	B	A	B	B	B	D	A	D	D	D	D
Approach Vol, veh/h		1373			842			163			504	
Approach Delay, s/veh		11.6			17.6			40.5			49.7	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	81.0		31.8	21.4	66.8		31.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	64.0		33.0	35.0	34.0		33.0				
Max Q Clear Time (g_c+l1), s	2.3	18.5		11.3	14.2	14.0		24.6				
Green Ext Time (p_c), s	0.0	8.8		0.7	1.2	4.9		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			21.7									
HCM 6th LOS			C									

Timings
2: Long Avenue/Jackass Hill Road & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	244	612	33	16	905	199	40	44	200	71	262
Future Volume (vph)	244	612	33	16	905	199	40	44	200	71	262
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	71.0	71.0	11.0	54.0	54.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	23.3%	59.2%	59.2%	9.2%	45.0%	45.0%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

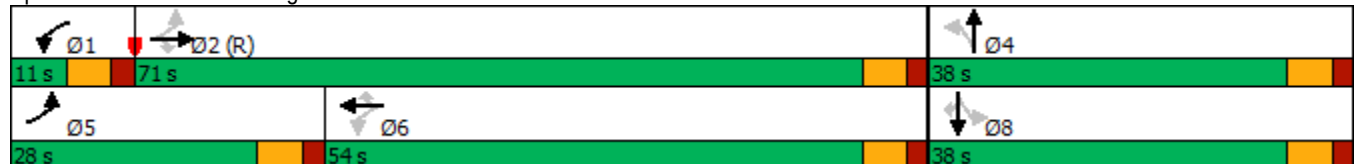
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	612	33	16	905	199	40	44	23	200	71	262
Future Volume (veh/h)	244	612	33	16	905	199	40	44	23	200	71	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	638	34	17	943	207	42	46	24	208	74	273
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	2201	982	503	1984	885	246	246	128	299	398	337
Arrive On Green	0.08	0.62	0.62	0.02	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1034	1158	604	1331	1870	1585
Grp Volume(v), veh/h	254	638	34	17	943	207	42	0	70	208	74	273
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1034	0	1762	1331	1870	1585
Q Serve(g_s), s	6.9	10.0	1.0	0.5	19.1	8.0	4.2	0.0	3.9	18.2	3.9	19.7
Cycle Q Clear(g_c), s	6.9	10.0	1.0	0.5	19.1	8.0	8.1	0.0	3.9	22.1	3.9	19.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	396	2201	982	503	1984	885	246	0	374	299	398	337
V/C Ratio(X)	0.64	0.29	0.03	0.03	0.48	0.23	0.17	0.00	0.19	0.69	0.19	0.81
Avail Cap(c_a), veh/h	582	2201	982	545	1984	885	302	0	470	371	499	423
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)	0.44	0.44	0.44	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	10.6	8.9	10.9	15.9	13.5	42.0	0.0	38.7	47.8	38.7	44.9
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.0	0.2	0.1	0.3	0.0	0.2	4.1	0.2	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.9	0.3	0.2	7.7	2.9	1.1	0.0	1.7	6.4	1.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	10.7	8.9	10.9	16.1	13.6	42.4	0.0	39.0	51.9	39.0	54.1
LnGrp LOS	B	B	A	B	B	B	D	A	D	D	D	D
Approach Vol, veh/h	926			1167			112			555		
Approach Delay, s/veh	11.3			15.6			40.3			51.3		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	80.3		31.5	15.5	73.0		31.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	65.0		32.0	22.0	48.0		32.0				
Max Q Clear Time (g_c+l1), s	2.5	12.0		10.1	8.9	21.1		24.1				
Green Ext Time (p_c), s	0.0	5.3		0.5	0.6	8.5		1.4				
Intersection Summary												
HCM 6th Ctrl Delay	22.3											
HCM 6th LOS	C											

Timings 2: Long Avenue/Jackass Hill Road & Mineral Avenue

2028 Background AM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		 			 			 			
Traffic Volume (vph)	358	1051	14	7	711	209	63	68	174	43	231
Future Volume (vph)	358	1051	14	7	711	209	63	68	174	43	231
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	38.0	73.0	73.0	11.0	46.0	46.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	31.7%	60.8%	60.8%	9.2%	38.3%	38.3%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	1051	14	7	711	209	63	68	14	174	43	231
Future Volume (veh/h)	358	1051	14	7	711	209	63	68	14	174	43	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	1181	16	8	799	235	71	76	16	196	48	260
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	2228	994	284	1812	808	266	319	67	283	399	338
Arrive On Green	0.13	0.63	0.63	0.01	0.51	0.51	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1071	1498	315	1304	1870	1585
Grp Volume(v), veh/h	402	1181	16	8	799	235	71	0	92	196	48	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1071	0	1814	1304	1870	1585
Q Serve(g_s), s	12.1	22.3	0.5	0.3	17.1	10.2	6.9	0.0	5.0	17.6	2.5	18.5
Cycle Q Clear(g_c), s	12.1	22.3	0.5	0.3	17.1	10.2	9.4	0.0	5.0	22.6	2.5	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	487	2228	994	284	1812	808	266	0	387	283	399	338
V/C Ratio(X)	0.83	0.53	0.02	0.03	0.44	0.29	0.27	0.00	0.24	0.69	0.12	0.77
Avail Cap(c_a), veh/h	736	2228	994	341	1812	808	306	0	453	331	468	396
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)	0.64	0.64	0.64	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	12.5	8.4	14.2	18.6	16.9	41.9	0.0	39.1	48.5	38.1	44.4
Incr Delay (d2), s/veh	3.1	0.6	0.0	0.0	0.2	0.2	0.5	0.0	0.3	5.0	0.1	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	8.2	0.2	0.1	6.7	3.6	1.9	0.0	2.3	6.1	1.2	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	13.1	8.4	14.2	18.8	17.1	42.4	0.0	39.4	53.5	38.3	52.1
LnGrp LOS	B	B	A	B	B	B	D	A	D	D	D	D
Approach Vol, veh/h	1599			1042			163			504		
Approach Delay, s/veh	14.3			18.4			40.7			51.3		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	81.2		31.6	21.2	67.2		31.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	67.0		30.0	32.0	40.0		30.0				
Max Q Clear Time (g_c+l1), s	2.3	24.3		11.4	14.1	19.1		24.6				
Green Ext Time (p_c), s	0.0	10.7		0.7	1.1	6.1		0.9				
Intersection Summary												
HCM 6th Ctrl Delay	22.5											
HCM 6th LOS	C											

Timings 2: Long Avenue/Jackass Hill Road & Mineral Avenue

2028 Background PM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	244	777	33	16	1118	199	40	44	200	71	262
Future Volume (vph)	244	777	33	16	1118	199	40	44	200	71	262
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	73.0	73.0	11.0	56.0	56.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	23.3%	60.8%	60.8%	9.2%	46.7%	46.7%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

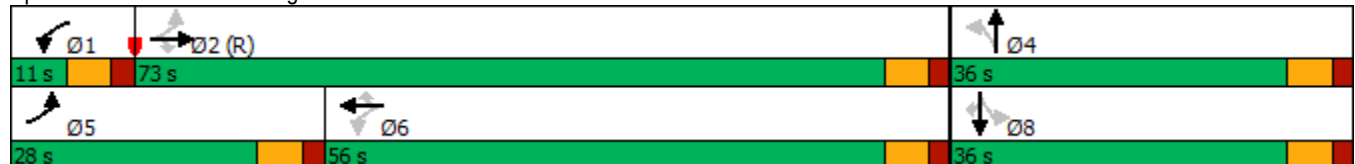
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	777	33	16	1118	199	40	44	23	200	71	262
Future Volume (veh/h)	244	777	33	16	1118	199	40	44	23	200	71	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	809	34	17	1165	207	42	46	24	208	74	273
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	337	2207	984	425	1991	888	244	244	127	297	395	334
Arrive On Green	0.08	0.62	0.62	0.02	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1034	1158	604	1331	1870	1585
Grp Volume(v), veh/h	254	809	34	17	1165	207	42	0	70	208	74	273
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1034	0	1762	1331	1870	1585
Q Serve(g_s), s	6.9	13.4	1.0	0.5	25.7	7.9	4.2	0.0	3.9	18.3	3.9	19.7
Cycle Q Clear(g_c), s	6.9	13.4	1.0	0.5	25.7	7.9	8.1	0.0	3.9	22.2	3.9	19.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	337	2207	984	425	1991	888	244	0	372	297	395	334
V/C Ratio(X)	0.75	0.37	0.03	0.04	0.59	0.23	0.17	0.00	0.19	0.70	0.19	0.82
Avail Cap(c_a), veh/h	523	2207	984	467	1991	888	285	0	440	349	468	396
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)	0.82	0.82	0.82	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	11.2	8.8	10.9	17.3	13.4	42.2	0.0	38.9	48.0	38.9	45.1
Incr Delay (d2), s/veh	2.8	0.4	0.1	0.0	0.4	0.1	0.3	0.0	0.2	5.0	0.2	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.2	0.4	0.2	10.3	2.8	1.1	0.0	1.7	6.5	1.8	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	11.5	8.9	11.0	17.7	13.5	42.5	0.0	39.1	53.0	39.1	56.0
LnGrp LOS	B	B	A	B	B	B	D	A	D	D	D	E
Approach Vol, veh/h	1097				1389				112			
Approach Delay, s/veh	13.4				17.0				40.4			
Approach LOS	B				B				D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	80.5		31.3	15.5	73.2		31.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	67.0		30.0	22.0	50.0		30.0				
Max Q Clear Time (g_c+I1), s	2.5	15.4		10.1	8.9	27.7		24.2				
Green Ext Time (p_c), s	0.0	7.1		0.5	0.6	10.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay	22.8											
HCM 6th LOS	C											

Timings

2028 Total AM

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	358	1204	14	10	861	217	63	68	183	43	231
Future Volume (vph)	358	1204	14	10	861	217	63	68	183	43	231
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	36.0	75.0	75.0	11.0	50.0	50.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	30.0%	62.5%	62.5%	9.2%	41.7%	41.7%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

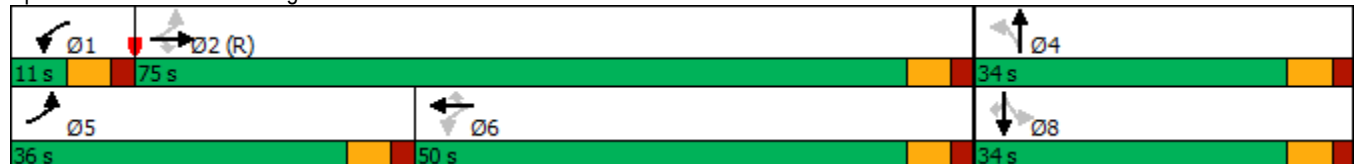
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2028 Total AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (veh/h)	358	1204	14	10	861	217	63	68	19	183	43	231
Future Volume (veh/h)	358	1204	14	10	861	217	63	68	19	183	43	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	1353	16	11	967	244	71	76	21	206	48	260
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	2193	978	234	1771	790	274	311	86	288	412	349
Arrive On Green	0.13	0.62	0.62	0.01	0.50	0.50	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1071	1410	390	1298	1870	1585
Grp Volume(v), veh/h	402	1353	16	11	967	244	71	0	97	206	48	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1071	0	1800	1298	1870	1585
Q Serve(g_s), s	12.7	28.3	0.5	0.4	22.5	11.0	6.8	0.0	5.3	18.7	2.5	18.4
Cycle Q Clear(g_c), s	12.7	28.3	0.5	0.4	22.5	11.0	9.3	0.0	5.3	24.0	2.5	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	437	2193	978	234	1771	790	274	0	396	288	412	349
V/C Ratio(X)	0.92	0.62	0.02	0.05	0.55	0.31	0.26	0.00	0.24	0.71	0.12	0.74
Avail Cap(c_a), veh/h	649	2193	978	286	1771	790	288	0	420	305	436	370
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)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	14.2	8.9	15.3	20.7	17.8	41.2	0.0	38.6	48.4	37.4	43.6
Incr Delay (d2), s/veh	8.9	0.8	0.0	0.1	0.4	0.2	0.5	0.0	0.3	7.3	0.1	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	10.5	0.2	0.1	9.0	3.9	1.8	0.0	2.4	6.6	1.2	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	15.0	8.9	15.3	21.1	18.1	41.7	0.0	38.9	55.7	37.6	51.2
LnGrp LOS	C	B	A	B	C	B	D	A	D	E	D	D
Approach Vol, veh/h		1771			1222			168			514	
Approach Delay, s/veh		18.0			20.4			40.1			51.7	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	80.0		32.4	21.8	65.8		32.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	69.0		28.0	30.0	44.0		28.0				
Max Q Clear Time (g_c+l1), s	2.4	30.3		11.3	14.7	24.5		26.0				
Green Ext Time (p_c), s	0.0	12.9		0.7	1.1	7.3		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									

Timings

2028 Total PM

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	244	975	33	21	1300	209	40	44	211	71	262
Future Volume (vph)	244	975	33	21	1300	209	40	44	211	71	262
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	25.0	75.0	75.0	11.0	61.0	61.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	20.8%	62.5%	62.5%	9.2%	50.8%	50.8%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

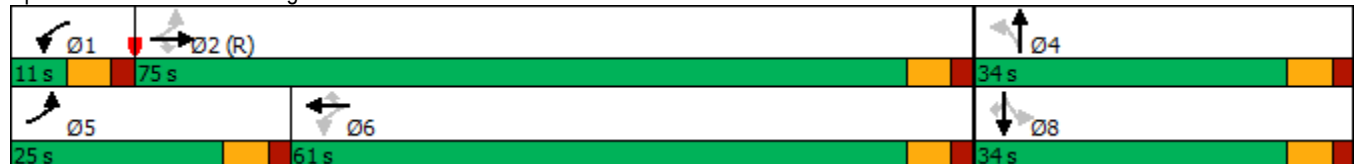
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2028 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	244	975	33	21	1300	209	40	44	28	211	71	262
Future Volume (veh/h)	244	975	33	21	1300	209	40	44	28	211	71	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	1016	34	22	1354	218	42	46	29	220	74	273
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	2166	966	342	1960	874	253	235	148	304	409	347
Arrive On Green	0.08	0.61	0.61	0.02	0.55	0.55	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1034	1073	676	1325	1870	1585
Grp Volume(v), veh/h	254	1016	34	22	1354	218	42	0	75	220	74	273
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1034	0	1749	1325	1870	1585
Q Serve(g_s), s	7.0	18.8	1.0	0.6	33.1	8.6	4.1	0.0	4.2	19.5	3.9	19.5
Cycle Q Clear(g_c), s	7.0	18.8	1.0	0.6	33.1	8.6	8.0	0.0	4.2	23.7	3.9	19.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	292	2166	966	342	1960	874	253	0	383	304	409	347
V/C Ratio(X)	0.87	0.47	0.04	0.06	0.69	0.25	0.17	0.00	0.20	0.72	0.18	0.79
Avail Cap(c_a), veh/h	432	2166	966	378	1960	874	268	0	408	323	436	370
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)	0.82	0.82	0.82	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	12.8	9.4	11.7	19.5	14.0	41.4	0.0	38.2	47.9	38.1	44.2
Incr Delay (d2), s/veh	10.3	0.6	0.1	0.1	1.0	0.1	0.3	0.0	0.2	7.4	0.2	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	7.4	0.4	0.3	13.5	3.1	1.1	0.0	1.8	7.0	1.8	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.5	13.4	9.4	11.8	20.5	14.1	41.7	0.0	38.5	55.3	38.3	54.4
LnGrp LOS	C	B	A	B	C	B	D	A	D	E	D	D
Approach Vol, veh/h		1304			1594			117			567	
Approach Delay, s/veh		17.0			19.5			39.6			52.7	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	79.1		32.3	15.5	72.2		32.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	69.0		28.0	19.0	55.0		28.0				
Max Q Clear Time (g_c+l1), s	2.6	20.8		10.0	9.0	35.1		25.7				
Green Ext Time (p_c), s	0.0	9.7		0.5	0.5	11.2		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									

Timings 2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Background AM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	358	1124	14	7	760	209	63	68	174	43	231
Future Volume (vph)	358	1124	14	7	760	209	63	68	174	43	231
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	38.0	74.0	74.0	11.0	47.0	47.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	31.7%	61.7%	61.7%	9.2%	39.2%	39.2%	29.2%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

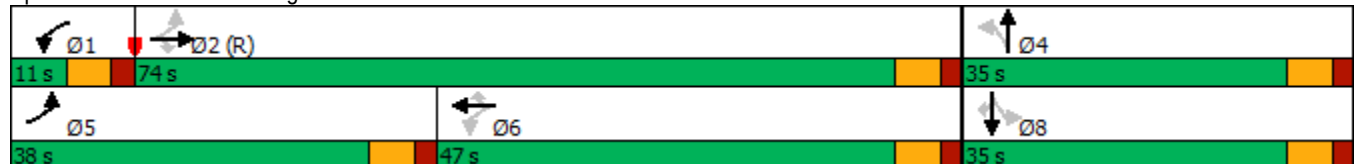
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	1124	14	7	760	209	63	68	14	174	43	231
Future Volume (veh/h)	358	1124	14	7	760	209	63	68	14	174	43	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	1263	16	8	854	235	71	76	16	196	48	260
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	2232	995	260	1814	809	265	318	67	282	397	336
Arrive On Green	0.13	0.63	0.63	0.01	0.51	0.51	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1071	1498	315	1304	1870	1585
Grp Volume(v), veh/h	402	1263	16	8	854	235	71	0	92	196	48	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1071	0	1814	1304	1870	1585
Q Serve(g_s), s	12.1	24.6	0.5	0.3	18.6	10.2	6.9	0.0	5.1	17.6	2.5	18.5
Cycle Q Clear(g_c), s	12.1	24.6	0.5	0.3	18.6	10.2	9.4	0.0	5.1	22.7	2.5	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	471	2232	995	260	1814	809	265	0	385	282	397	336
V/C Ratio(X)	0.85	0.57	0.02	0.03	0.47	0.29	0.27	0.00	0.24	0.70	0.12	0.77
Avail Cap(c_a), veh/h	719	2232	995	317	1814	809	297	0	438	320	452	383
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)	0.64	0.64	0.64	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	12.9	8.4	14.3	18.9	16.9	42.0	0.0	39.2	48.6	38.2	44.5
Incr Delay (d2), s/veh	4.1	0.7	0.0	0.0	0.2	0.2	0.5	0.0	0.3	5.5	0.1	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	9.5	0.2	0.1	7.6	3.8	1.9	0.0	2.3	6.1	1.2	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	13.6	8.4	14.4	19.1	17.1	42.5	0.0	39.5	54.1	38.3	52.9
LnGrp LOS	C	B	A	B	B	B	D	A	D	D	D	D
Approach Vol, veh/h	1681			1097			163			504		
Approach Delay, s/veh	15.1			18.6			40.8			52.0		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	81.4		31.5	21.3	67.3		31.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		29.0	32.0	41.0		29.0				
Max Q Clear Time (g_c+I1), s	2.3	26.6		11.4	14.1	20.6		24.7				
Green Ext Time (p_c), s	0.0	13.0		0.7	1.2	7.0		0.8				
Intersection Summary												
HCM 6th Ctrl Delay				22.8								
HCM 6th LOS				C								

Timings 2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Background PM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations		 			 			 			
Traffic Volume (vph)	244	833	33	16	1200	199	40	44	200	71	262
Future Volume (vph)	244	833	33	16	1200	199	40	44	200	71	262
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	29.0	70.0	70.0	11.0	52.0	52.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	24.2%	58.3%	58.3%	9.2%	43.3%	43.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

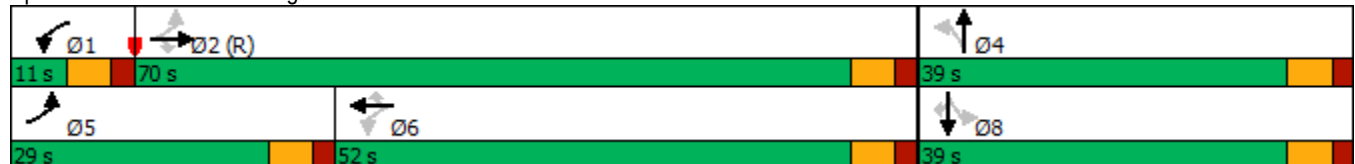
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	833	33	16	1200	199	40	44	23	200	71	262
Future Volume (veh/h)	244	833	33	16	1200	199	40	44	23	200	71	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	868	34	17	1250	207	42	46	24	208	74	273
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	2199	981	398	1981	883	247	247	129	300	399	338
Arrive On Green	0.08	0.62	0.62	0.02	0.56	0.56	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1034	1158	604	1331	1870	1585
Grp Volume(v), veh/h	254	868	34	17	1250	207	42	0	70	208	74	273
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1034	0	1762	1331	1870	1585
Q Serve(g_s), s	6.9	14.8	1.0	0.5	28.8	8.0	4.2	0.0	3.9	18.2	3.9	19.6
Cycle Q Clear(g_c), s	6.9	14.8	1.0	0.5	28.8	8.0	8.1	0.0	3.9	22.1	3.9	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	317	2199	981	398	1981	883	247	0	376	300	399	338
V/C Ratio(X)	0.80	0.39	0.03	0.04	0.63	0.23	0.17	0.00	0.19	0.69	0.19	0.81
Avail Cap(c_a), veh/h	517	2199	981	440	1981	883	311	0	484	383	514	436
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)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	11.5	8.9	11.2	18.1	13.5	42.0	0.0	38.7	47.7	38.7	44.9
Incr Delay (d2), s/veh	3.8	0.4	0.1	0.0	0.7	0.1	0.3	0.0	0.2	3.7	0.2	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.8	0.4	0.2	11.6	2.9	1.1	0.0	1.7	6.3	1.8	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	12.0	9.0	11.2	18.8	13.7	42.3	0.0	38.9	51.5	38.9	53.3
LnGrp LOS	C	B	A	B	B	B	D	A	D	D	D	D
Approach Vol, veh/h	1156			1474			112			555		
Approach Delay, s/veh	14.4			18.0			40.2			50.7		
Approach LOS	B			B			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	80.3		31.6	15.5	72.9		31.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	64.0		33.0	23.0	46.0		33.0				
Max Q Clear Time (g_c+l1), s	2.5	16.8		10.1	8.9	30.8		24.1				
Green Ext Time (p_c), s	0.0	7.8		0.5	0.6	8.7		1.5				
Intersection Summary												
HCM 6th Ctrl Delay	23.0											
HCM 6th LOS	C											

Timings

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Total AM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	358	1277	14	10	910	217	63	68	183	43	231
Future Volume (vph)	358	1277	14	10	910	217	63	68	183	43	231
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	37.0	75.0	75.0	11.0	49.0	49.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	30.8%	62.5%	62.5%	9.2%	40.8%	40.8%	28.3%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

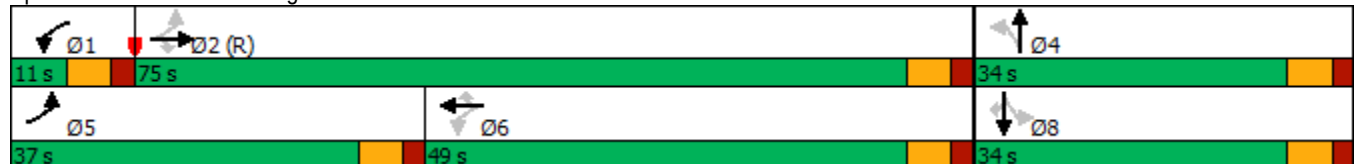
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Total AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	358	1277	14	10	910	217	63	68	19	183	43	231
Future Volume (veh/h)	358	1277	14	10	910	217	63	68	19	183	43	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	402	1435	16	11	1022	244	71	76	21	206	48	260
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	2193	978	214	1728	771	274	311	86	288	412	349
Arrive On Green	0.14	0.62	0.62	0.01	0.49	0.49	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1071	1410	390	1298	1870	1585
Grp Volume(v), veh/h	402	1435	16	11	1022	244	71	0	97	206	48	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1071	0	1800	1298	1870	1585
Q Serve(g_s), s	14.1	31.1	0.5	0.4	24.9	11.2	6.8	0.0	5.3	18.7	2.5	18.4
Cycle Q Clear(g_c), s	14.1	31.1	0.5	0.4	24.9	11.2	9.3	0.0	5.3	24.0	2.5	18.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	438	2193	978	214	1728	771	274	0	396	288	412	349
V/C Ratio(X)	0.92	0.65	0.02	0.05	0.59	0.32	0.26	0.00	0.24	0.71	0.12	0.74
Avail Cap(c_a), veh/h	642	2193	978	265	1728	771	288	0	420	305	436	370
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)	0.49	0.49	0.49	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.6	14.8	8.9	16.2	22.2	18.7	41.2	0.0	38.6	48.4	37.4	43.6
Incr Delay (d2), s/veh	7.7	0.8	0.0	0.1	0.5	0.2	0.5	0.0	0.3	7.3	0.1	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	12.1	0.2	0.2	10.3	4.2	1.8	0.0	2.4	6.6	1.2	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	15.5	8.9	16.3	22.8	19.0	41.7	0.0	38.9	55.7	37.6	51.2
LnGrp LOS	C	B	A	B	C	B	D	A	D	E	D	D
Approach Vol, veh/h	1853			1277			168			514		
Approach Delay, s/veh	18.7			22.0			40.1			51.7		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	80.0		32.4	23.2	64.3		32.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	69.0		28.0	31.0	43.0		28.0				
Max Q Clear Time (g_c+I1), s	2.4	33.1		11.3	16.1	26.9		26.0				
Green Ext Time (p_c), s	0.0	15.1		0.7	1.1	7.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				25.2								
HCM 6th LOS				C								

Timings

2045 Total PM

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	244	1031	33	21	1382	209	40	44	211	71	262
Future Volume (vph)	244	1031	33	21	1382	209	40	44	211	71	262
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	1	6	6	4	4	8	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	77.0	77.0	11.0	64.0	64.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	20.0%	64.2%	64.2%	9.2%	53.3%	53.3%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	None	None	None	None	None	None	None

Intersection Summary

Cycle Length: 120

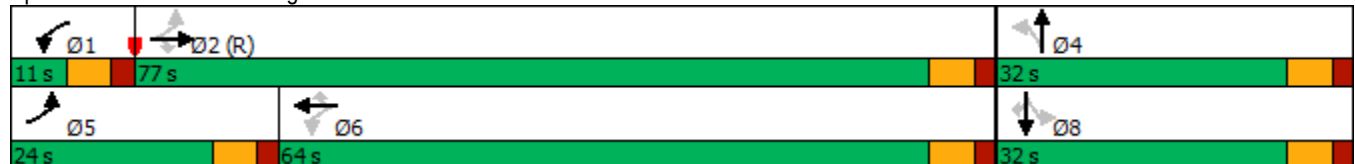
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 2: Long Avenue/Jackass Hill Road & Mineral Avenue



HCM 6th Signalized Intersection Summary

2: Long Avenue/Jackass Hill Road & Mineral Avenue

2045 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	1031	33	21	1382	209	40	44	28	211	71	262
Future Volume (veh/h)	244	1031	33	21	1382	209	40	44	28	211	71	262
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	254	1074	34	22	1440	218	42	46	29	220	74	273
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	2178	971	325	1950	870	249	231	146	299	403	342
Arrive On Green	0.09	0.61	0.61	0.02	0.55	0.55	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1034	1073	676	1325	1870	1585
Grp Volume(v), veh/h	254	1074	34	22	1440	218	42	0	75	220	74	273
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1034	0	1749	1325	1870	1585
Q Serve(g_s), s	7.8	20.1	1.0	0.6	36.9	8.6	4.2	0.0	4.2	19.6	3.9	19.6
Cycle Q Clear(g_c), s	7.8	20.1	1.0	0.6	36.9	8.6	8.0	0.0	4.2	23.8	3.9	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	285	2178	971	325	1950	870	249	0	377	299	403	342
V/C Ratio(X)	0.89	0.49	0.04	0.07	0.74	0.25	0.17	0.00	0.20	0.74	0.18	0.80
Avail Cap(c_a), veh/h	400	2178	971	361	1950	870	251	0	379	300	405	343
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)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	12.9	9.2	11.9	20.6	14.2	41.7	0.0	38.6	48.3	38.4	44.6
Incr Delay (d2), s/veh	12.9	0.6	0.0	0.1	1.5	0.1	0.3	0.0	0.3	9.1	0.2	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.9	0.4	0.3	15.1	3.1	1.1	0.0	1.8	7.2	1.8	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	13.5	9.2	12.0	22.1	14.3	42.0	0.0	38.8	57.4	38.7	57.1
LnGrp LOS	D	B	A	B	C	B	D	A	D	E	D	E
Approach Vol, veh/h	1362			1680			117			567		
Approach Delay, s/veh	18.1			20.9			40.0			54.8		
Approach LOS	B			C			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	79.5		31.9	16.3	71.8		31.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	71.0		26.0	18.0	58.0		26.0				
Max Q Clear Time (g_c+l1), s	2.6	22.1		10.0	9.8	38.9		25.8				
Green Ext Time (p_c), s	0.0	10.6		0.4	0.5	11.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	25.6											
HCM 6th LOS	C											

Timings

2023 Adjusted Existing AM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	49	721	204	50	397	23	108	16	24	76
Future Volume (vph)	49	721	204	50	397	23	108	16	24	76
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	53.0	53.0	13.0	55.0	55.0	28.0	28.0	26.0	26.0
Total Split (%)	9.2%	44.2%	44.2%	10.8%	45.8%	45.8%	23.3%	23.3%	21.7%	21.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

					
Ø1	Ø2 (R)		Ø4		Ø8
13 s	53 s		28 s		26 s
					
Ø5	Ø6 (R)				
11 s	55 s				

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	721	204	50	397	23	108	16	41	44	24	76
Future Volume (veh/h)	49	721	204	50	397	23	108	16	41	44	24	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	784	222	54	432	25	117	17	45	48	26	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	640	2165	965	401	2165	966	151	38	102	84	45	113
Arrive On Green	0.03	0.61	0.61	0.03	0.61	0.61	0.08	0.08	0.08	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	454	1201	1175	637	1585
Grp Volume(v), veh/h	53	784	222	54	432	25	117	0	62	74	0	83
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1654	1812	0	1585
Q Serve(g_s), s	1.3	13.3	7.6	1.3	6.5	0.8	7.7	0.0	4.3	4.7	0.0	6.2
Cycle Q Clear(g_c), s	1.3	13.3	7.6	1.3	6.5	0.8	7.7	0.0	4.3	4.7	0.0	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	0.65		1.00
Lane Grp Cap(c), veh/h	640	2165	965	401	2165	966	151	0	140	129	0	113
V/C Ratio(X)	0.08	0.36	0.23	0.13	0.20	0.03	0.77	0.00	0.44	0.57	0.00	0.73
Avail Cap(c_a), veh/h	653	2165	965	443	2165	966	327	0	303	302	0	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.0	11.8	10.7	8.7	10.4	9.3	53.8	0.0	52.2	54.0	0.0	54.6
Incr Delay (d2), s/veh	0.1	0.5	0.6	0.2	0.2	0.0	8.2	0.0	2.2	4.0	0.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.2	2.8	0.5	2.6	0.3	3.8	0.0	1.9	2.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.1	12.2	11.2	8.8	10.6	9.4	62.0	0.0	54.4	57.9	0.0	63.5
LnGrp LOS	A	B	B	A	B	A	E	A	D	E	A	E
Approach Vol, veh/h	1059				511				179			
Approach Delay, s/veh	11.8				10.4				59.3			
Approach LOS	B				B				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	79.1		16.2	10.1	79.1		14.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	47.0		22.0	5.0	49.0		20.0				
Max Q Clear Time (g_c+I1), s	3.3	15.3		9.7	3.3	8.5		8.2				
Green Ext Time (p_c), s	0.0	7.3		0.5	0.0	3.3		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	19.9											
HCM 6th LOS	B											

Timings 3: Southpark Lane/Windermere Street & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	48	594	89	63	885	36	233	54	34	47
Future Volume (vph)	48	594	89	63	885	36	233	54	34	47
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	12.0	51.0	51.0	11.0	50.0	50.0	34.0	34.0	24.0	24.0
Total Split (%)	10.0%	42.5%	42.5%	9.2%	41.7%	41.7%	28.3%	28.3%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

					
Ø1	Ø2 (R)		Ø4		Ø8
11 s	51 s		34 s		24 s
					
Ø5	Ø6 (R)				
12 s	50 s				

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

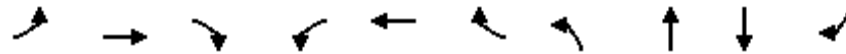
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	594	89	63	885	36	233	54	72	37	34	47
Future Volume (veh/h)	48	594	89	63	885	36	233	54	72	37	34	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	660	99	70	983	40	259	60	80	41	38	52
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	320	1896	846	429	1907	851	298	122	162	58	54	97
Arrive On Green	0.03	0.53	0.53	0.04	0.54	0.54	0.17	0.17	0.17	0.06	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	727	969	946	877	1585
Grp Volume(v), veh/h	53	660	99	70	983	40	259	0	140	79	0	52
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1696	1823	0	1585
Q Serve(g_s), s	1.6	12.8	3.7	2.1	21.3	1.4	17.0	0.0	9.0	5.1	0.0	3.8
Cycle Q Clear(g_c), s	1.6	12.8	3.7	2.1	21.3	1.4	17.0	0.0	9.0	5.1	0.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.57	0.52		1.00
Lane Grp Cap(c), veh/h	320	1896	846	429	1907	851	298	0	284	112	0	97
V/C Ratio(X)	0.17	0.35	0.12	0.16	0.52	0.05	0.87	0.00	0.49	0.71	0.00	0.53
Avail Cap(c_a), veh/h	347	1896	846	436	1907	851	416	0	396	273	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	16.0	13.9	12.2	17.8	13.2	48.7	0.0	45.3	55.3	0.0	54.7
Incr Delay (d2), s/veh	0.2	0.5	0.3	0.2	1.0	0.1	13.3	0.0	1.3	7.9	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.3	1.4	0.8	8.8	0.5	8.6	0.0	3.9	2.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.8	16.5	14.2	12.4	18.8	13.3	61.9	0.0	46.6	63.2	0.0	59.2
LnGrp LOS	B	B	B	B	B	B	E	A	D	E	A	E
Approach Vol, veh/h	812			1093			399			131		
Approach Delay, s/veh	16.1			18.2			56.6			61.6		
Approach LOS	B			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	70.0		26.1	10.1	70.4		13.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	45.0		28.0	6.0	44.0		18.0				
Max Q Clear Time (g_c+l1), s	4.1	14.8		19.0	3.6	23.3		7.1				
Green Ext Time (p_c), s	0.0	5.4		1.1	0.0	7.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	26.1											
HCM 6th LOS	C											

Timings

2028 Background AM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	55	1008	229	58	621	28	121	18	27	85
Future Volume (vph)	55	1008	229	58	621	28	121	18	27	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	60.0	60.0	12.0	61.0	61.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	50.0%	50.0%	10.0%	50.8%	50.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

	Ø1		Ø2 (R)		Ø4		Ø8
12 s		60 s		24 s		24 s	
	Ø5		Ø6 (R)				
11 s		61 s					

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Background AM

11/10/2023

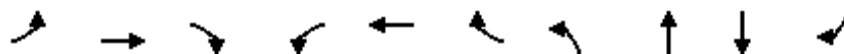
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1008	229	58	621	28	121	18	49	52	27	85
Future Volume (veh/h)	55	1008	229	58	621	28	121	18	49	52	27	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1096	249	63	675	30	132	20	53	57	29	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	495	2110	941	293	2112	942	165	42	111	92	47	122
Arrive On Green	0.04	0.59	0.59	0.04	0.59	0.59	0.09	0.09	0.09	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	453	1201	1200	610	1585
Grp Volume(v), veh/h	60	1096	249	63	675	30	132	0	73	86	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1654	1810	0	1585
Q Serve(g_s), s	1.5	21.7	9.1	1.6	11.4	0.9	8.7	0.0	5.0	5.5	0.0	6.8
Cycle Q Clear(g_c), s	1.5	21.7	9.1	1.6	11.4	0.9	8.7	0.0	5.0	5.5	0.0	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	0.66		1.00
Lane Grp Cap(c), veh/h	495	2110	941	293	2112	942	165	0	153	140	0	122
V/C Ratio(X)	0.12	0.52	0.26	0.22	0.32	0.03	0.80	0.00	0.48	0.62	0.00	0.75
Avail Cap(c_a), veh/h	505	2110	941	317	2112	942	267	0	248	272	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	14.3	11.8	10.8	12.2	10.1	53.3	0.0	51.7	53.7	0.0	54.3
Incr Delay (d2), s/veh	0.1	0.9	0.7	0.4	0.4	0.1	8.6	0.0	2.3	4.4	0.0	9.0
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	0.6	8.4	3.2	0.6	4.4	0.3	4.3	0.0	2.2	2.7	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	15.2	12.4	11.2	12.6	10.1	61.9	0.0	54.0	58.0	0.0	63.2
LnGrp LOS	A	B	B	B	B	B	E	A	D	E	A	E
Approach Vol, veh/h	1405			768			205			178		
Approach Delay, s/veh	14.5			12.4			59.1			60.7		
Approach LOS	B			B			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	77.2		17.1	10.3	77.3		15.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	54.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+l1), s	3.6	23.7		10.7	3.5	13.4		8.8				
Green Ext Time (p_c), s	0.0	10.0		0.4	0.0	5.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	20.7											
HCM 6th LOS	C											

Timings

2028 Background PM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	796	94	74	1152	45	247	57	36	50
Future Volume (vph)	51	796	94	74	1152	45	247	57	36	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	55.0	55.0	12.0	56.0	56.0	29.0	29.0	24.0	24.0
Total Split (%)	9.2%	45.8%	45.8%	10.0%	46.7%	46.7%	24.2%	24.2%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

	Ø1		Ø2 (R)		Ø4		Ø8
12 s		55 s		29 s		24 s	
	Ø5		Ø6 (R)				
11 s		56 s					

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	796	94	74	1152	45	247	57	82	45	36	50
Future Volume (veh/h)	51	796	94	74	1152	45	247	57	82	45	36	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	884	104	82	1280	50	274	63	91	50	40	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	1853	826	336	1865	832	306	119	172	69	55	108
Arrive On Green	0.04	0.52	0.52	0.04	0.52	0.52	0.17	0.17	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	692	999	1011	809	1585
Grp Volume(v), veh/h	57	884	104	82	1280	50	274	0	154	90	0	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1691	1820	0	1585
Q Serve(g_s), s	1.8	19.0	4.0	2.5	32.1	1.9	18.1	0.0	10.0	5.8	0.0	4.1
Cycle Q Clear(g_c), s	1.8	19.0	4.0	2.5	32.1	1.9	18.1	0.0	10.0	5.8	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	0.56		1.00
Lane Grp Cap(c), veh/h	229	1853	826	336	1865	832	306	0	290	124	0	108
V/C Ratio(X)	0.25	0.48	0.13	0.24	0.69	0.06	0.90	0.00	0.53	0.73	0.00	0.52
Avail Cap(c_a), veh/h	240	1853	826	356	1865	832	341	0	324	273	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	18.3	14.7	13.9	21.2	14.0	48.6	0.0	45.3	54.8	0.0	54.0
Incr Delay (d2), s/veh	0.6	0.9	0.3	0.4	2.1	0.1	23.3	0.0	1.5	7.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.9	1.5	1.0	13.5	0.7	10.0	0.0	4.3	2.9	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	19.2	15.0	14.3	23.2	14.1	71.9	0.0	46.8	62.8	0.0	57.9
LnGrp LOS	B	B	B	B	C	B	E	A	D	E	A	E
Approach Vol, veh/h		1045			1412			428			146	
Approach Delay, s/veh		18.7			22.4			62.9			60.9	
Approach LOS		B			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	68.6		26.6	10.3	69.0		14.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	49.0		23.0	5.0	50.0		18.0				
Max Q Clear Time (g_c+l1), s	4.5	21.0		20.1	3.8	34.1		7.8				
Green Ext Time (p_c), s	0.0	7.5		0.5	0.0	8.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				28.7								
HCM 6th LOS				C								

Timings

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Total AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	55	1174	229	58	782	31	121	18	27	85
Future Volume (vph)	55	1174	229	58	782	31	121	18	27	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	61.0	61.0	11.0	61.0	61.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	50.8%	50.8%	9.2%	50.8%	50.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

											
Ø1	Ø2 (R)		Ø4	Ø8							
11 s	61 s		24 s	24 s							
											
Ø5	Ø6 (R)										
11 s	61 s										

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Total AM

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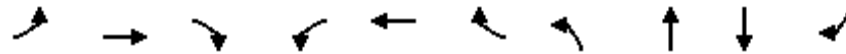
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	55	1174	229	58	782	31	121	18	49	57	27	85
Future Volume (veh/h)	55	1174	229	58	782	31	121	18	49	57	27	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1276	249	63	850	34	132	20	53	62	29	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	366	2109	941	250	2111	942	165	42	111	95	45	122
Arrive On Green	0.04	0.59	0.59	0.01	0.20	0.20	0.09	0.09	0.09	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	453	1201	1232	576	1585
Grp Volume(v), veh/h	60	1276	249	63	850	34	132	0	73	91	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1654	1809	0	1585
Q Serve(g_s), s	1.5	27.3	9.1	1.6	25.1	2.1	8.7	0.0	5.0	5.9	0.0	6.8
Cycle Q Clear(g_c), s	1.5	27.3	9.1	1.6	25.1	2.1	8.7	0.0	5.0	5.9	0.0	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	0.68		1.00
Lane Grp Cap(c), veh/h	366	2109	941	250	2111	942	165	0	153	140	0	122
V/C Ratio(X)	0.16	0.60	0.26	0.25	0.40	0.04	0.80	0.00	0.48	0.65	0.00	0.75
Avail Cap(c_a), veh/h	376	2109	941	259	2111	942	267	0	248	271	0	238
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.4	15.5	11.8	12.7	29.7	20.4	53.3	0.0	51.7	53.8	0.0	54.2
Incr Delay (d2), s/veh	0.2	1.3	0.7	0.5	0.5	0.1	8.6	0.0	2.3	5.0	0.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.6	3.2	0.6	12.0	0.7	4.3	0.0	2.2	2.9	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	16.8	12.4	13.1	30.2	20.5	61.9	0.0	54.0	58.8	0.0	63.1
LnGrp LOS	B	B	B	B	C	C	E	A	D	E	A	E
Approach Vol, veh/h		1585			947			205			183	
Approach Delay, s/veh		15.9			28.7			59.1			61.0	
Approach LOS		B			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	77.2		17.1	10.3	77.3		15.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	55.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+l1), s	3.6	29.3		10.7	3.5	27.1		8.8				
Green Ext Time (p_c), s	0.0	11.3		0.4	0.0	6.3		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			25.9									
HCM 6th LOS			C									

Timings

2028 Total PM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	1009	94	74	1349	50	247	57	36	50
Future Volume (vph)	51	1009	94	74	1349	50	247	57	36	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	56.0	56.0	13.0	58.0	58.0	27.0	27.0	24.0	24.0
Total Split (%)	9.2%	46.7%	46.7%	10.8%	48.3%	48.3%	22.5%	22.5%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 105

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

	Ø1		Ø2 (R)		Ø4		Ø8
13 s		56 s		27 s		24 s	
	Ø5		Ø6 (R)				
11 s		58 s					

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1009	94	74	1349	50	247	57	82	50	36	50
Future Volume (veh/h)	51	1009	94	74	1349	50	247	57	82	50	36	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	1121	104	82	1499	56	274	63	91	56	40	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1849	825	266	1862	830	301	117	169	76	54	113
Arrive On Green	0.04	0.52	0.52	0.01	0.17	0.17	0.17	0.17	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	692	999	1060	757	1585
Grp Volume(v), veh/h	57	1121	104	82	1499	56	274	0	154	96	0	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1691	1817	0	1585
Q Serve(g_s), s	1.8	26.5	4.0	2.5	48.6	3.5	18.1	0.0	10.0	6.2	0.0	4.1
Cycle Q Clear(g_c), s	1.8	26.5	4.0	2.5	48.6	3.5	18.1	0.0	10.0	6.2	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	0.58		1.00
Lane Grp Cap(c), veh/h	162	1849	825	266	1862	830	301	0	286	130	0	113
V/C Ratio(X)	0.35	0.61	0.13	0.31	0.81	0.07	0.91	0.00	0.54	0.74	0.00	0.49
Avail Cap(c_a), veh/h	174	1849	825	300	1862	830	312	0	296	273	0	238
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.9	20.2	14.8	16.2	43.7	25.1	48.9	0.0	45.6	54.6	0.0	53.6
Incr Delay (d2), s/veh	1.3	1.5	0.3	0.5	2.9	0.1	28.5	0.0	1.8	8.0	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	11.1	1.5	1.1	24.0	1.4	10.4	0.0	4.3	3.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	21.6	15.1	16.7	46.7	25.2	77.5	0.0	47.4	62.6	0.0	56.9
LnGrp LOS	C	C	B	B	D	C	E	A	D	E	A	E
Approach Vol, veh/h	1282			1637			428			152		
Approach Delay, s/veh	21.3			44.4			66.6			60.5		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	68.5		26.3	10.3	68.9		14.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	50.0		21.0	5.0	52.0		18.0				
Max Q Clear Time (g_c+l1), s	4.5	28.5		20.1	3.8	50.6		8.2				
Green Ext Time (p_c), s	0.0	9.1		0.2	0.0	1.2		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	39.4											
HCM 6th LOS	D											

Timings

2028 Total AM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	55	1174	229	58	782	31	121	18	57	27	85
Future Volume (vph)	55	1174	229	58	782	31	121	18	57	27	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4	3	8	
Permitted Phases	2		2	6		6			8		8
Detector Phase	5	2	2	1	6	6	7	4	3	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0	24.0	24.0
Total Split (s)	11.0	69.0	69.0	12.0	70.0	70.0	15.0	28.0	11.0	24.0	24.0
Total Split (%)	9.2%	57.5%	57.5%	10.0%	58.3%	58.3%	12.5%	23.3%	9.2%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

											
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8				
12 s	69 s	11 s	28 s	11 s	70 s	15 s	24 s				

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Total AM - Improved

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1174	229	58	782	31	121	18	49	57	27	85
Future Volume (veh/h)	55	1174	229	58	782	31	121	18	49	57	27	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1276	249	63	850	34	132	20	53	62	29	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	2252	1004	271	2254	1005	187	40	106	195	141	120
Arrive On Green	0.04	0.63	0.63	0.07	1.00	1.00	0.05	0.09	0.09	0.04	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	453	1201	1781	1870	1585
Grp Volume(v), veh/h	60	1276	249	63	850	34	132	0	73	62	29	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	0	1654	1781	1870	1585
Q Serve(g_s), s	1.4	24.6	8.2	1.4	0.0	0.0	4.5	0.0	5.1	3.8	1.7	6.8
Cycle Q Clear(g_c), s	1.4	24.6	8.2	1.4	0.0	0.0	4.5	0.0	5.1	3.8	1.7	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	522	2252	1004	271	2254	1005	187	0	146	195	141	120
V/C Ratio(X)	0.11	0.57	0.25	0.23	0.38	0.03	0.70	0.00	0.50	0.32	0.21	0.77
Avail Cap(c_a), veh/h	532	2252	1004	295	2254	1005	259	0	303	195	281	238
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	12.6	9.6	9.5	0.0	0.0	55.8	0.0	52.2	48.5	52.1	54.4
Incr Delay (d2), s/veh	0.1	1.0	0.6	0.4	0.4	0.1	5.1	0.0	2.6	0.9	0.7	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	9.2	2.9	0.5	0.1	0.0	2.1	0.0	2.2	1.8	0.9	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	13.6	10.1	9.9	0.4	0.1	60.9	0.0	54.8	49.4	52.8	64.3
LnGrp LOS	A	B	B	A	A	A	E	A	D	D	D	E
Approach Vol, veh/h	1585			947				205			183	
Approach Delay, s/veh	12.8			1.1				58.7			57.4	
Approach LOS	B			A				E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	82.0	11.0	16.6	10.3	82.1	12.5	15.1				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	63.0	5.0	22.0	5.0	64.0	9.0	18.0				
Max Q Clear Time (g_c+l1), s	3.4	26.6	5.8	7.1	3.4	2.0	6.5	8.8				
Green Ext Time (p_c), s	0.0	12.9	0.0	0.3	0.0	6.9	0.1	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	15.0											
HCM 6th LOS	B											

Timings

2028 Total PM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	51	1009	94	74	1349	50	247	57	50	36	50
Future Volume (vph)	51	1009	94	74	1349	50	247	57	50	36	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4	3	8	
Permitted Phases	2		2	6		6			8		8
Detector Phase	5	2	2	1	6	6	7	4	3	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0	24.0	24.0
Total Split (s)	11.0	65.0	65.0	12.0	66.0	66.0	19.0	32.0	11.0	24.0	24.0
Total Split (%)	9.2%	54.2%	54.2%	10.0%	55.0%	55.0%	15.8%	26.7%	9.2%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

								
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8	
12 s	65 s	11 s	32 s	11 s	66 s	19 s	24 s	

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2028 Total PM - Improved

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1009	94	74	1349	50	247	57	82	50	36	50
Future Volume (veh/h)	51	1009	94	74	1349	50	247	57	82	50	36	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	1121	104	82	1499	56	274	63	91	56	40	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	2171	968	326	2184	974	331	77	111	157	101	86
Arrive On Green	0.04	0.61	0.61	0.03	0.41	0.41	0.10	0.11	0.11	0.04	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	692	999	1781	1870	1585
Grp Volume(v), veh/h	57	1121	104	82	1499	56	274	0	154	56	40	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	0	1691	1781	1870	1585
Q Serve(g_s), s	1.4	21.5	3.3	2.0	41.5	2.6	9.3	0.0	10.7	3.5	2.5	4.2
Cycle Q Clear(g_c), s	1.4	21.5	3.3	2.0	41.5	2.6	9.3	0.0	10.7	3.5	2.5	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	212	2171	968	326	2184	974	331	0	188	157	101	86
V/C Ratio(X)	0.27	0.52	0.11	0.25	0.69	0.06	0.83	0.00	0.82	0.36	0.39	0.65
Avail Cap(c_a), veh/h	223	2171	968	346	2184	974	374	0	366	161	281	238
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	13.3	9.7	10.2	25.8	14.4	53.3	0.0	52.2	51.0	54.8	55.6
Incr Delay (d2), s/veh	0.7	0.9	0.2	0.3	1.3	0.1	12.9	0.0	8.5	1.4	2.5	8.1
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	0.6	8.5	1.2	0.8	18.9	0.9	4.6	0.0	5.0	1.6	1.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	14.1	9.9	10.5	27.2	14.4	66.2	0.0	60.7	52.4	57.3	63.7
LnGrp LOS	B	B	A	B	C	B	E	A	E	D	E	E
Approach Vol, veh/h	1282			1637			428			152		
Approach Delay, s/veh	13.9			25.9			64.2			57.9		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	79.3	10.7	19.3	10.3	79.7	17.5	12.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	59.0	5.0	26.0	5.0	60.0	13.0	18.0				
Max Q Clear Time (g_c+l1), s	4.0	23.5	5.5	12.7	3.4	43.5	11.3	6.2				
Green Ext Time (p_c), s	0.0	10.9	0.0	0.6	0.0	10.4	0.2	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	27.6											
HCM 6th LOS	C											

Timings 3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Background AM

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	55	1077	229	58	662	28	121	18	27	85
Future Volume (vph)	55	1077	229	58	662	28	121	18	27	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	60.0	60.0	12.0	61.0	61.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	50.0%	50.0%	10.0%	50.8%	50.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

											
Ø1	Ø2 (R)		Ø4	Ø8							
12 s	60 s		24 s	24 s							
											
Ø5	Ø6 (R)										
11 s	61 s										

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Background AM

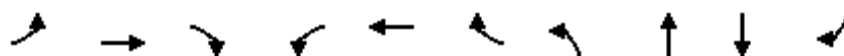
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1077	229	58	662	28	121	18	49	52	27	85
Future Volume (veh/h)	55	1077	229	58	662	28	121	18	49	52	27	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1171	249	63	720	30	132	20	53	57	29	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	2110	941	274	2112	942	165	42	111	92	47	122
Arrive On Green	0.04	0.59	0.59	0.04	0.59	0.59	0.09	0.09	0.09	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	453	1201	1200	610	1585
Grp Volume(v), veh/h	60	1171	249	63	720	30	132	0	73	86	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1654	1810	0	1585
Q Serve(g_s), s	1.5	24.0	9.1	1.6	12.4	0.9	8.7	0.0	5.0	5.5	0.0	6.8
Cycle Q Clear(g_c), s	1.5	24.0	9.1	1.6	12.4	0.9	8.7	0.0	5.0	5.5	0.0	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	0.66		1.00
Lane Grp Cap(c), veh/h	474	2110	941	274	2112	942	165	0	153	140	0	122
V/C Ratio(X)	0.13	0.56	0.26	0.23	0.34	0.03	0.80	0.00	0.48	0.62	0.00	0.75
Avail Cap(c_a), veh/h	484	2110	941	298	2112	942	267	0	248	272	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	14.8	11.8	11.4	12.4	10.1	53.3	0.0	51.7	53.7	0.0	54.3
Incr Delay (d2), s/veh	0.1	1.1	0.7	0.4	0.4	0.1	8.6	0.0	2.3	4.4	0.0	9.0
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	0.6	9.6	3.3	0.6	4.9	0.3	4.3	0.0	2.2	2.7	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	15.8	12.4	11.8	12.8	10.1	61.9	0.0	54.0	58.0	0.0	63.2
LnGrp LOS	A	B	B	B	B	B	E	A	D	E	A	E
Approach Vol, veh/h	1480				813				205		178	
Approach Delay, s/veh	15.0				12.6				59.1		60.7	
Approach LOS	B				B				E		E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	77.2		17.1	10.3	77.3		15.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	54.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+l1), s	3.6	26.0		10.7	3.5	14.4		8.8				
Green Ext Time (p_c), s	0.0	11.5		0.4	0.0	6.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	20.7											
HCM 6th LOS	C											

Timings 3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Background PM

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	853	94	74	1237	45	247	57	36	50
Future Volume (vph)	51	853	94	74	1237	45	247	57	36	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	56.0	56.0	12.0	57.0	57.0	28.0	28.0	24.0	24.0
Total Split (%)	9.2%	46.7%	46.7%	10.0%	47.5%	47.5%	23.3%	23.3%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

	Ø1		Ø2 (R)		Ø4		Ø8
12 s		56 s		28 s		24 s	
	Ø5		Ø6 (R)				
11 s		57 s					

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Background PM

11/13/2023

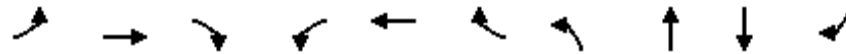
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	853	94	74	1237	45	247	57	82	45	36	50
Future Volume (veh/h)	51	853	94	74	1237	45	247	57	82	45	36	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	948	104	82	1374	50	274	63	91	50	40	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	1857	828	317	1870	834	304	118	170	69	55	108
Arrive On Green	0.04	0.52	0.52	0.04	0.53	0.53	0.17	0.17	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	692	999	1011	809	1585
Grp Volume(v), veh/h	57	948	104	82	1374	50	274	0	154	90	0	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1691	1820	0	1585
Q Serve(g_s), s	1.8	20.8	4.0	2.5	35.8	1.9	18.1	0.0	10.0	5.8	0.0	4.1
Cycle Q Clear(g_c), s	1.8	20.8	4.0	2.5	35.8	1.9	18.1	0.0	10.0	5.8	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	0.56		1.00
Lane Grp Cap(c), veh/h	209	1857	828	317	1870	834	304	0	288	124	0	108
V/C Ratio(X)	0.27	0.51	0.13	0.26	0.73	0.06	0.90	0.00	0.53	0.73	0.00	0.52
Avail Cap(c_a), veh/h	220	1857	828	336	1870	834	327	0	310	273	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	18.7	14.6	14.2	22.0	13.9	48.8	0.0	45.4	54.8	0.0	54.0
Incr Delay (d2), s/veh	0.7	1.0	0.3	0.4	2.6	0.1	25.7	0.0	1.5	7.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.7	1.5	1.0	15.1	0.7	10.2	0.0	4.3	2.9	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	19.7	14.9	14.7	24.6	14.1	74.5	0.0	47.0	62.8	0.0	57.9
LnGrp LOS	B	B	B	B	C	B	E	A	D	E	A	E
Approach Vol, veh/h		1109			1506			428			146	
Approach Delay, s/veh		19.2			23.7			64.6			60.9	
Approach LOS		B			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	68.7		26.5	10.3	69.1		14.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	50.0		22.0	5.0	51.0		18.0				
Max Q Clear Time (g_c+l1), s	4.5	22.8		20.1	3.8	37.8		7.8				
Green Ext Time (p_c), s	0.0	8.1		0.4	0.0	8.2		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				29.3								
HCM 6th LOS				C								

Timings

2045 Total AM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	55	1243	229	58	823	31	121	18	27	85
Future Volume (vph)	55	1243	229	58	823	31	121	18	27	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	61.0	61.0	11.0	61.0	61.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	50.8%	50.8%	9.2%	50.8%	50.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 20 (17%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

	Ø1		Ø2 (R)		Ø4		Ø8
11 s		61 s		24 s		24 s	
	Ø5		Ø6 (R)				
11 s		61 s					

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Total AM

11/13/2023

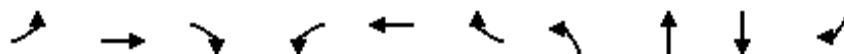
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	55	1243	229	58	823	31	121	18	49	57	27	85
Future Volume (veh/h)	55	1243	229	58	823	31	121	18	49	57	27	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1351	249	63	895	34	132	20	53	62	29	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	2109	941	235	2111	942	165	42	111	95	45	122
Arrive On Green	0.04	0.59	0.59	0.01	0.20	0.20	0.09	0.09	0.09	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	453	1201	1232	576	1585
Grp Volume(v), veh/h	60	1351	249	63	895	34	132	0	73	91	0	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1654	1809	0	1585
Q Serve(g_s), s	1.5	29.9	9.1	1.6	26.5	2.1	8.7	0.0	5.0	5.9	0.0	6.8
Cycle Q Clear(g_c), s	1.5	29.9	9.1	1.6	26.5	2.1	8.7	0.0	5.0	5.9	0.0	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	0.68		1.00
Lane Grp Cap(c), veh/h	349	2109	941	235	2111	942	165	0	153	140	0	122
V/C Ratio(X)	0.17	0.64	0.26	0.27	0.42	0.04	0.80	0.00	0.48	0.65	0.00	0.75
Avail Cap(c_a), veh/h	359	2109	941	244	2111	942	267	0	248	271	0	238
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	16.0	11.8	13.5	30.2	20.4	53.3	0.0	51.7	53.8	0.0	54.2
Incr Delay (d2), s/veh	0.2	1.5	0.7	0.6	0.6	0.1	8.6	0.0	2.3	5.0	0.0	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	12.1	3.3	0.7	12.8	0.8	4.3	0.0	2.2	2.9	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	17.5	12.4	14.1	30.8	20.5	61.9	0.0	54.0	58.8	0.0	63.1
LnGrp LOS	B	B	B	B	C	C	E	A	D	E	A	E
Approach Vol, veh/h		1660			992			205			183	
Approach Delay, s/veh		16.5			29.4			59.1			61.0	
Approach LOS		B			C			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	77.2		17.1	10.3	77.3		15.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	55.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+I1), s	3.6	31.9		10.7	3.5	28.5		8.8				
Green Ext Time (p_c), s	0.0	12.3		0.4	0.0	7.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay				26.3								
HCM 6th LOS				C								

Timings

2045 Total PM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	1066	94	74	1434	50	247	57	36	50
Future Volume (vph)	51	1066	94	74	1434	50	247	57	36	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	NA	Perm
Protected Phases	5	2		1	6		4	4	8	
Permitted Phases	2		2	6		6				8
Detector Phase	5	2	2	1	6	6	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	59.0	59.0	13.0	61.0	61.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	49.2%	49.2%	10.8%	50.8%	50.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

	Ø1		Ø2 (R)		Ø4		Ø8
13 s		59 s			24 s		24 s
	Ø5		Ø6 (R)				
11 s		61 s					

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Total PM

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	51	1066	94	74	1434	50	247	57	82	50	36	50
Future Volume (veh/h)	51	1066	94	74	1434	50	247	57	82	50	36	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	1184	104	82	1593	56	274	63	91	56	40	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	1918	855	262	1930	861	267	104	150	76	54	113
Arrive On Green	0.04	0.54	0.54	0.01	0.18	0.18	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	692	999	1060	757	1585
Grp Volume(v), veh/h	57	1184	104	82	1593	56	274	0	154	96	0	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	0	1691	1817	0	1585
Q Serve(g_s), s	1.7	27.6	3.9	2.4	51.8	3.5	18.0	0.0	10.2	6.2	0.0	4.1
Cycle Q Clear(g_c), s	1.7	27.6	3.9	2.4	51.8	3.5	18.0	0.0	10.2	6.2	0.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	0.58		1.00
Lane Grp Cap(c), veh/h	157	1918	855	262	1930	861	267	0	254	130	0	113
V/C Ratio(X)	0.36	0.62	0.12	0.31	0.83	0.07	1.03	0.00	0.61	0.74	0.00	0.49
Avail Cap(c_a), veh/h	168	1918	855	297	1930	861	267	0	254	273	0	238
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.7	19.1	13.6	15.5	43.8	23.9	51.0	0.0	47.7	54.6	0.0	53.6
Incr Delay (d2), s/veh	1.4	1.5	0.3	0.5	3.1	0.1	61.8	0.0	4.1	8.0	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	11.5	1.5	1.0	25.5	1.4	12.6	0.0	4.6	3.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	20.6	13.9	16.0	46.8	24.0	112.8	0.0	51.8	62.6	0.0	56.9
LnGrp LOS	C	C	B	B	D	C	F	A	D	E	A	E
Approach Vol, veh/h	1345			1731			428			152		
Approach Delay, s/veh	20.3			44.6			90.8			60.5		
Approach LOS	C			D			F			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	70.8		24.0	10.3	71.2		14.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	53.0		18.0	5.0	55.0		18.0				
Max Q Clear Time (g_c+l1), s	4.4	29.6		20.0	3.7	53.8		8.2				
Green Ext Time (p_c), s	0.0	10.0		0.0	0.0	1.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	41.7											
HCM 6th LOS	D											

Timings

2045 Total AM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	55	1243	229	58	823	31	121	18	57	27	85
Future Volume (vph)	55	1243	229	58	823	31	121	18	57	27	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4	3	8	
Permitted Phases	2		2	6		6			8		8
Detector Phase	5	2	2	1	6	6	7	4	3	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0	24.0	24.0
Total Split (s)	11.0	69.0	69.0	12.0	70.0	70.0	15.0	28.0	11.0	24.0	24.0
Total Split (%)	9.2%	57.5%	57.5%	10.0%	58.3%	58.3%	12.5%	23.3%	9.2%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

								
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8	
12 s	69 s	11 s	28 s	11 s	70 s	15 s	24 s	

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Total AM - Improved

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1243	229	58	823	31	121	18	49	57	27	85
Future Volume (veh/h)	55	1243	229	58	823	31	121	18	49	57	27	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	1351	249	63	895	34	132	20	53	62	29	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	506	2252	1004	255	2254	1005	187	40	106	195	141	120
Arrive On Green	0.04	0.63	0.63	0.07	1.00	1.00	0.05	0.09	0.09	0.04	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	453	1201	1781	1870	1585
Grp Volume(v), veh/h	60	1351	249	63	895	34	132	0	73	62	29	92
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	0	1654	1781	1870	1585
Q Serve(g_s), s	1.4	27.0	8.2	1.4	0.0	0.0	4.5	0.0	5.1	3.8	1.7	6.8
Cycle Q Clear(g_c), s	1.4	27.0	8.2	1.4	0.0	0.0	4.5	0.0	5.1	3.8	1.7	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	506	2252	1004	255	2254	1005	187	0	146	195	141	120
V/C Ratio(X)	0.12	0.60	0.25	0.25	0.40	0.03	0.70	0.00	0.50	0.32	0.21	0.77
Avail Cap(c_a), veh/h	516	2252	1004	279	2254	1005	259	0	303	195	281	238
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.8	13.0	9.6	10.1	0.0	0.0	55.8	0.0	52.2	48.5	52.1	54.4
Incr Delay (d2), s/veh	0.1	1.2	0.6	0.5	0.5	0.1	5.1	0.0	2.6	0.9	0.7	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.5	2.9	0.5	0.2	0.0	2.1	0.0	2.2	1.8	0.9	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	14.2	10.1	10.6	0.5	0.1	60.9	0.0	54.8	49.4	52.8	64.3
LnGrp LOS	A	B	B	B	A	A	E	A	D	D	D	E
Approach Vol, veh/h		1660			992			205			183	
Approach Delay, s/veh		13.3			1.1			58.7			57.4	
Approach LOS		B			A			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	82.0	11.0	16.6	10.3	82.1	12.5	15.1				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	63.0	5.0	22.0	5.0	64.0	9.0	18.0				
Max Q Clear Time (g_c+l1), s	3.4	29.0	5.8	7.1	3.4	2.0	6.5	8.8				
Green Ext Time (p_c), s	0.0	14.9	0.0	0.3	0.0	8.3	0.1	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Timings

2045 Total PM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	51	1066	94	74	1434	50	247	57	50	36	50
Future Volume (vph)	51	1066	94	74	1434	50	247	57	50	36	50
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4	3	8	
Permitted Phases	2		2	6		6			8		8
Detector Phase	5	2	2	1	6	6	7	4	3	8	8
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)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0	24.0	24.0
Total Split (s)	11.0	66.0	66.0	12.0	67.0	67.0	18.0	31.0	11.0	24.0	24.0
Total Split (%)	9.2%	55.0%	55.0%	10.0%	55.8%	55.8%	15.0%	25.8%	9.2%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 3: Southpark Lane/Windermere Street & Mineral Avenue

											
Ø1	Ø2 (R)	Ø3	Ø4	Ø5	Ø6 (R)	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12
12 s	66 s	11 s	31 s	11 s	67 s	18 s	24 s	11 s	31 s	11 s	31 s

HCM 6th Signalized Intersection Summary

3: Southpark Lane/Windermere Street & Mineral Avenue

2045 Total PM - Improved

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1066	94	74	1434	50	247	57	82	50	36	50
Future Volume (veh/h)	51	1066	94	74	1434	50	247	57	82	50	36	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	1184	104	82	1593	56	274	63	91	56	40	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	2172	969	308	2185	974	329	77	111	156	102	87
Arrive On Green	0.04	0.61	0.61	0.03	0.41	0.41	0.10	0.11	0.11	0.04	0.05	0.05
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	692	999	1781	1870	1585
Grp Volume(v), veh/h	57	1184	104	82	1593	56	274	0	154	56	40	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	0	1691	1781	1870	1585
Q Serve(g_s), s	1.4	23.3	3.3	2.0	45.2	2.6	9.4	0.0	10.7	3.5	2.5	4.2
Cycle Q Clear(g_c), s	1.4	23.3	3.3	2.0	45.2	2.6	9.4	0.0	10.7	3.5	2.5	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	195	2172	969	308	2185	974	329	0	187	156	102	87
V/C Ratio(X)	0.29	0.55	0.11	0.27	0.73	0.06	0.83	0.00	0.82	0.36	0.39	0.65
Avail Cap(c_a), veh/h	206	2172	969	328	2185	974	346	0	352	161	281	238
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.71	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	13.6	9.7	10.6	26.9	14.3	53.4	0.0	52.2	51.0	54.8	55.6
Incr Delay (d2), s/veh	0.8	1.0	0.2	0.3	1.6	0.1	15.3	0.0	8.6	1.4	2.4	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	9.2	1.2	0.8	20.6	0.9	4.8	0.0	5.0	1.6	1.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	14.6	9.9	11.0	28.4	14.4	68.7	0.0	60.8	52.3	57.2	63.4
LnGrp LOS	B	B	A	B	C	B	E	A	E	D	E	E
Approach Vol, veh/h	1345			1731			428			152		
Approach Delay, s/veh	14.4			27.2			65.9			57.7		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	79.3	10.7	19.3	10.3	79.8	17.4	12.6				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	60.0	5.0	25.0	5.0	61.0	12.0	18.0				
Max Q Clear Time (g_c+l1), s	4.0	25.3	5.5	12.7	3.4	47.2	11.4	6.2				
Green Ext Time (p_c), s	0.0	11.7	0.0	0.6	0.0	9.6	0.1	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	28.3											
HCM 6th LOS	C											

HCM 6th TWSC
4: Mineral Avenue & Mineral Place

2023 Adjusted Existing AM

11/10/2023

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	789	2	7	542	43	0	8	3	4	3	2
Future Vol, veh/h	24	789	2	7	542	43	0	8	3	4	3	2
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	150	-	150	150	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	813	2	7	559	44	0	8	3	4	3	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	603	0	0	815	0	0	1158	1480	407	1034	1438	280
Stage 1	-	-	-	-	-	-	863	863	-	573	573	-
Stage 2	-	-	-	-	-	-	295	617	-	461	865	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1291	-	-	*1141	-	-	*298	*181	*763	*389	*196	*867
Stage 1	-	-	-	-	-	-	*719	*630	-	*817	*717	-
Stage 2	-	-	-	-	-	-	*817	*701	-	*719	*630	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1291	-	-	*1141	-	-	*289	*177	*763	*373	*191	*867
Mov Cap-2 Maneuver	-	-	-	-	-	-	*470	*374	-	*506	*387	-
Stage 1	-	-	-	-	-	-	*706	*618	-	*802	*712	-
Stage 2	-	-	-	-	-	-	*807	*696	-	*693	*618	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			13.5			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	434	1291	-	-	* 1141	-	-	501
HCM Lane V/C Ratio	0.026	0.019	-	-	0.006	-	-	0.019
HCM Control Delay (s)	13.5	7.8	-	-	8.2	-	-	12.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

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

HCM 6th TWSC
4: Mineral Avenue & Mineral Place

2023 Adjusted Existing PM
11/10/2023

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	4	814	2	11	940	12	1	0	5	40	0	53
Future Vol, veh/h	4	814	2	11	940	12	1	0	5	40	0	53
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	150	-	150	150	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	885	2	12	1022	13	1	0	5	43	0	58
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1035	0	0	887	0	0	1428	1952	443	1497	1941	511
Stage 1	-	-	-	-	-	-	893	893	-	1046	1046	-
Stage 2	-	-	-	-	-	-	535	1059	-	451	895	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1024	-	-	*1102	-	-	*337	*103	*737	*279	*106	*685
Stage 1	-	-	-	-	-	-	*695	*609	-	*645	*566	-
Stage 2	-	-	-	-	-	-	*645	*566	-	*695	*609	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*1024	-	-	*1102	-	-	*306	*102	*737	*273	*104	*685
Mov Cap-2 Maneuver	-	-	-	-	-	-	*426	*311	-	*425	*311	-
Stage 1	-	-	-	-	-	-	*692	*606	-	*643	*560	-
Stage 2	-	-	-	-	-	-	*585	*560	-	*687	*606	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			10.5			13.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	657 * 1024	-	-	-	* 1102	-	-	542				
HCM Lane V/C Ratio	0.01 0.004	-	-	-	0.011	-	-	0.187				
HCM Control Delay (s)	10.5 8.5	-	-	-	8.3	-	-	13.2				
HCM Lane LOS	B A	-	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0 0	-	-	-	0	-	-	0.7				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	1086	2	8	788	53	0	9	3	8	3	6
Future Vol, veh/h	32	1086	2	8	788	53	0	9	3	8	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1120	2	8	812	55	0	9	3	8	3	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	867	0	0	1122	0	0	1610	2069	560	1459	2016	406
Stage 1	-	-	-	-	-	-	1186	1186	-	828	828	-
Stage 2	-	-	-	-	-	-	424	883	-	631	1188	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1150	-	-	*963	-	-	*141	*68	*644	*204	*75	*771
Stage 1	-	-	-	-	-	-	*607	*532	-	*727	*638	-
Stage 2	-	-	-	-	-	-	*727	*620	-	*607	*532	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1150	-	-	*963	-	-	*135	*65	*644	*193	*73	*771
Mov Cap-2 Maneuver	-	-	-	-	-	-	*349	*279	-	*374	*290	-
Stage 1	-	-	-	-	-	-	*589	*517	-	*706	*632	-
Stage 2	-	-	-	-	-	-	*712	*615	-	*576	*517	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			16.5			13.7		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1150	-	-	* 963	-	-	430
HCM Lane V/C Ratio	0.038	0.029	-	-	0.009	-	-	0.041
HCM Control Delay (s)	16.5	8.2	-	-	8.8	-	-	13.7
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

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

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1035	2	12	1211	26	1	0	5	57	0	69
Future Vol, veh/h	15	1035	2	12	1211	26	1	0	5	57	0	69
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	150	-	150	150	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1125	2	13	1316	28	1	0	5	62	0	75
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1344	0	0	1127	0	0	1841	2527	563	1937	2501	658
Stage 1	-	-	-	-	-	-	1157	1157	-	1342	1342	-
Stage 2	-	-	-	-	-	-	684	1370	-	595	1159	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*868	-	-	*985	-	-	*167	*28	*659	*122	*30	*580
Stage 1	-	-	-	-	-	-	*621	*544	-	*547	*480	-
Stage 2	-	-	-	-	-	-	*547	*480	-	*621	*544	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*868	-	-	*985	-	-	*142	*27	*659	*118	*29	*580
Mov Cap-2 Maneuver	-	-	-	-	-	-	*300	*237	-	*311	*240	-
Stage 1	-	-	-	-	-	-	*610	*535	-	*537	*473	-
Stage 2	-	-	-	-	-	-	*470	*473	-	*604	*535	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			11.6			17.8		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	549	* 868	-	-	* 985	-	-	417				
HCM Lane V/C Ratio	0.012	0.019	-	-	0.013	-	-	0.328				
HCM Control Delay (s)	11.6	9.2	-	-	8.7	-	-	17.8				
HCM Lane LOS	B	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.4				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings

4: Mineral Avenue & Mineral Place

2028 Total AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1211	92	63	914	53	79	9	8	3
Future Volume (vph)	32	1211	92	63	914	53	79	9	8	3
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	78.0	78.0	14.0	79.0	79.0	28.0	28.0	28.0	28.0
Total Split (%)	10.8%	65.0%	65.0%	11.7%	65.8%	65.8%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 83 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place

								
Ø1	Ø2 (R)		Ø5	Ø6 (R)		Ø4	Ø8	
13 s	79 s		14 s	78 s		28 s	28 s	

HCM 6th Signalized Intersection Summary

2028 Total AM

4: Mineral Avenue & Mineral Place

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1211	92	63	914	53	79	9	50	8	3	6
Future Volume (veh/h)	32	1211	92	63	914	53	79	9	50	8	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1248	95	65	942	55	81	9	52	8	3	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	529	2640	1177	371	2672	1192	167	17	97	68	29	29
Arrive On Green	0.03	0.74	0.74	0.07	1.00	1.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1406	239	1382	340	410	409
Grp Volume(v), veh/h	33	1248	95	65	942	55	81	0	61	17	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1406	0	1622	1160	0	0
Q Serve(g_s), s	0.5	16.7	2.0	1.0	0.0	0.0	1.7	0.0	4.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	16.7	2.0	1.0	0.0	0.0	6.1	0.0	4.4	4.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	0.47		0.35
Lane Grp Cap(c), veh/h	529	2640	1177	371	2672	1192	167	0	114	126	0	0
V/C Ratio(X)	0.06	0.47	0.08	0.18	0.35	0.05	0.48	0.00	0.54	0.14	0.00	0.00
Avail Cap(c_a), veh/h	584	2640	1177	424	2672	1192	326	0	297	295	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	6.1	4.2	4.2	0.0	0.0	54.6	0.0	53.9	52.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.2	0.3	0.1	2.2	0.0	3.9	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.2	0.6	0.3	0.1	0.0	2.5	0.0	1.9	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.3	6.6	4.3	4.4	0.3	0.1	56.8	0.0	57.7	52.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	A
Approach Vol, veh/h	1376				1062				142			
Approach Delay, s/veh	6.3				0.6				57.2			
Approach LOS	A				A				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	96.2		14.4	10.4	95.1		14.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	73.0		22.0	8.0	72.0		22.0				
Max Q Clear Time (g_c+l1), s	2.5	2.0		8.1	3.0	18.7		6.4				
Green Ext Time (p_c), s	0.0	8.1		0.4	0.0	12.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	7.1											
HCM 6th LOS	A											

Timings

4: Mineral Avenue & Mineral Place

2028 Total PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	15	1191	133	118	1344	26	138	0	57	0
Future Volume (vph)	15	1191	133	118	1344	26	138	0	57	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	74.0	74.0	17.0	80.0	80.0	29.0	29.0	29.0	29.0
Total Split (%)	9.2%	61.7%	61.7%	14.2%	66.7%	66.7%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place

								
Ø1	Ø2 (R)		Ø4			Ø5	Ø6 (R)	Ø8
11 s	80 s		29 s			17 s	74 s	29 s

HCM 6th Signalized Intersection Summary

2028 Total PM

4: Mineral Avenue & Mineral Place

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1191	133	118	1344	26	138	0	113	57	0	69
Future Volume (veh/h)	15	1191	133	118	1344	26	138	0	113	57	0	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	1295	145	128	1461	28	150	0	123	62	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	2249	1003	371	2341	1044	232	0	276	111	16	100
Arrive On Green	0.03	1.00	1.00	0.09	1.00	1.00	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1325	0	1585	387	89	576
Grp Volume(v), veh/h	16	1295	145	128	1461	28	150	0	123	137	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1325	0	1585	1052	0	0
Q Serve(g_s), s	0.4	0.0	0.0	3.1	0.0	0.0	2.0	0.0	8.3	8.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	3.1	0.0	0.0	18.6	0.0	8.3	16.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.45		0.55
Lane Grp Cap(c), veh/h	314	2249	1003	371	2341	1044	232	0	276	227	0	0
V/C Ratio(X)	0.05	0.58	0.14	0.34	0.62	0.03	0.65	0.00	0.45	0.60	0.00	0.00
Avail Cap(c_a), veh/h	358	2249	1003	458	2341	1044	256	0	304	252	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.3	0.0	0.0	6.5	0.0	0.0	49.0	0.0	44.4	49.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.2	0.4	1.0	0.0	4.8	0.0	1.1	3.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.1	1.1	0.3	0.0	4.7	0.0	3.4	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.3	0.8	0.2	6.9	1.0	0.0	53.8	0.0	45.5	52.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h	1456				1617				273		137	
Approach Delay, s/veh	0.8				1.5				50.1		52.4	
Approach LOS	A				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	85.0		26.9	11.2	81.9		26.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	74.0		23.0	11.0	68.0		23.0				
Max Q Clear Time (g_c+l1), s	2.4	2.0		20.6	5.1	2.0		18.6				
Green Ext Time (p_c), s	0.0	18.9		0.3	0.1	15.8		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	7.0											
HCM 6th LOS	A											

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	1162	2	8	844	53	0	9	3	8	3	6
Future Vol, veh/h	32	1162	2	8	844	53	0	9	3	8	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1198	2	8	870	55	0	9	3	8	3	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	925	0	0	1200	0	0	1717	2205	599	1556	2152	435
Stage 1	-	-	-	-	-	-	1264	1264	-	886	886	-
Stage 2	-	-	-	-	-	-	453	941	-	670	1266	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1102	-	-	*907	-	-	*125	*54	*607	*190	*60	*737
Stage 1	-	-	-	-	-	-	*572	*501	-	*695	*609	-
Stage 2	-	-	-	-	-	-	*695	*609	-	*572	*501	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*1102	-	-	*907	-	-	*119	*51	*607	*178	*58	*737
Mov Cap-2 Maneuver	-	-	-	-	-	-	*326	*263	-	*351	*269	-
Stage 1	-	-	-	-	-	-	*555	*486	-	*674	*603	-
Stage 2	-	-	-	-	-	-	*679	*603	-	*541	*486	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			17.3			14.3		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306 * 1102	-	-	* 907	-	-	-	404
HCM Lane V/C Ratio	0.04 0.03	-	-	0.009	-	-	-	0.043
HCM Control Delay (s)	17.3 8.4	-	-	9	-	-	-	14.3
HCM Lane LOS	C A	-	-	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1 0.1	-	-	0	-	-	-	0.1

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

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1113	2	12	1302	26	1	0	5	57	0	69
Future Vol, veh/h	15	1113	2	12	1302	26	1	0	5	57	0	69
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	150	-	150	150	-	100	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1210	2	13	1415	28	1	0	5	62	0	75
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	1443	0	0	1212	0	0	1976	2711	605	2078	2685	708
Stage 1	-	-	-	-	-	-	1242	1242	-	1441	1441	-
Stage 2	-	-	-	-	-	-	734	1469	-	637	1244	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*790	-	-	*907	-	-	*138	*16	*607	*95	*17	*528
Stage 1	-	-	-	-	-	-	*572	*501	-	*498	*437	-
Stage 2	-	-	-	-	-	-	*498	*437	-	*572	*501	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*790	-	-	*907	-	-	*116	*15	*607	*92	*17	*528
Mov Cap-2 Maneuver	-	-	-	-	-	-	*266	*212	-	*276	*215	-
Stage 1	-	-	-	-	-	-	*560	*491	-	*488	*431	-
Stage 2	-	-	-	-	-	-	*421	*431	-	*555	*491	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.1		0.1			12.3			20.1			
HCM LOS						B			C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	500	* 790	-	-	* 907	-	-	374				
HCM Lane V/C Ratio	0.013	0.021	-	-	0.014	-	-	0.366				
HCM Control Delay (s)	12.3	9.7	-	-	9	-	-	20.1				
HCM Lane LOS	B	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.6				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Timings

4: Mineral Avenue & Mineral Place

2045 Total AM

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1287	92	63	970	53	79	9	8	3
Future Volume (vph)	32	1287	92	63	970	53	79	9	8	3
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	79.0	79.0	14.0	80.0	80.0	27.0	27.0	27.0	27.0
Total Split (%)	10.8%	65.8%	65.8%	11.7%	66.7%	66.7%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 83 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place

					
Ø1	Ø2 (R)		Ø4		
13 s	80 s		27 s		
					
Ø5	Ø6 (R)		Ø8		
14 s	79 s		27 s		

HCM 6th Signalized Intersection Summary

2045 Total AM

4: Mineral Avenue & Mineral Place

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1287	92	63	970	53	79	9	50	8	3	6
Future Volume (veh/h)	32	1287	92	63	970	53	79	9	50	8	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1327	95	65	1000	55	81	9	52	8	3	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	507	2640	1178	406	2672	1192	167	17	97	68	29	29
Arrive On Green	0.06	1.00	1.00	0.07	1.00	1.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1406	239	1382	340	411	409
Grp Volume(v), veh/h	33	1327	95	65	1000	55	81	0	61	17	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1406	0	1622	1159	0	0
Q Serve(g_s), s	0.5	0.0	0.0	1.0	0.0	0.0	1.7	0.0	4.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.0	0.0	0.0	6.1	0.0	4.4	4.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	0.47		0.35
Lane Grp Cap(c), veh/h	507	2640	1178	406	2672	1192	167	0	114	125	0	0
V/C Ratio(X)	0.07	0.50	0.08	0.16	0.37	0.05	0.49	0.00	0.54	0.14	0.00	0.00
Avail Cap(c_a), veh/h	561	2640	1178	459	2672	1192	314	0	284	282	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.1	0.0	0.0	2.9	0.0	0.0	54.6	0.0	53.9	52.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.2	0.4	0.1	2.2	0.0	3.9	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.0	0.3	0.1	0.0	2.5	0.0	1.9	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.2	0.5	0.1	3.1	0.4	0.1	56.8	0.0	57.8	52.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E	A	E	D	A	A
Approach Vol, veh/h	1455				1120				142			
Approach Delay, s/veh	0.5				0.5				57.2			
Approach LOS	A				A				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	96.2		14.4	10.4	95.2		14.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	74.0		21.0	8.0	73.0		21.0				
Max Q Clear Time (g_c+l1), s	2.5	2.0		8.1	3.0	2.0		6.4				
Green Ext Time (p_c), s	0.0	9.9		0.4	0.0	16.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	3.8											
HCM 6th LOS	A											

Timings

4: Mineral Avenue & Mineral Place

2045 Total PM

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	15	1269	133	118	1435	26	138	0	57	0
Future Volume (vph)	15	1269	133	118	1435	26	138	0	57	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	72.0	72.0	16.0	77.0	77.0	32.0	32.0	32.0	32.0
Total Split (%)	9.2%	60.0%	60.0%	13.3%	64.2%	64.2%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place

					
Ø1	Ø2 (R)			Ø4	
11 s	77 s			32 s	
					
Ø5	Ø6 (R)			Ø8	
16 s	72 s			32 s	

HCM 6th Signalized Intersection Summary

2045 Total PM

4: Mineral Avenue & Mineral Place

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1269	133	118	1435	26	138	0	113	57	0	69
Future Volume (veh/h)	15	1269	133	118	1435	26	138	0	113	57	0	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	1379	145	128	1560	28	150	0	123	62	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	2242	1000	353	2334	1041	235	0	279	112	16	102
Arrive On Green	0.03	1.00	1.00	0.09	1.00	1.00	0.18	0.00	0.18	0.18	0.00	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1325	0	1585	390	88	579
Grp Volume(v), veh/h	16	1379	145	128	1560	28	150	0	123	137	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1325	0	1585	1058	0	0
Q Serve(g_s), s	0.4	0.0	0.0	3.1	0.0	0.0	2.0	0.0	8.3	8.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	3.1	0.0	0.0	18.6	0.0	8.3	16.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.45		0.55
Lane Grp Cap(c), veh/h	293	2242	1000	353	2334	1041	235	0	279	230	0	0
V/C Ratio(X)	0.05	0.62	0.14	0.36	0.67	0.03	0.64	0.00	0.44	0.60	0.00	0.00
Avail Cap(c_a), veh/h	337	2242	1000	424	2334	1041	289	0	343	288	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	6.6	0.0	0.0	48.8	0.0	44.2	48.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.2	0.5	1.2	0.0	3.3	0.0	1.1	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.1	1.1	0.4	0.0	4.6	0.0	3.4	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	0.9	0.2	7.1	1.2	0.0	52.0	0.0	45.3	51.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h	1540				1716				273		137	
Approach Delay, s/veh	0.9				1.6				49.0		51.2	
Approach LOS	A				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	84.8		27.1	11.2	81.7		27.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	71.0		26.0	10.0	66.0		26.0				
Max Q Clear Time (g_c+l1), s	2.4	2.0		20.6	5.1	2.0		18.5				
Green Ext Time (p_c), s	0.0	21.3		0.5	0.1	17.6		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	6.7											
HCM 6th LOS	A											

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	767	1	2	553	52	1	0	0	25	0	31
Future Vol, veh/h	40	767	1	2	553	52	1	0	0	25	0	31
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	150	-	150	150	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	799	1	2	576	54	1	0	0	26	0	32
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	630	0	0	800	0	0	1175	1517	400	1064	1464	288
Stage 1	-	-	-	-	-	-	883	883	-	580	580	-
Stage 2	-	-	-	-	-	-	292	634	-	484	884	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1255	-	-	*1141	-	-	*516	*418	*763	*516	*451	*867
Stage 1	-	-	-	-	-	-	*719	*630	-	*817	*717	-
Stage 2	-	-	-	-	-	-	*817	*686	-	*719	*630	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1255	-	-	*1141	-	-	*483	*403	*763	*502	*436	*867
Mov Cap-2 Maneuver	-	-	-	-	-	-	*548	*469	-	*563	*495	-
Stage 1	-	-	-	-	-	-	*695	*610	-	*790	*715	-
Stage 2	-	-	-	-	-	-	*786	*685	-	*695	*610	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0			11.6			10.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	548	1255	-	-	* 1141	-	-	699				
HCM Lane V/C Ratio	0.002	0.033	-	-	0.002	-	-	0.083				
HCM Control Delay (s)	11.6	8	-	-	8.2	-	-	10.6				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.3				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	832	1	0	882	30	0	0	2	31	0	95
Future Vol, veh/h	27	832	1	0	882	30	0	0	2	31	0	95
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	150	-	150	150	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	885	1	0	938	32	0	0	2	33	0	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	970	0	0	886	0	0	1412	1913	443	1439	1882	469
Stage 1	-	-	-	-	-	-	943	943	-	938	938	-
Stage 2	-	-	-	-	-	-	469	970	-	501	944	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1063	-	-	*1102	-	-	*344	*301	*737	*344	*301	*711
Stage 1	-	-	-	-	-	-	*695	*609	-	*670	*587	-
Stage 2	-	-	-	-	-	-	*670	*587	-	*695	*609	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*1063	-	-	*1102	-	-	*289	*293	*737	*335	*293	*711
Mov Cap-2 Maneuver	-	-	-	-	-	-	*405	*396	-	*455	*403	-
Stage 1	-	-	-	-	-	-	*676	*592	-	*652	*587	-
Stage 2	-	-	-	-	-	-	*575	*587	-	*674	*592	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	9.9	12.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	737	* 1063	-	-	* 1102	-	-	625
HCM Lane V/C Ratio	0.003	0.027	-	-	-	-	-	0.214
HCM Control Delay (s)	9.9	8.5	-	-	0	-	-	12.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.8

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

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	1064	1	2	804	58	1	0	0	28	0	38
Future Vol, veh/h	47	1064	1	2	804	58	1	0	0	28	0	38
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	150	-	150	150	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	1108	1	2	838	60	1	0	0	29	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	898	0	0	1109	0	0	1629	2108	554	1494	2049	419
Stage 1	-	-	-	-	-	-	1206	1206	-	842	842	-
Stage 2	-	-	-	-	-	-	423	902	-	652	1207	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1108	-	-	*963	-	-	*313	*244	*644	*313	*274	*771
Stage 1	-	-	-	-	-	-	*607	*532	-	*727	*638	-
Stage 2	-	-	-	-	-	-	*727	*605	-	*607	*532	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	1108	-	-	*963	-	-	*287	*233	*644	*302	*262	*771
Mov Cap-2 Maneuver	-	-	-	-	-	-	*408	*348	-	*424	*374	-
Stage 1	-	-	-	-	-	-	*580	*509	-	*695	*636	-
Stage 2	-	-	-	-	-	-	*688	*604	-	*580	*509	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	13.8	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	408	1108	-	-	* 963	-	-	572
HCM Lane V/C Ratio	0.003	0.044	-	-	0.002	-	-	0.12
HCM Control Delay (s)	13.8	8.4	-	-	8.7	-	-	12.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.4

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

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	1062	1	0	1156	32	0	0	2	33	0	108
Future Vol, veh/h	37	1062	1	0	1156	32	0	0	2	33	0	108
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	150	-	150	150	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	1130	1	0	1230	34	0	0	2	35	0	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1264	0	0	1131	0	0	1823	2472	565	1873	2439	615
Stage 1	-	-	-	-	-	-	1208	1208	-	1230	1230	-
Stage 2	-	-	-	-	-	-	615	1264	-	643	1209	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*907	-	-	*946	-	-	*147	*129	*633	*147	*129	*607
Stage 1	-	-	-	-	-	-	*596	*523	-	*572	*501	-
Stage 2	-	-	-	-	-	-	*572	*501	-	*596	*523	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*907	-	-	*946	-	-	*115	*123	*633	*142	*123	*607
Mov Cap-2 Maneuver	-	-	-	-	-	-	*273	*275	-	*319	*285	-
Stage 1	-	-	-	-	-	-	*571	*500	-	*547	*501	-
Stage 2	-	-	-	-	-	-	*464	*501	-	*569	*500	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	10.7	15.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	633	* 907	-	-	* 946	-	-	501
HCM Lane V/C Ratio	0.003	0.043	-	-	-	-	-	0.299
HCM Control Delay (s)	10.7	9.1	-	-	0	-	-	15.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.2

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

Timings
5: Mineral Avenue & Elati Street

2028 Total AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	1143	94	148	898	58	88	3	28	5
Future Volume (vph)	47	1143	94	148	898	58	88	3	28	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	71.0	71.0	21.0	81.0	81.0	28.0	28.0	28.0	28.0
Total Split (%)	9.2%	59.2%	59.2%	17.5%	67.5%	67.5%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 104 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street

		
Ø1	Ø2 (R)	Ø4
11 s	31 s	28 s
		
Ø5	Ø6 (R)	Ø8
21 s	71 s	28 s

HCM 6th Signalized Intersection Summary

2028 Total AM

5: Mineral Avenue & Elati Street

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1143	94	148	898	58	88	3	134	28	5	38
Future Volume (veh/h)	47	1143	94	148	898	58	88	3	134	28	5	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	1191	98	154	935	60	92	3	140	29	5	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	504	2414	1077	433	2458	1096	179	4	194	64	24	53
Arrive On Green	0.07	1.00	1.00	0.09	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1361	33	1557	174	188	427
Grp Volume(v), veh/h	49	1191	98	154	935	60	92	0	143	74	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1361	0	1590	789	0	0
Q Serve(g_s), s	1.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	10.4	2.5	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	0.0	3.3	0.0	0.0	12.2	0.0	10.4	12.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.39		0.54
Lane Grp Cap(c), veh/h	504	2414	1077	433	2458	1096	179	0	199	140	0	0
V/C Ratio(X)	0.10	0.49	0.09	0.36	0.38	0.05	0.51	0.00	0.72	0.53	0.00	0.00
Avail Cap(c_a), veh/h	519	2414	1077	574	2458	1096	258	0	292	225	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	0.0	0.0	4.7	0.0	0.0	51.3	0.0	50.5	50.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.1	0.5	0.4	0.1	2.3	0.0	4.8	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.0	1.0	0.1	0.0	2.8	0.0	4.4	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	0.6	0.1	5.2	0.4	0.1	53.6	0.0	55.3	53.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	E	D	A	A
Approach Vol, veh/h	1338			1149			235			74		
Approach Delay, s/veh	0.7			1.0			54.6			53.8		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	89.0		21.0	11.5	87.5		21.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	75.0		22.0	15.0	65.0		22.0				
Max Q Clear Time (g_c+I1), s	3.0	2.0		14.2	5.3	2.0		14.8				
Green Ext Time (p_c), s	0.0	8.0		0.6	0.3	11.9		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				6.8								
HCM 6th LOS				A								

Timings
5: Mineral Avenue & Elati Street

2028 Total PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	37	1215	112	251	1289	32	106	5	33	5
Future Volume (vph)	37	1215	112	251	1289	32	106	5	33	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	63.0	63.0	26.0	78.0	78.0	31.0	31.0	31.0	31.0
Total Split (%)	9.2%	52.5%	52.5%	21.7%	65.0%	65.0%	25.8%	25.8%	25.8%	25.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	Max	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

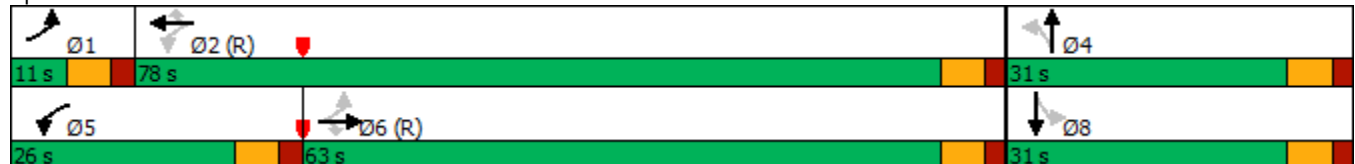
Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street



HCM 6th Signalized Intersection Summary

2028 Total PM

5: Mineral Avenue & Elati Street

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1215	112	251	1289	32	106	5	253	33	5	108
Future Volume (veh/h)	37	1215	112	251	1289	32	106	5	253	33	5	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1293	119	267	1371	34	113	5	269	35	5	115
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1688	753	512	2173	969	166	6	325	51	25	114
Arrive On Green	0.06	0.95	0.95	0.22	0.81	0.81	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1272	29	1560	68	122	546
Grp Volume(v), veh/h	39	1293	119	267	1371	34	113	0	274	155	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1272	0	1589	736	0	0
Q Serve(g_s), s	1.3	8.0	0.5	7.2	17.8	0.5	0.0	0.0	19.8	5.2	0.0	0.0
Cycle Q Clear(g_c), s	1.3	8.0	0.5	7.2	17.8	0.5	25.0	0.0	19.8	25.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.23		0.74
Lane Grp Cap(c), veh/h	292	1688	753	512	2173	969	166	0	331	190	0	0
V/C Ratio(X)	0.13	0.77	0.16	0.52	0.63	0.04	0.68	0.00	0.83	0.81	0.00	0.00
Avail Cap(c_a), veh/h	312	1688	753	512	2173	969	166	0	331	190	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.5	1.8	1.6	8.8	6.0	4.4	48.3	0.0	45.4	46.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.7	0.3	2.9	1.1	0.1	10.8	0.0	15.8	23.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.6	0.2	2.9	4.4	0.2	3.9	0.0	9.2	5.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.7	4.4	1.9	11.7	7.1	4.5	59.1	0.0	61.2	69.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	E	A	E	E	A	A
Approach Vol, veh/h	1451				1672				387		155	
Approach Delay, s/veh	4.5				7.8				60.6		69.4	
Approach LOS	A				A				E		E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	79.4		31.0	26.0	63.0		31.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	72.0		25.0	20.0	57.0		25.0				
Max Q Clear Time (g_c+l1), s	3.3	19.8		27.0	9.2	10.0		27.0				
Green Ext Time (p_c), s	0.0	15.9		0.0	0.6	14.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	14.7											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	1137	1	2	860	58	1	0	0	28	0	38
Future Vol, veh/h	47	1137	1	2	860	58	1	0	0	28	0	38
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	150	-	150	150	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	1184	1	2	896	60	1	0	0	29	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	956	0	0	1185	0	0	1734	2242	592	1590	2183	448
Stage 1	-	-	-	-	-	-	1282	1282	-	900	900	-
Stage 2	-	-	-	-	-	-	452	960	-	690	1283	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1102	-	-	*907	-	-	*245	*215	*607	*245	*215	*737
Stage 1	-	-	-	-	-	-	*572	*501	-	*695	*609	-
Stage 2	-	-	-	-	-	-	*695	*608	-	*572	*501	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*1102	-	-	*907	-	-	*224	*205	*607	*237	*205	*737
Mov Cap-2 Maneuver	-	-	-	-	-	-	*364	*328	-	*379	*335	-
Stage 1	-	-	-	-	-	-	*547	*479	-	*664	*608	-
Stage 2	-	-	-	-	-	-	*656	*607	-	*546	*479	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	14.9	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	364 * 1102	-	-	* 907	-	-	-	526
HCM Lane V/C Ratio	0.003 0.044	-	-	0.002	-	-	-	0.131
HCM Control Delay (s)	14.9 8.4	-	-	9	-	-	-	12.9
HCM Lane LOS	B A	-	-	A	-	-	-	B
HCM 95th %tile Q(veh)	0 0.1	-	-	0	-	-	-	0.4

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

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	1142	1	0	1240	32	0	0	2	33	0	108
Future Vol, veh/h	37	1142	1	0	1240	32	0	0	2	33	0	108
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	150	-	150	150	-	150	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	1215	1	0	1319	34	0	0	2	35	0	115

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1353	0	0	1216	0	0	1953	2646	608	2005	2613	660
Stage 1	-	-	-	-	-	-	1293	1293	-	1319	1319	-
Stage 2	-	-	-	-	-	-	660	1353	-	686	1294	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*829	-	-	*907	-	-	*74	*64	*607	*74	*64	*554
Stage 1	-	-	-	-	-	-	*572	*501	-	*523	*458	-
Stage 2	-	-	-	-	-	-	*523	*458	-	*572	*501	-
Platoon blocked, %	1	-	-	1	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*829	-	-	*907	-	-	*56	*61	*607	*71	*61	*554
Mov Cap-2 Maneuver	-	-	-	-	-	-	*227	*232	-	*269	*241	-
Stage 1	-	-	-	-	-	-	*545	*478	-	*498	*458	-
Stage 2	-	-	-	-	-	-	*414	*458	-	*543	*478	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	17.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	607	* 829	-	-	* 907	-	-	444
HCM Lane V/C Ratio	0.004	0.047	-	-	-	-	-	0.338
HCM Control Delay (s)	11	9.6	-	-	0	-	-	17.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.5

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

Timings
5: Mineral Avenue & Elati Street

2045 Total AM

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	1216	94	148	954	58	88	3	28	5
Future Volume (vph)	47	1216	94	148	954	58	88	3	28	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	73.0	73.0	20.0	82.0	82.0	27.0	27.0	27.0	27.0
Total Split (%)	9.2%	60.8%	60.8%	16.7%	68.3%	68.3%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

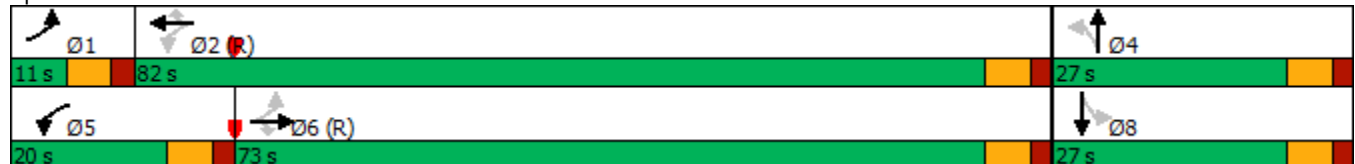
Actuated Cycle Length: 120

Offset: 104 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street



HCM 6th Signalized Intersection Summary

2045 Total AM

5: Mineral Avenue & Elati Street

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1216	94	148	954	58	88	3	134	28	5	38
Future Volume (veh/h)	47	1216	94	148	954	58	88	3	134	28	5	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	1267	98	154	994	60	92	3	140	29	5	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	2415	1077	412	2458	1096	179	4	194	63	24	53
Arrive On Green	0.07	1.00	1.00	0.09	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1361	33	1557	174	188	426
Grp Volume(v), veh/h	49	1267	98	154	994	60	92	0	143	74	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1361	0	1590	788	0	0
Q Serve(g_s), s	1.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	10.4	2.5	0.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0	0.0	3.3	0.0	0.0	12.2	0.0	10.4	12.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.39		0.54
Lane Grp Cap(c), veh/h	483	2415	1077	412	2458	1096	179	0	198	140	0	0
V/C Ratio(X)	0.10	0.52	0.09	0.37	0.40	0.05	0.52	0.00	0.72	0.53	0.00	0.00
Avail Cap(c_a), veh/h	498	2415	1077	538	2458	1096	247	0	278	213	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	0.0	0.0	4.7	0.0	0.0	51.3	0.0	50.5	50.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.1	0.5	0.5	0.1	2.3	0.0	5.3	3.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.0	1.1	0.2	0.0	2.8	0.0	4.4	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	0.7	0.1	5.3	0.5	0.1	53.6	0.0	55.8	53.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	E	D	A	A
Approach Vol, veh/h	1414				1208				235		74	
Approach Delay, s/veh	0.8				1.1				55.0		53.9	
Approach LOS	A				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	89.0		21.0	11.5	87.5		21.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	76.0		21.0	14.0	67.0		21.0				
Max Q Clear Time (g_c+l1), s	3.0	2.0		14.2	5.3	2.0		14.8				
Green Ext Time (p_c), s	0.0	9.8		0.6	0.2	14.8		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	6.6											
HCM 6th LOS	A											

Timings
5: Mineral Avenue & Elati Street

2045 Total PM

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	37	1295	112	251	1373	32	106	5	33	5
Future Volume (vph)	37	1295	112	251	1373	32	106	5	33	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	64.0	64.0	27.0	80.0	80.0	29.0	29.0	29.0	29.0
Total Split (%)	9.2%	53.3%	53.3%	22.5%	66.7%	66.7%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	Max	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

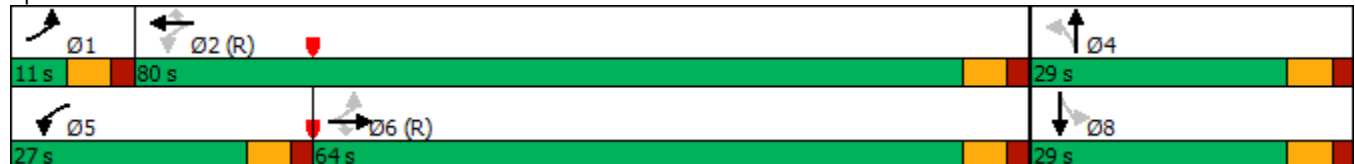
Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street



HCM 6th Signalized Intersection Summary

5: Mineral Avenue & Elati Street

2045 Total PM

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1295	112	251	1373	32	106	5	253	33	5	108
Future Volume (veh/h)	37	1295	112	251	1373	32	106	5	253	33	5	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1378	119	267	1461	34	113	5	269	35	5	115
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	1718	766	521	2232	995	161	6	299	44	24	91
Arrive On Green	0.06	0.97	0.97	0.23	0.84	0.84	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1272	29	1560	40	126	477
Grp Volume(v), veh/h	39	1378	119	267	1461	34	113	0	274	155	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1272	0	1589	642	0	0
Q Serve(g_s), s	1.3	6.9	0.4	6.8	17.9	0.4	0.0	0.0	20.2	2.8	0.0	0.0
Cycle Q Clear(g_c), s	1.3	6.9	0.4	6.8	17.9	0.4	23.0	0.0	20.2	23.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.23		0.74
Lane Grp Cap(c), veh/h	282	1718	766	521	2232	995	161	0	305	160	0	0
V/C Ratio(X)	0.14	0.80	0.16	0.51	0.65	0.03	0.70	0.00	0.90	0.97	0.00	0.00
Avail Cap(c_a), veh/h	302	1718	766	521	2232	995	161	0	305	160	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.1	1.1	1.0	8.0	5.2	3.7	49.8	0.0	47.4	48.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	3.0	0.3	2.6	1.1	0.0	13.0	0.0	27.6	61.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	0.2	2.7	4.1	0.2	4.0	0.0	10.3	7.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	4.2	1.4	10.6	6.3	3.8	62.8	0.0	75.0	110.2	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	E	A	E	F	A	A
Approach Vol, veh/h	1536				1762				387			
Approach Delay, s/veh	4.2				6.9				71.4			
Approach LOS	A				A				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	81.4		29.0	27.0	64.0		29.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	74.0		23.0	21.0	58.0		23.0				
Max Q Clear Time (g_c+l1), s	3.3	19.9		25.0	8.8	8.9		25.0				
Green Ext Time (p_c), s	0.0	17.9		0.0	0.6	16.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	16.5											
HCM 6th LOS	B											

Timings
6: Southpark Terrace/Mineral Court & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	3	871	37	83	605	12	25	1	42	8
Future Volume (vph)	3	871	37	83	605	12	25	1	42	8
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	15.0	73.0	73.0	18.0	76.0	76.0	29.0	29.0	29.0	29.0
Total Split (%)	12.5%	60.8%	60.8%	15.0%	63.3%	63.3%	24.2%	24.2%	24.2%	24.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

								
Ø1	Ø2 (R)		Ø3	Ø4		Ø5	Ø6 (R)	Ø7
15 s	76 s		18 s	73 s		29 s	29 s	29 s

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	3	871	37	83	605	12	25	1	27	42	8	15
Future Volume (veh/h)	3	871	37	83	605	12	25	1	27	42	8	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	907	39	86	630	12	26	1	28	44	8	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	654	2648	1181	520	2774	1237	132	4	101	126	36	73
Arrive On Green	0.00	0.75	0.75	0.08	1.00	1.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1387	55	1538	1381	557	1113
Grp Volume(v), veh/h	3	907	39	86	630	12	26	0	29	44	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1387	0	1593	1381	0	1670
Q Serve(g_s), s	0.1	10.5	0.8	1.3	0.0	0.0	2.2	0.0	2.1	3.8	0.0	1.6
Cycle Q Clear(g_c), s	0.1	10.5	0.8	1.3	0.0	0.0	3.8	0.0	2.1	5.8	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.67
Lane Grp Cap(c), veh/h	654	2648	1181	520	2774	1237	132	0	104	126	0	109
V/C Ratio(X)	0.00	0.34	0.03	0.17	0.23	0.01	0.20	0.00	0.28	0.35	0.00	0.22
Avail Cap(c_a), veh/h	780	2648	1181	628	2774	1237	307	0	305	301	0	320
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	5.2	4.0	3.3	0.0	0.0	55.0	0.0	53.4	56.2	0.0	53.2
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.1	0.2	0.0	0.7	0.0	1.4	1.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	0.2	0.4	0.1	0.0	0.8	0.0	0.9	1.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.8	5.6	4.0	3.4	0.2	0.0	55.7	0.0	54.8	57.8	0.0	54.2
LnGrp LOS	A	A	A	A	A	A	E	A	D	E	A	D
Approach Vol, veh/h	949			728			55			68		
Approach Delay, s/veh	5.5			0.6			55.2			56.5		
Approach LOS	A			A			E			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	99.7		13.9	10.7	95.4		13.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	9.0	70.0		23.0	12.0	67.0		23.0				
Max Q Clear Time (g_c+l1), s	2.1	2.0		5.8	3.3	12.5		7.8				
Green Ext Time (p_c), s	0.0	5.1		0.1	0.1	8.4		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				7.0								
HCM 6th LOS				A								

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	820	39	82	960	37	57	14	16	2
Future Volume (vph)	20	820	39	82	960	37	57	14	16	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	14.0	72.0	72.0	18.0	76.0	76.0	30.0	30.0	30.0	30.0
Total Split (%)	11.7%	60.0%	60.0%	15.0%	63.3%	63.3%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

					
Ø1	Ø2 (R)			Ø4	
14 s	76 s			30 s	
					
Ø5	Ø6 (R)			Ø8	
18 s	72 s			30 s	

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	820	39	82	960	37	57	14	70	16	2	14
Future Volume (veh/h)	20	820	39	82	960	37	57	14	70	16	2	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	863	41	86	1011	39	60	15	74	17	2	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	489	2587	1154	525	2652	1183	162	23	112	99	16	118
Arrive On Green	0.02	0.73	0.73	0.08	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1396	274	1353	1308	190	1424
Grp Volume(v), veh/h	21	863	41	86	1011	39	60	0	89	17	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1396	0	1627	1308	0	1614
Q Serve(g_s), s	0.4	10.5	0.9	1.4	0.0	0.0	5.0	0.0	6.4	1.5	0.0	1.2
Cycle Q Clear(g_c), s	0.4	10.5	0.9	1.4	0.0	0.0	6.2	0.0	6.4	7.9	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.88
Lane Grp Cap(c), veh/h	489	2587	1154	525	2652	1183	162	0	135	99	0	134
V/C Ratio(X)	0.04	0.33	0.04	0.16	0.38	0.03	0.37	0.00	0.66	0.17	0.00	0.13
Avail Cap(c_a), veh/h	570	2587	1154	633	2652	1183	326	0	325	252	0	323
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	5.9	4.6	3.8	0.0	0.0	53.9	0.0	53.4	57.2	0.0	51.0
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.1	0.4	0.0	1.4	0.0	5.4	0.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.6	0.3	0.4	0.1	0.0	1.8	0.0	2.8	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	6.2	4.6	3.9	0.4	0.0	55.3	0.0	58.8	58.0	0.0	51.4
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	D
Approach Vol, veh/h	925				1136				149			
Approach Delay, s/veh	6.1				0.7				57.4			
Approach LOS	A				A				E			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	95.5		15.9	10.7	93.3		15.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	70.0		24.0	12.0	66.0		24.0				
Max Q Clear Time (g_c+l1), s	2.4	2.0		8.4	3.4	12.5		9.9				
Green Ext Time (p_c), s	0.0	10.0		0.5	0.1	7.8		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	7.5											
HCM 6th LOS	A											

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Background AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	3	1075	37	83	788	12	25	1	42	8
Future Volume (vph)	3	1075	37	83	788	12	25	1	42	8
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	77.0	77.0	16.0	80.0	80.0	27.0	27.0	27.0	27.0
Total Split (%)	10.8%	64.2%	64.2%	13.3%	66.7%	66.7%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

		
Ø1	Ø2 (R)	Ø4
13 s	80 s	27 s
		
Ø5	Ø6 (R)	Ø8
16 s	77 s	27 s

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1075	37	83	788	12	25	1	27	42	8	15
Future Volume (veh/h)	3	1075	37	83	788	12	25	1	27	42	8	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1120	39	86	821	12	26	1	28	44	8	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	558	2649	1181	434	2774	1237	132	4	101	126	36	73
Arrive On Green	0.00	0.75	0.75	0.08	1.00	1.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1387	55	1538	1381	557	1113
Grp Volume(v), veh/h	3	1120	39	86	821	12	26	0	29	44	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1387	0	1593	1381	0	1670
Q Serve(g_s), s	0.1	14.1	0.8	1.3	0.0	0.0	2.2	0.0	2.1	3.8	0.0	1.6
Cycle Q Clear(g_c), s	0.1	14.1	0.8	1.3	0.0	0.0	3.8	0.0	2.1	5.8	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.67
Lane Grp Cap(c), veh/h	558	2649	1181	434	2774	1237	132	0	104	126	0	109
V/C Ratio(X)	0.01	0.42	0.03	0.20	0.30	0.01	0.20	0.00	0.28	0.35	0.00	0.22
Avail Cap(c_a), veh/h	655	2649	1181	513	2774	1237	284	0	279	278	0	292
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	5.7	4.0	3.7	0.0	0.0	55.0	0.0	53.4	56.2	0.0	53.2
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.2	0.3	0.0	0.7	0.0	1.4	1.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	0.2	0.3	0.1	0.0	0.8	0.0	0.9	1.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.8	6.2	4.0	4.0	0.3	0.0	55.7	0.0	54.8	57.8	0.0	54.2
LnGrp LOS	A	A	A	A	A	A	E	A	D	E	A	D
Approach Vol, veh/h	1162		919				55				68	
Approach Delay, s/veh	6.1		0.6				55.2				56.5	
Approach LOS	A		A				E				E	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	6.5	99.7	13.8		10.7	95.4	13.8					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	7.0	74.0	21.0		10.0	71.0	21.0					
Max Q Clear Time (g_c+I1), s	2.1	2.0	5.8		3.3	16.1	7.8					
Green Ext Time (p_c), s	0.0	6.5	0.1		0.1	10.3	0.1					
Intersection Summary												
HCM 6th Ctrl Delay	6.6											
HCM 6th LOS	A											

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Background PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	999	39	82	1181	37	57	14	16	2
Future Volume (vph)	20	999	39	82	1181	37	57	14	16	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	78.0	78.0	14.0	79.0	79.0	28.0	28.0	28.0	28.0
Total Split (%)	10.8%	65.0%	65.0%	11.7%	65.8%	65.8%	23.3%	23.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

					
Ø1	Ø2 (R)				Ø4
13 s	79 s				28 s
					
Ø5	Ø6 (R)				Ø8
14 s	78 s				28 s

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	999	39	82	1181	37	57	14	70	16	2	14
Future Volume (veh/h)	20	999	39	82	1181	37	57	14	70	16	2	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	1052	41	86	1243	39	60	15	74	17	2	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	2587	1154	447	2652	1183	162	23	112	99	16	118
Arrive On Green	0.02	0.73	0.73	0.08	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1396	274	1353	1308	190	1424
Grp Volume(v), veh/h	21	1052	41	86	1243	39	60	0	89	17	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1396	0	1627	1308	0	1614
Q Serve(g_s), s	0.4	13.7	0.9	1.4	0.0	0.0	5.0	0.0	6.4	1.5	0.0	1.2
Cycle Q Clear(g_c), s	0.4	13.7	0.9	1.4	0.0	0.0	6.2	0.0	6.4	7.9	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.88
Lane Grp Cap(c), veh/h	411	2587	1154	447	2652	1183	162	0	135	99	0	134
V/C Ratio(X)	0.05	0.41	0.04	0.19	0.47	0.03	0.37	0.00	0.66	0.17	0.00	0.13
Avail Cap(c_a), veh/h	478	2587	1154	495	2652	1183	302	0	298	230	0	296
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	6.3	4.6	4.2	0.0	0.0	53.9	0.0	53.4	57.2	0.0	51.0
Incr Delay (d2), s/veh	0.1	0.5	0.1	0.2	0.5	0.0	1.4	0.0	5.4	0.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.8	0.3	0.4	0.2	0.0	1.8	0.0	2.8	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	6.8	4.6	4.4	0.5	0.0	55.3	0.0	58.8	58.1	0.0	51.4
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	D
Approach Vol, veh/h	1114			1368			149			34		
Approach Delay, s/veh	6.7			0.7			57.4			54.7		
Approach LOS	A			A			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	95.6		15.9	10.7	93.4		15.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	73.0		22.0	8.0	72.0		22.0				
Max Q Clear Time (g_c+l1), s	2.4	2.0		8.4	3.4	15.7		9.9				
Green Ext Time (p_c), s	0.0	14.0		0.5	0.1	10.5		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	7.1											
HCM 6th LOS	A											

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Total AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	3	1256	69	169	990	12	64	1	42	8
Future Volume (vph)	3	1256	69	169	990	12	64	1	42	8
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	72.0	72.0	22.0	83.0	83.0	26.0	26.0	26.0	26.0
Total Split (%)	9.2%	60.0%	60.0%	18.3%	69.2%	69.2%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 119 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

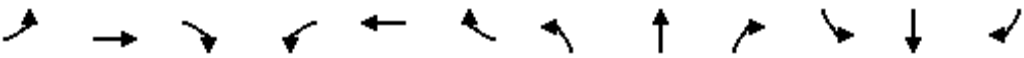
Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue



HCM 6th Signalized Intersection Summary 6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1256	69	169	990	12	64	1	124	42	8	15
Future Volume (veh/h)	3	1256	69	169	990	12	64	1	124	42	8	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1308	72	176	1031	12	67	1	129	44	8	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	430	2383	1063	413	2547	1136	222	2	203	125	72	144
Arrive On Green	0.01	1.00	1.00	0.10	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1387	12	1575	1260	557	1113
Grp Volume(v), veh/h	3	1308	72	176	1031	12	67	0	130	44	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1387	0	1587	1260	0	1670
Q Serve(g_s), s	0.1	0.0	0.0	3.7	0.0	0.0	5.4	0.0	9.3	4.1	0.0	1.5
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.7	0.0	0.0	6.9	0.0	9.3	13.4	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.67
Lane Grp Cap(c), veh/h	430	2383	1063	413	2547	1136	222	0	205	125	0	216
V/C Ratio(X)	0.01	0.55	0.07	0.43	0.40	0.01	0.30	0.00	0.63	0.35	0.00	0.11
Avail Cap(c_a), veh/h	497	2383	1063	561	2547	1136	274	0	264	172	0	278
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	0.0	0.0	4.5	0.0	0.0	49.2	0.0	49.6	55.9	0.0	46.2
Incr Delay (d2), s/veh	0.0	0.8	0.1	0.6	0.4	0.0	0.8	0.0	3.2	1.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	1.1	0.2	0.0	1.9	0.0	3.9	1.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.8	0.1	5.2	0.4	0.0	50.0	0.0	52.8	57.6	0.0	46.4
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h	1383			1219			197			68		
Approach Delay, s/veh	0.8			1.1			51.8			53.7		
Approach LOS	A			A			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	92.0		21.5	12.0	86.5		21.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	77.0		20.0	16.0	66.0		20.0				
Max Q Clear Time (g_c+l1), s	2.1	2.0		11.3	5.7	2.0		15.4				
Green Ext Time (p_c), s	0.0	9.1		0.6	0.3	13.8		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				5.7								
HCM 6th LOS				A								

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Total PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	1357	84	184	1536	37	84	14	16	2
Future Volume (vph)	20	1357	84	184	1536	37	84	14	16	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	66.0	66.0	28.0	83.0	83.0	26.0	26.0	26.0	26.0
Total Split (%)	9.2%	55.0%	55.0%	23.3%	69.2%	69.2%	21.7%	21.7%	21.7%	21.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

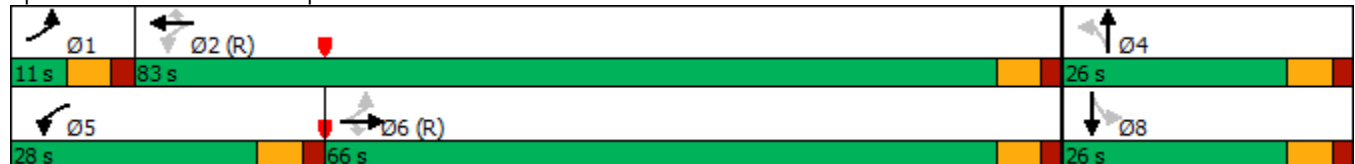
Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue



HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2028 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1357	84	184	1536	37	84	14	151	16	2	14
Future Volume (veh/h)	20	1357	84	184	1536	37	84	14	151	16	2	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	1428	88	194	1617	39	88	15	159	17	2	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	2340	1044	386	2464	1099	236	19	199	97	26	193
Arrive On Green	0.04	1.00	1.00	0.07	0.92	0.92	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1396	138	1468	1211	190	1424
Grp Volume(v), veh/h	21	1428	88	194	1617	39	88	0	174	17	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1396	0	1606	1211	0	1614
Q Serve(g_s), s	0.5	0.0	0.0	4.3	10.8	0.2	7.1	0.0	12.6	1.7	0.0	1.1
Cycle Q Clear(g_c), s	0.5	0.0	0.0	4.3	10.8	0.2	8.2	0.0	12.6	14.3	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.88
Lane Grp Cap(c), veh/h	279	2340	1044	386	2464	1099	236	0	218	97	0	219
V/C Ratio(X)	0.08	0.61	0.08	0.50	0.66	0.04	0.37	0.00	0.80	0.18	0.00	0.08
Avail Cap(c_a), veh/h	316	2340	1044	613	2464	1099	280	0	268	135	0	269
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.55	0.55	0.55	0.67	0.67	0.67	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	0.0	0.0	5.3	1.8	1.4	48.9	0.0	50.3	57.2	0.0	45.3
Incr Delay (d2), s/veh	0.1	0.7	0.1	0.7	0.9	0.0	1.0	0.0	12.9	0.8	0.0	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	0.2	0.2	0.0	1.5	2.0	0.1	2.5	0.0	5.8	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.7	0.1	6.0	2.8	1.5	49.8	0.0	63.2	58.0	0.0	45.5
LnGrp LOS	A	A	A	A	A	A	D	A	E	E	A	D
Approach Vol, veh/h		1537			1850			262			34	
Approach Delay, s/veh		0.7			3.1			58.7			51.7	
Approach LOS		A			A			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	89.2		22.3	12.7	85.0		22.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	77.0		20.0	22.0	60.0		20.0				
Max Q Clear Time (g_c+l1), s	2.5	12.8		14.6	6.3	2.0		16.3				
Green Ext Time (p_c), s	0.0	22.6		0.6	0.5	17.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Background AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	3	1149	41	93	843	13	28	1	47	9
Future Volume (vph)	3	1149	41	93	843	13	28	1	47	9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	75.0	75.0	18.0	80.0	80.0	27.0	27.0	27.0	27.0
Total Split (%)	10.8%	62.5%	62.5%	15.0%	66.7%	66.7%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

					
Ø1	Ø2 (R)			Ø4	
13 s	80 s			27 s	
					
Ø5	Ø6 (R)			Ø8	
18 s	75 s			27 s	

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1149	41	93	843	13	28	1	30	47	9	17
Future Volume (veh/h)	3	1149	41	93	843	13	28	1	30	47	9	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1197	43	97	878	14	29	1	31	49	9	18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	528	2625	1171	403	2754	1228	137	4	110	132	40	79
Arrive On Green	0.00	0.74	0.74	0.08	1.00	1.00	0.07	0.07	0.07	0.07	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1383	50	1543	1377	557	1113
Grp Volume(v), veh/h	3	1197	43	97	878	14	29	0	32	49	0	27
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1383	0	1593	1377	0	1670
Q Serve(g_s), s	0.1	15.9	0.9	1.5	0.0	0.0	2.4	0.0	2.3	4.2	0.0	1.8
Cycle Q Clear(g_c), s	0.1	15.9	0.9	1.5	0.0	0.0	4.3	0.0	2.3	6.5	0.0	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.67
Lane Grp Cap(c), veh/h	528	2625	1171	403	2754	1228	137	0	113	132	0	119
V/C Ratio(X)	0.01	0.46	0.04	0.24	0.32	0.01	0.21	0.00	0.28	0.37	0.00	0.23
Avail Cap(c_a), veh/h	625	2625	1171	510	2754	1228	281	0	279	275	0	292
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.0	6.2	4.2	4.2	0.0	0.0	54.6	0.0	52.8	55.9	0.0	52.6
Incr Delay (d2), s/veh	0.0	0.6	0.1	0.3	0.3	0.0	0.8	0.0	1.3	1.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.5	0.3	0.5	0.1	0.0	0.9	0.0	1.0	1.5	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.0	6.7	4.3	4.5	0.3	0.0	55.4	0.0	54.2	57.6	0.0	53.6
LnGrp LOS	A	A	A	A	A	A	E	A	D	E	A	D
Approach Vol, veh/h	1243			989			61			76		
Approach Delay, s/veh	6.7			0.7			54.7			56.2		
Approach LOS	A			A			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	99.0		14.5	10.8	94.7		14.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	74.0		21.0	12.0	69.0		21.0				
Max Q Clear Time (g_c+l1), s	2.1	2.0		6.3	3.5	17.9		8.5				
Green Ext Time (p_c), s	0.0	8.0		0.1	0.1	12.7		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				7.0								
HCM 6th LOS				A								

Timings 6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Background PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	1073	39	82	1268	37	57	14	16	2
Future Volume (vph)	20	1073	39	82	1268	37	57	14	16	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	13.0	74.0	74.0	16.0	77.0	77.0	30.0	30.0	30.0	30.0
Total Split (%)	10.8%	61.7%	61.7%	13.3%	64.2%	64.2%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

			
Ø1	Ø2 (R)		Ø4
13 s	77 s		30 s
			
Ø5	Ø6 (R)		Ø8
16 s	74 s		30 s

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1073	39	82	1268	37	57	14	70	16	2	14
Future Volume (veh/h)	20	1073	39	82	1268	37	57	14	70	16	2	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	1129	41	86	1335	39	60	15	74	17	2	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	2587	1154	418	2652	1183	162	23	112	99	16	118
Arrive On Green	0.02	0.73	0.73	0.08	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1396	274	1353	1308	190	1424
Grp Volume(v), veh/h	21	1129	41	86	1335	39	60	0	89	17	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1396	0	1627	1308	0	1614
Q Serve(g_s), s	0.4	15.2	0.9	1.4	0.0	0.0	5.0	0.0	6.4	1.5	0.0	1.2
Cycle Q Clear(g_c), s	0.4	15.2	0.9	1.4	0.0	0.0	6.2	0.0	6.4	7.9	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.88
Lane Grp Cap(c), veh/h	385	2587	1154	418	2652	1183	162	0	135	99	0	134
V/C Ratio(X)	0.05	0.44	0.04	0.21	0.50	0.03	0.37	0.00	0.66	0.17	0.00	0.13
Avail Cap(c_a), veh/h	451	2587	1154	497	2652	1183	326	0	325	252	0	323
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	6.5	4.6	4.4	0.0	0.0	53.9	0.0	53.4	57.2	0.0	51.0
Incr Delay (d2), s/veh	0.1	0.5	0.1	0.2	0.6	0.0	1.4	0.0	5.4	0.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.3	0.3	0.4	0.2	0.0	1.8	0.0	2.8	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.9	7.0	4.6	4.6	0.6	0.0	55.3	0.0	58.8	58.0	0.0	51.4
LnGrp LOS	A	A	A	A	A	A	E	A	E	E	A	D
Approach Vol, veh/h	1191			1460			149			34		
Approach Delay, s/veh	6.9			0.8			57.4			54.7		
Approach LOS	A			A			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	95.5		15.9	10.7	93.3		15.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	71.0		24.0	10.0	68.0		24.0				
Max Q Clear Time (g_c+l1), s	2.4	2.0		8.4	3.4	17.2		9.9				
Green Ext Time (p_c), s	0.0	15.9		0.5	0.1	11.5		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	7.0											
HCM 6th LOS	A											

Timings
6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Total AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	3	1330	69	169	1045	12	64	1	42	8
Future Volume (vph)	3	1330	69	169	1045	12	64	1	42	8
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	73.0	73.0	22.0	84.0	84.0	25.0	25.0	25.0	25.0
Total Split (%)	9.2%	60.8%	60.8%	18.3%	70.0%	70.0%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

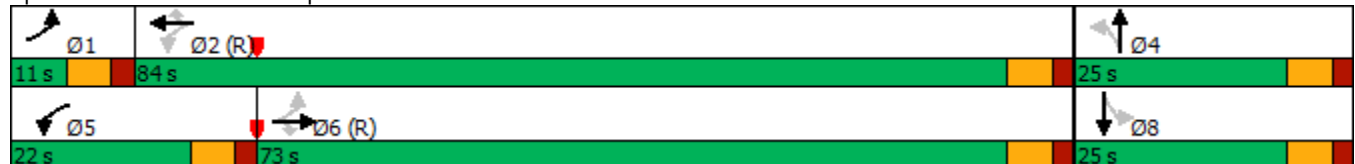
Actuated Cycle Length: 120

Offset: 119 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue



HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Total AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	3	1330	69	169	1045	12	64	1	124	42	8	15
Future Volume (veh/h)	3	1330	69	169	1045	12	64	1	124	42	8	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1385	72	176	1089	12	67	1	129	44	8	16
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	411	2387	1065	393	2548	1136	221	2	203	125	72	144
Arrive On Green	0.01	1.00	1.00	0.07	0.95	0.95	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1387	12	1575	1260	557	1113
Grp Volume(v), veh/h	3	1385	72	176	1089	12	67	0	130	44	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1387	0	1587	1260	0	1670
Q Serve(g_s), s	0.1	0.0	0.0	3.6	2.9	0.0	5.4	0.0	9.3	4.1	0.0	1.5
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.6	2.9	0.0	6.9	0.0	9.3	13.4	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.67
Lane Grp Cap(c), veh/h	411	2387	1065	393	2548	1136	221	0	205	125	0	216
V/C Ratio(X)	0.01	0.58	0.07	0.45	0.43	0.01	0.30	0.00	0.63	0.35	0.00	0.11
Avail Cap(c_a), veh/h	478	2387	1065	542	2548	1136	262	0	251	162	0	264
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.3	0.0	0.0	4.7	0.9	0.8	49.2	0.0	49.6	55.9	0.0	46.2
Incr Delay (d2), s/veh	0.0	0.9	0.1	0.7	0.5	0.0	0.8	0.0	3.6	1.7	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.0	1.2	0.8	0.0	1.9	0.0	3.9	1.4	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	0.9	0.1	5.4	1.3	0.8	50.0	0.0	53.2	57.6	0.0	46.4
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		1460			1277			197			68	
Approach Delay, s/veh		0.8			1.9			52.1			53.7	
Approach LOS		A			A			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	92.0		21.5	11.9	86.6		21.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	78.0		19.0	16.0	67.0		19.0				
Max Q Clear Time (g_c+l1), s	2.1	4.9		11.3	5.6	2.0		15.4				
Green Ext Time (p_c), s	0.0	11.1		0.5	0.3	17.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			A									

Timings

2045 Total PM

6: Southpark Terrace/Mineral Court & Mineral Avenue

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	20	1431	84	184	1623	37	84	14	16	2
Future Volume (vph)	20	1431	84	184	1623	37	84	14	16	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	74.0	74.0	22.0	85.0	85.0	24.0	24.0	24.0	24.0
Total Split (%)	9.2%	61.7%	61.7%	18.3%	70.8%	70.8%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 6: Southpark Terrace/Mineral Court & Mineral Avenue

								
Ø1	Ø2 (R)					Ø4		
11 s	85 s					24 s		
								
Ø5	Ø6 (R)					Ø8		
22 s	74 s					24 s		

HCM 6th Signalized Intersection Summary

6: Southpark Terrace/Mineral Court & Mineral Avenue

2045 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1431	84	184	1623	37	84	14	151	16	2	14
Future Volume (veh/h)	20	1431	84	184	1623	37	84	14	151	16	2	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	1506	88	194	1708	39	88	15	159	17	2	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	2343	1045	369	2464	1099	236	19	199	97	26	193
Arrive On Green	0.04	1.00	1.00	0.07	0.92	0.92	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1396	138	1468	1211	190	1424
Grp Volume(v), veh/h	21	1506	88	194	1708	39	88	0	174	17	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1396	0	1606	1211	0	1614
Q Serve(g_s), s	0.5	0.0	0.0	4.3	12.4	0.2	7.1	0.0	12.6	1.7	0.0	1.1
Cycle Q Clear(g_c), s	0.5	0.0	0.0	4.3	12.4	0.2	8.2	0.0	12.6	14.3	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.91	1.00		0.88
Lane Grp Cap(c), veh/h	260	2343	1045	369	2464	1099	236	0	218	97	0	219
V/C Ratio(X)	0.08	0.64	0.08	0.53	0.69	0.04	0.37	0.00	0.80	0.18	0.00	0.08
Avail Cap(c_a), veh/h	297	2343	1045	508	2464	1099	257	0	241	114	0	242
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.64	0.64	0.64	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	5.4	1.9	1.4	48.9	0.0	50.3	57.2	0.0	45.3
Incr Delay (d2), s/veh	0.1	0.7	0.1	0.7	1.0	0.0	1.0	0.0	15.8	0.9	0.0	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	0.2	0.2	0.0	1.5	2.2	0.1	2.5	0.0	6.0	0.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.4	0.7	0.1	6.1	3.0	1.5	49.8	0.0	66.1	58.0	0.0	45.5
LnGrp LOS	A	A	A	A	A	A	D	A	E	E	A	D
Approach Vol, veh/h		1615			1941			262			34	
Approach Delay, s/veh		0.7			3.2			60.6			51.8	
Approach LOS		A			A			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	89.2		22.3	12.6	85.1		22.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	79.0		18.0	16.0	68.0		18.0				
Max Q Clear Time (g_c+l1), s	2.5	14.4		14.6	6.3	2.0		16.3				
Green Ext Time (p_c), s	0.0	25.2		0.4	0.4	20.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			6.5									
HCM 6th LOS			A									

Timings

7: Mineral Avenue & Mineral Avenue 150 W

2023 Adjusted Existing AM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	10	688	63	48	549	49	48	9	54	6
Future Volume (vph)	10	688	63	48	549	49	48	9	54	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	26.0	61.0	61.0	28.0	63.0	63.0	31.0	31.0	31.0	31.0
Total Split (%)	21.7%	50.8%	50.8%	23.3%	52.5%	52.5%	25.8%	25.8%	25.8%	25.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W

					
Ø1	Ø2 (R)		Ø4		
26 s	63 s		31 s		
					
Ø5	Ø6 (R)		Ø8		
28 s	61 s		31 s		

HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	688	63	48	549	49	48	9	59	54	6	10
Future Volume (veh/h)	10	688	63	48	549	49	48	9	59	54	6	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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	724	66	51	578	52	51	9	62	57	6	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	652	2513	1121	619	2513	1121	188	21	143	140	60	110
Arrive On Green	0.08	1.00	1.00	0.04	0.71	0.71	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1396	205	1411	1329	591	1084
Grp Volume(v), veh/h	11	724	66	51	578	52	51	0	71	57	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1396	0	1616	1329	0	1675
Q Serve(g_s), s	0.2	0.0	0.0	0.9	6.8	1.2	4.1	0.0	5.0	5.1	0.0	1.1
Cycle Q Clear(g_c), s	0.2	0.0	0.0	0.9	6.8	1.2	5.2	0.0	5.0	10.0	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.65
Lane Grp Cap(c), veh/h	652	2513	1121	619	2513	1121	188	0	163	140	0	169
V/C Ratio(X)	0.02	0.29	0.06	0.08	0.23	0.05	0.27	0.00	0.43	0.41	0.00	0.10
Avail Cap(c_a), veh/h	875	2513	1121	872	2513	1121	338	0	337	282	0	349
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	3.8	0.0	0.0	3.9	6.1	5.3	51.4	0.0	50.7	55.4	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.0	0.2	0.1	0.8	0.0	1.8	1.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.0	0.3	2.4	0.4	1.5	0.0	2.1	1.8	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.8	0.3	0.1	3.9	6.3	5.4	52.1	0.0	52.5	57.3	0.0	49.2
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		801			681			122			74	
Approach Delay, s/veh		0.3			6.1			52.4			55.5	
Approach LOS		A			A			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	90.9		18.1	11.0	90.9		18.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	20.0	57.0		25.0	22.0	55.0		25.0				
Max Q Clear Time (g_c+l1), s	2.2	8.8		7.2	2.9	2.0		12.0				
Green Ext Time (p_c), s	0.0	4.7		0.4	0.1	6.3		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									

Timings

2023 Adjusted Existing PM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	30	752	85	96	764	157	27	11	196	9
Future Volume (vph)	30	752	85	96	764	157	27	11	196	9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	49.0	49.0	26.0	51.0	51.0	45.0	45.0	45.0	45.0
Total Split (%)	20.0%	40.8%	40.8%	21.7%	42.5%	42.5%	37.5%	37.5%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W

		
Ø1	Ø2 (R)	Ø4
24 s	51 s	45 s
		
Ø5	Ø6 (R)	Ø8
26 s	49 s	45 s

HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2023 Adjusted Existing PM

11/10/2023

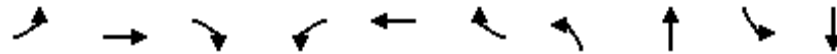
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	752	85	96	764	157	27	11	145	196	9	30
Future Volume (veh/h)	30	752	85	96	764	157	27	11	145	196	9	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	767	87	98	780	160	28	11	148	200	9	31
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	344	1940	865	488	1941	866	393	29	391	282	97	333
Arrive On Green	0.08	1.00	1.00	0.01	0.18	0.18	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1367	111	1491	1227	369	1272
Grp Volume(v), veh/h	31	767	87	98	780	160	28	0	159	200	0	40
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1367	0	1602	1227	0	1641
Q Serve(g_s), s	0.9	0.0	0.0	2.9	23.3	10.3	1.9	0.0	9.8	19.1	0.0	2.2
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.9	23.3	10.3	4.1	0.0	9.8	28.9	0.0	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.77
Lane Grp Cap(c), veh/h	344	1940	865	488	1941	866	393	0	420	282	0	430
V/C Ratio(X)	0.09	0.40	0.10	0.20	0.40	0.18	0.07	0.00	0.38	0.71	0.00	0.09
Avail Cap(c_a), veh/h	537	1940	865	710	1941	866	479	0	521	359	0	533
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	0.62	0.62	0.62	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	11.1	31.9	26.5	35.0	0.0	36.3	48.1	0.0	33.5
Incr Delay (d2), s/veh	0.1	0.6	0.2	0.1	0.4	0.3	0.1	0.0	0.6	4.6	0.0	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	0.3	0.2	0.1	1.2	11.2	4.4	0.6	0.0	3.9	6.2	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	0.6	0.2	11.2	32.2	26.8	35.1	0.0	36.8	52.7	0.0	33.6
LnGrp LOS	B	A	A	B	C	C	D	A	D	D	A	C
Approach Vol, veh/h		885			1038			187			240	
Approach Delay, s/veh		1.0			29.4			36.6			49.5	
Approach LOS		A			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	71.6		37.4	11.0	71.5		37.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	45.0		39.0	20.0	43.0		39.0				
Max Q Clear Time (g_c+l1), s	2.9	25.3		11.8	4.9	2.0		30.9				
Green Ext Time (p_c), s	0.0	6.0		1.1	0.2	6.7		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				21.3								
HCM 6th LOS				C								

Timings

2028 Background AM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	972	71	54	799	55	54	10	61	7
Future Volume (vph)	11	972	71	54	799	55	54	10	61	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	67.0	67.0	26.0	69.0	69.0	27.0	27.0	27.0	27.0
Total Split (%)	20.0%	55.8%	55.8%	21.7%	57.5%	57.5%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

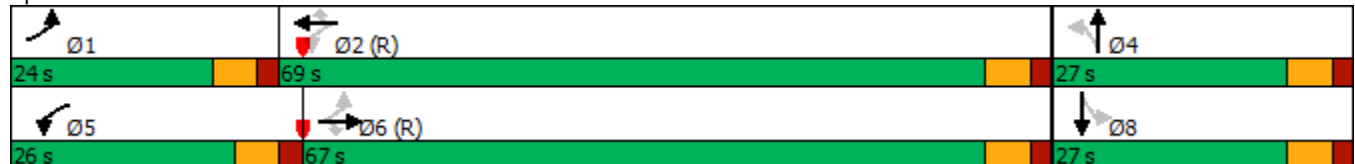
Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	972	71	54	799	55	54	10	66	61	7	11
Future Volume (veh/h)	11	972	71	54	799	55	54	10	66	61	7	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	1023	75	57	841	58	57	11	69	64	7	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	508	2477	1105	492	2477	1105	201	25	156	146	69	118
Arrive On Green	0.08	1.00	1.00	0.04	0.70	0.70	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1393	223	1396	1319	619	1061
Grp Volume(v), veh/h	12	1023	75	57	841	58	57	0	80	64	0	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1393	0	1619	1319	0	1679
Q Serve(g_s), s	0.2	0.0	0.0	1.0	11.3	1.4	4.6	0.0	5.5	5.7	0.0	1.2
Cycle Q Clear(g_c), s	0.2	0.0	0.0	1.0	11.3	1.4	5.8	0.0	5.5	11.3	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.63
Lane Grp Cap(c), veh/h	508	2477	1105	492	2477	1105	201	0	180	146	0	187
V/C Ratio(X)	0.02	0.41	0.07	0.12	0.34	0.05	0.28	0.00	0.44	0.44	0.00	0.10
Avail Cap(c_a), veh/h	701	2477	1105	715	2477	1105	290	0	283	230	0	294
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.5	0.0	0.0	4.2	7.2	5.7	50.5	0.0	49.8	55.1	0.0	47.9
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.1	0.3	0.1	0.8	0.0	1.7	2.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0	0.3	3.8	0.4	1.7	0.0	2.3	2.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.5	0.5	0.1	4.3	7.5	5.8	51.3	0.0	51.5	57.2	0.0	48.2
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h	1110				956				137			
Approach Delay, s/veh	0.5				7.2				51.4			
Approach LOS	A				A				D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	89.6		19.4	11.0	89.6		19.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	63.0		21.0	20.0	61.0		21.0				
Max Q Clear Time (g_c+l1), s	2.2	13.3		7.8	3.0	2.0		13.3				
Green Ext Time (p_c), s	0.0	6.8		0.4	0.1	9.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	8.3											
HCM 6th LOS	A											

Timings

2028 Background PM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	975	90	102	1027	166	29	12	208	10
Future Volume (vph)	32	975	90	102	1027	166	29	12	208	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	53.0	53.0	24.0	53.0	53.0	43.0	43.0	43.0	43.0
Total Split (%)	20.0%	44.2%	44.2%	20.0%	44.2%	44.2%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

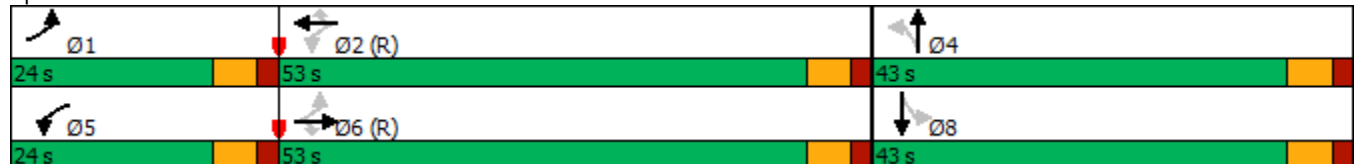
Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	975	90	102	1027	166	29	12	154	208	10	32
Future Volume (veh/h)	32	975	90	102	1027	166	29	12	154	208	10	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	995	92	104	1048	169	30	12	157	212	10	33
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1882	840	414	1892	844	410	31	411	292	105	348
Arrive On Green	0.08	1.00	1.00	0.01	0.18	0.18	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1364	114	1489	1216	382	1261
Grp Volume(v), veh/h	33	995	92	104	1048	169	30	0	169	212	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1364	0	1602	1216	0	1643
Q Serve(g_s), s	0.9	0.0	0.0	3.1	32.3	10.9	2.0	0.0	10.2	20.5	0.0	2.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	3.1	32.3	10.9	4.3	0.0	10.2	30.7	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.77
Lane Grp Cap(c), veh/h	255	1882	840	414	1892	844	410	0	442	292	0	454
V/C Ratio(X)	0.13	0.53	0.11	0.25	0.55	0.20	0.07	0.00	0.38	0.73	0.00	0.09
Avail Cap(c_a), veh/h	448	1882	840	602	1892	844	454	0	494	331	0	507
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.42	0.42	0.42	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.1	0.0	0.0	11.9	36.5	27.6	33.9	0.0	35.2	47.6	0.0	32.3
Incr Delay (d2), s/veh	0.2	1.0	0.2	0.1	0.5	0.2	0.1	0.0	0.5	6.8	0.0	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	0.4	0.3	0.1	1.3	15.5	4.7	0.7	0.0	4.1	6.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	1.0	0.2	12.0	36.9	27.9	34.0	0.0	35.7	54.4	0.0	32.4
LnGrp LOS	B	A	A	B	D	C	C	A	D	D	A	C
Approach Vol, veh/h		1120			1321			199			255	
Approach Delay, s/veh		1.3			33.8			35.4			50.7	
Approach LOS		A			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	69.9		39.1	11.3	69.6		39.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	47.0		37.0	18.0	47.0		37.0				
Max Q Clear Time (g_c+l1), s	2.9	34.3		12.2	5.1	2.0		32.7				
Green Ext Time (p_c), s	0.0	6.4		1.1	0.2	9.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				22.9								
HCM 6th LOS				C								

Timings

2028 Total AM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	1249	71	54	1087	55	54	10	61	7
Future Volume (vph)	11	1249	71	54	1087	55	54	10	61	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	71.0	71.0	24.0	71.0	71.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	59.2%	59.2%	20.0%	59.2%	59.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

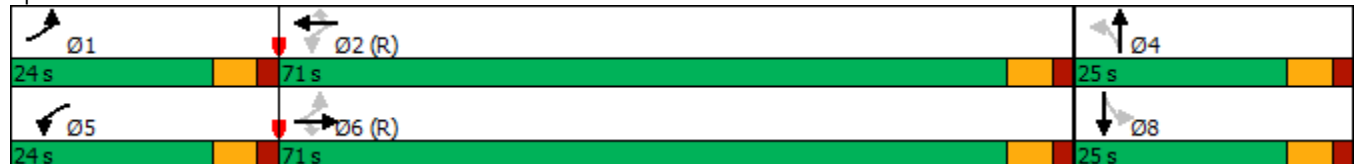
Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2028 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	11	1249	71	54	1087	55	54	10	66	61	7	11
Future Volume (veh/h)	11	1249	71	54	1087	55	54	10	66	61	7	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	1315	75	57	1144	58	57	11	69	64	7	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	459	2477	1105	303	2477	1105	201	25	155	146	69	118
Arrive On Green	0.03	0.47	0.47	0.08	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1393	223	1396	1319	619	1061
Grp Volume(v), veh/h	12	1315	75	57	1144	58	57	0	80	64	0	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1393	0	1619	1319	0	1679
Q Serve(g_s), s	0.2	31.5	3.1	1.0	0.0	0.0	4.6	0.0	5.5	5.7	0.0	1.2
Cycle Q Clear(g_c), s	0.2	31.5	3.1	1.0	0.0	0.0	5.8	0.0	5.5	11.3	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.63
Lane Grp Cap(c), veh/h	459	2477	1105	303	2477	1105	201	0	180	146	0	187
V/C Ratio(X)	0.03	0.53	0.07	0.19	0.46	0.05	0.28	0.00	0.44	0.44	0.00	0.10
Avail Cap(c_a), veh/h	652	2477	1105	496	2477	1105	266	0	256	208	0	266
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	0.45	0.45	0.45	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.2	18.1	10.5	8.6	0.0	0.0	50.6	0.0	49.9	55.1	0.0	47.9
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.1	0.3	0.0	0.8	0.0	1.7	2.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	13.8	1.0	0.4	0.1	0.0	1.7	0.0	2.3	2.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.2	18.8	10.6	8.8	0.3	0.0	51.3	0.0	51.6	57.2	0.0	48.2
LnGrp LOS	A	B	B	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		1402			1259			137			83	
Approach Delay, s/veh		18.2			0.7			51.5			55.1	
Approach LOS		B			A			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	89.7		19.3	11.0	89.7		19.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	65.0		19.0	18.0	65.0		19.0				
Max Q Clear Time (g_c+l1), s	2.2	2.0		7.8	3.0	33.5		13.3				
Green Ext Time (p_c), s	0.0	10.9		0.4	0.1	11.9		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.2								
HCM 6th LOS				B								

Timings

7: Mineral Avenue & Mineral Avenue 150 W

2028 Total PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1414	90	102	1483	166	29	12	208	10
Future Volume (vph)	32	1414	90	102	1483	166	29	12	208	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	62.0	62.0	24.0	62.0	62.0	34.0	34.0	34.0	34.0
Total Split (%)	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

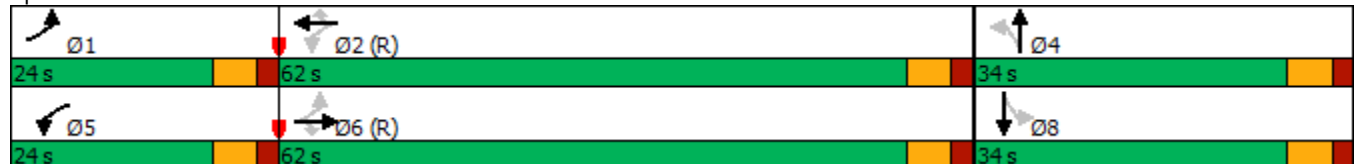
Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2028 Total PM
11/10/2023

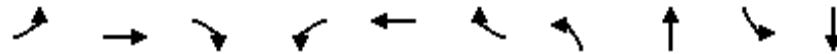
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	32	1414	90	102	1483	166	29	12	154	208	10	32
Future Volume (veh/h)	32	1414	90	102	1483	166	29	12	154	208	10	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1443	92	104	1513	169	30	12	157	212	10	33
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	2043	911	329	2043	911	350	27	347	234	89	294
Arrive On Green	0.08	1.00	1.00	0.03	0.39	0.39	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1364	114	1489	1216	382	1261
Grp Volume(v), veh/h	33	1443	92	104	1513	169	30	0	169	212	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1364	0	1602	1216	0	1643
Q Serve(g_s), s	0.8	0.0	0.0	2.8	43.9	8.5	2.1	0.0	10.8	17.2	0.0	2.5
Cycle Q Clear(g_c), s	0.8	0.0	0.0	2.8	43.9	8.5	4.6	0.0	10.8	28.0	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.77
Lane Grp Cap(c), veh/h	196	2043	911	329	2043	911	350	0	374	234	0	383
V/C Ratio(X)	0.17	0.71	0.10	0.32	0.74	0.19	0.09	0.00	0.45	0.91	0.00	0.11
Avail Cap(c_a), veh/h	388	2043	911	522	2043	911	350	0	374	234	0	383
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	9.5	29.2	18.3	38.0	0.0	39.4	53.0	0.0	36.2
Incr Delay (d2), s/veh	0.3	1.6	0.2	0.0	0.2	0.0	0.1	0.0	0.9	34.8	0.0	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	0.3	0.4	0.0	1.1	19.7	3.3	0.7	0.0	4.4	8.7	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	1.6	0.2	9.5	29.4	18.3	38.1	0.0	40.3	87.8	0.0	36.3
LnGrp LOS	B	A	A	A	C	B	D	A	D	F	A	D
Approach Vol, veh/h		1568			1786			199			255	
Approach Delay, s/veh		1.8			27.2			40.0			79.1	
Approach LOS		A			C			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	75.0		34.0	11.0	75.0		34.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	56.0		28.0	18.0	56.0		28.0				
Max Q Clear Time (g_c+l1), s	2.8	45.9		12.8	4.8	2.0		30.0				
Green Ext Time (p_c), s	0.0	7.4		0.9	0.2	17.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				20.9								
HCM 6th LOS				C								

Timings

2045 Background AM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	←	↑↑	→	←	↑↑	→	←	↑	←	→
Traffic Volume (vph)	12	1037	79	60	854	61	60	11	68	8
Future Volume (vph)	12	1037	79	60	854	61	60	11	68	8
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	67.0	67.0	26.0	69.0	69.0	27.0	27.0	27.0	27.0
Total Split (%)	20.0%	55.8%	55.8%	21.7%	57.5%	57.5%	22.5%	22.5%	22.5%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

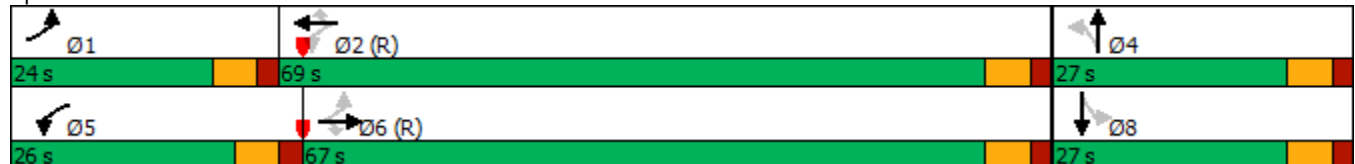
Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1037	79	60	854	61	60	11	74	68	8	12
Future Volume (veh/h)	12	1037	79	60	854	61	60	11	74	68	8	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	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	1092	83	63	899	64	63	12	78	72	8	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	409	2434	1086	461	2434	1086	216	27	173	154	79	129
Arrive On Green	0.08	1.00	1.00	0.01	0.23	0.23	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1391	216	1402	1307	641	1042
Grp Volume(v), veh/h	13	1092	83	63	899	64	63	0	90	72	0	21
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1391	0	1618	1307	0	1683
Q Serve(g_s), s	0.2	0.0	0.0	1.2	25.6	3.8	5.1	0.0	6.2	6.5	0.0	1.3
Cycle Q Clear(g_c), s	0.2	0.0	0.0	1.2	25.6	3.8	6.4	0.0	6.2	12.7	0.0	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.62
Lane Grp Cap(c), veh/h	409	2434	1086	461	2434	1086	216	0	200	154	0	208
V/C Ratio(X)	0.03	0.45	0.08	0.14	0.37	0.06	0.29	0.00	0.45	0.47	0.00	0.10
Avail Cap(c_a), veh/h	602	2434	1086	684	2434	1086	288	0	283	221	0	294
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.62	0.62	0.62	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	4.8	24.5	16.1	49.5	0.0	48.8	54.7	0.0	46.7
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.1	0.3	0.1	0.7	0.0	1.6	2.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0	0.4	12.3	1.4	1.8	0.0	2.6	2.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	0.5	0.1	4.9	24.8	16.2	50.3	0.0	50.4	56.9	0.0	46.9
LnGrp LOS	A	A	A	A	C	B	D	A	D	E	A	D
Approach Vol, veh/h		1188			1026			153			93	
Approach Delay, s/veh		0.6			23.1			50.4			54.7	
Approach LOS		A			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	88.2		20.8	11.0	88.2		20.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	63.0		21.0	20.0	61.0		21.0				
Max Q Clear Time (g_c+l1), s	2.2	27.6		8.4	3.2	2.0		14.7				
Green Ext Time (p_c), s	0.0	8.0		0.5	0.1	11.4		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Timings 7: Mineral Avenue & Mineral Avenue 150 W

2045 Background PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1047	90	102	1101	166	29	12	208	10
Future Volume (vph)	32	1047	90	102	1101	166	29	12	208	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	51.0	51.0	24.0	51.0	51.0	45.0	45.0	45.0	45.0
Total Split (%)	20.0%	42.5%	42.5%	20.0%	42.5%	42.5%	37.5%	37.5%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

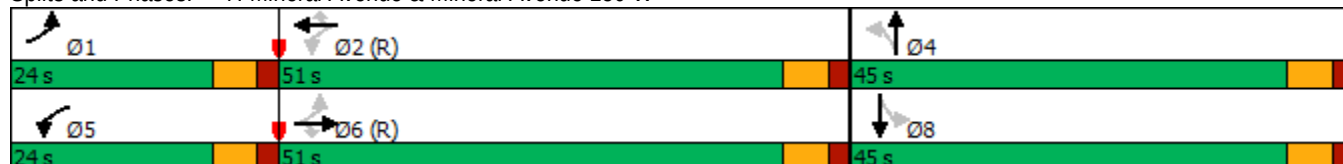
Actuated Cycle Length: 120

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2045 Background PM

11/10/2023

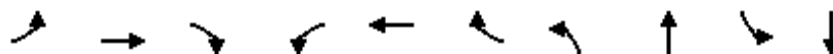
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1047	90	102	1101	166	29	12	154	208	10	32
Future Volume (veh/h)	32	1047	90	102	1101	166	29	12	154	208	10	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1068	92	104	1123	169	30	12	157	212	10	33
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1879	838	395	1889	842	411	31	412	293	106	349
Arrive On Green	0.08	1.00	1.00	0.01	0.18	0.18	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1364	114	1489	1216	382	1261
Grp Volume(v), veh/h	33	1068	92	104	1123	169	30	0	169	212	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1364	0	1602	1216	0	1643
Q Serve(g_s), s	0.9	0.0	0.0	3.1	34.9	10.9	2.0	0.0	10.2	20.5	0.0	2.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	3.1	34.9	10.9	4.3	0.0	10.2	30.7	0.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.77
Lane Grp Cap(c), veh/h	237	1879	838	395	1889	842	411	0	444	293	0	455
V/C Ratio(X)	0.14	0.57	0.11	0.26	0.59	0.20	0.07	0.00	0.38	0.72	0.00	0.09
Avail Cap(c_a), veh/h	430	1879	838	583	1889	842	477	0	521	352	0	534
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.33	0.33	0.33	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.9	0.0	0.0	12.0	37.6	27.7	33.8	0.0	35.1	47.5	0.0	32.2
Incr Delay (d2), s/veh	0.2	1.1	0.2	0.1	0.5	0.2	0.1	0.0	0.5	5.8	0.0	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	0.4	0.3	0.1	1.3	16.8	4.7	0.7	0.0	4.1	6.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	1.1	0.2	12.1	38.0	27.9	33.9	0.0	35.6	53.3	0.0	32.3
LnGrp LOS	B	A	A	B	D	C	C	A	D	D	A	C
Approach Vol, veh/h		1193			1396			199			255	
Approach Delay, s/veh		1.5			34.9			35.4			49.8	
Approach LOS		A			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	69.8		39.2	11.3	69.5		39.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	45.0		39.0	18.0	45.0		39.0				
Max Q Clear Time (g_c+l1), s	2.9	36.9		12.2	5.1	2.0		32.7				
Green Ext Time (p_c), s	0.0	5.0		1.1	0.2	10.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay				23.1								
HCM 6th LOS				C								

Timings

2045 Total AM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	1314	71	54	1142	55	54	10	61	7
Future Volume (vph)	11	1314	71	54	1142	55	54	10	61	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	72.0	72.0	24.0	72.0	72.0	24.0	24.0	24.0	24.0
Total Split (%)	20.0%	60.0%	60.0%	20.0%	60.0%	60.0%	20.0%	20.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

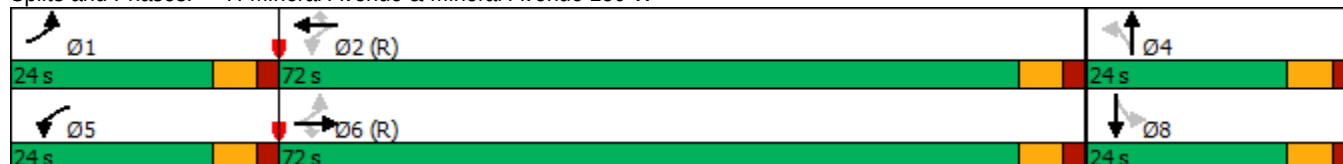
Actuated Cycle Length: 120

Offset: 22 (18%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2045 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	1314	71	54	1142	55	54	10	66	61	7	11
Future Volume (veh/h)	11	1314	71	54	1142	55	54	10	66	61	7	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	1383	75	57	1202	58	57	11	69	64	7	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	441	2478	1105	318	2478	1105	201	25	155	146	69	118
Arrive On Green	0.04	0.70	0.70	0.08	1.00	1.00	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1393	223	1396	1319	619	1061
Grp Volume(v), veh/h	12	1383	75	57	1202	58	57	0	80	64	0	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1393	0	1619	1319	0	1679
Q Serve(g_s), s	0.2	23.2	1.8	1.0	0.0	0.0	4.6	0.0	5.5	5.7	0.0	1.2
Cycle Q Clear(g_c), s	0.2	23.2	1.8	1.0	0.0	0.0	5.8	0.0	5.5	11.3	0.0	1.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.63
Lane Grp Cap(c), veh/h	441	2478	1105	318	2478	1105	201	0	180	146	0	187
V/C Ratio(X)	0.03	0.56	0.07	0.18	0.49	0.05	0.28	0.00	0.44	0.44	0.00	0.10
Avail Cap(c_a), veh/h	634	2478	1105	511	2478	1105	255	0	243	197	0	252
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	0.38	0.38	0.38	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.1	9.0	5.8	6.6	0.0	0.0	50.6	0.0	49.9	55.1	0.0	47.9
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.1	0.3	0.0	0.8	0.0	1.7	2.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	8.4	0.6	0.3	0.1	0.0	1.7	0.0	2.3	2.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.1	9.7	5.9	6.7	0.3	0.0	51.3	0.0	51.6	57.2	0.0	48.2
LnGrp LOS	A	A	A	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h		1470			1317			137			83	
Approach Delay, s/veh		9.5			0.5			51.5			55.1	
Approach LOS		A			A			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	89.7		19.3	11.0	89.7		19.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	66.0		18.0	18.0	66.0		18.0				
Max Q Clear Time (g_c+l1), s	2.2	2.0		7.8	3.0	25.2		13.3				
Green Ext Time (p_c), s	0.0	13.2		0.4	0.1	15.3		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									

Timings

7: Mineral Avenue & Mineral Avenue 150 W

2045 Total PM

11/10/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1486	90	102	1557	166	29	12	208	10
Future Volume (vph)	32	1486	90	102	1557	166	29	12	208	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	64.0	64.0	24.0	64.0	64.0	32.0	32.0	32.0	32.0
Total Split (%)	20.0%	53.3%	53.3%	20.0%	53.3%	53.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

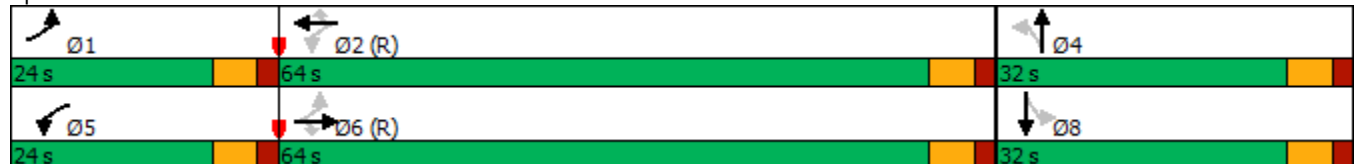
Actuated Cycle Length: 120

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 7: Mineral Avenue & Mineral Avenue 150 W



HCM 6th Signalized Intersection Summary
7: Mineral Avenue & Mineral Avenue 150 W

2045 Total PM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1486	90	102	1557	166	29	12	154	208	10	32
Future Volume (veh/h)	32	1486	90	102	1557	166	29	12	154	208	10	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1516	92	104	1589	169	30	12	157	212	10	33
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	2103	938	321	2103	938	327	25	323	211	83	273
Arrive On Green	0.08	1.00	1.00	0.03	0.40	0.40	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1364	114	1489	1216	382	1261
Grp Volume(v), veh/h	33	1516	92	104	1589	169	30	0	169	212	0	43
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1364	0	1602	1216	0	1643
Q Serve(g_s), s	0.8	0.0	0.0	2.7	46.2	8.3	2.2	0.0	11.1	14.9	0.0	2.5
Cycle Q Clear(g_c), s	0.8	0.0	0.0	2.7	46.2	8.3	4.7	0.0	11.1	26.0	0.0	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.77
Lane Grp Cap(c), veh/h	190	2103	938	321	2103	938	327	0	347	211	0	356
V/C Ratio(X)	0.17	0.72	0.10	0.32	0.76	0.18	0.09	0.00	0.49	1.00	0.00	0.12
Avail Cap(c_a), veh/h	383	2103	938	514	2103	938	327	0	347	211	0	356
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.71	0.71	0.71	0.09	0.09	0.09	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	0.0	8.7	28.7	17.3	39.7	0.0	41.2	54.7	0.0	37.8
Incr Delay (d2), s/veh	0.3	1.6	0.1	0.1	0.2	0.0	0.1	0.0	1.1	62.9	0.0	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	0.4	0.5	0.0	1.0	20.7	3.2	0.7	0.0	4.5	10.1	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	1.6	0.1	8.7	29.0	17.3	39.8	0.0	42.2	117.6	0.0	38.0
LnGrp LOS	B	A	A	A	C	B	D	A	D	F	A	D
Approach Vol, veh/h		1641			1862			199			255	
Approach Delay, s/veh		1.8			26.8			41.9			104.1	
Approach LOS		A			C			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	77.0		32.0	11.0	77.0		32.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	18.0	58.0		26.0	18.0	58.0		26.0				
Max Q Clear Time (g_c+l1), s	2.8	48.2		13.1	4.7	2.0		28.0				
Green Ext Time (p_c), s	0.0	7.4		0.8	0.2	19.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				22.2								
HCM 6th LOS				C								

Timings

8: Broadway & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	432	45	126	298	63	279	1223	193	92	950	236
Future Volume (vph)	257	432	45	126	298	63	279	1223	193	92	950	236
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	28.0		11.0	24.0	24.0	29.0	67.0	67.0	14.0	52.0	52.0
Total Split (%)	12.5%	23.3%		9.2%	20.0%	20.0%	24.2%	55.8%	55.8%	11.7%	43.3%	43.3%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

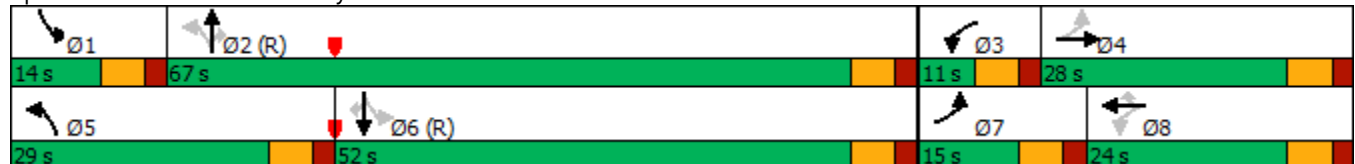
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	432	45	126	298	63	279	1223	193	92	950	236
Future Volume (veh/h)	257	432	45	126	298	63	279	1223	193	92	950	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	265	445	0	130	307	65	288	1261	199	95	979	243
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	538		314	420	187	378	2013	898	251	1819	811
Arrive On Green	0.02	0.05	0.00	0.04	0.12	0.12	0.09	0.57	0.57	0.04	0.51	0.51
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	265	445	0	130	307	65	288	1261	199	95	979	243
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.0	14.9	0.0	3.9	10.0	4.5	8.7	28.6	7.5	3.0	22.3	10.6
Cycle Q Clear(g_c), s	8.0	14.9	0.0	3.9	10.0	4.5	8.7	28.6	7.5	3.0	22.3	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	447	538		314	420	187	378	2013	898	251	1819	811
V/C Ratio(X)	0.59	0.83		0.41	0.73	0.35	0.76	0.63	0.22	0.38	0.54	0.30
Avail Cap(c_a), veh/h	447	652		314	533	238	550	2013	898	298	1819	811
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.00	1.00	1.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	55.4	0.0	44.5	51.1	48.7	16.8	17.5	12.9	15.4	19.7	16.9
Incr Delay (d2), s/veh	2.0	7.1	0.0	0.9	3.8	1.1	3.4	1.3	0.5	0.9	1.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	7.7	0.0	1.7	4.7	1.9	3.7	11.7	2.8	1.3	9.3	4.1
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	47.1	62.6	0.0	45.4	54.9	49.8	20.1	18.8	13.4	16.4	20.9	17.8
LnGrp LOS	D	E	A	D	D	D	C	B	B	B	C	B
Approach Vol, veh/h	756			502			1748			1317		
Approach Delay, s/veh	53.4			51.8			18.4			20.0		
Approach LOS	D			D			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	74.0	11.0	24.2	17.4	67.4	15.0	20.2				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	8.0	61.0	5.0	22.0	23.0	46.0	9.0	18.0				
Max Q Clear Time (g_c+l1), s	5.0	30.6	5.9	16.9	10.7	24.3	10.0	12.0				
Green Ext Time (p_c), s	0.0	12.7	0.0	1.3	0.7	8.4	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	28.9											
HCM 6th LOS	C											

Timings

8: Broadway & Mineral Avenue

2023 Adjusted Existing PM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	314	453	106	184	464	70	209	1047	147	101	1150	367
Future Volume (vph)	314	453	106	184	464	70	209	1047	147	101	1150	367
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	15.0	30.0		11.0	26.0	26.0	21.0	64.0	64.0	15.0	58.0	58.0
Total Split (%)	12.5%	25.0%		9.2%	21.7%	21.7%	17.5%	53.3%	53.3%	12.5%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

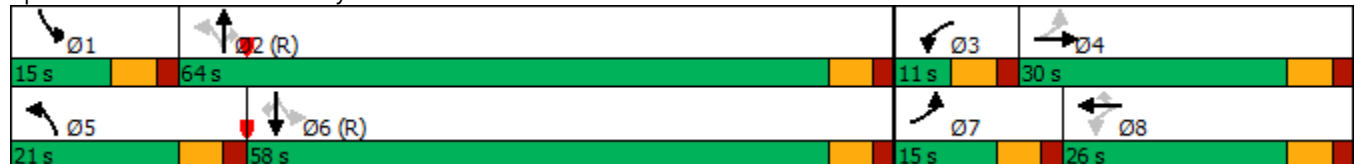
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary 8: Broadway & Mineral Avenue

2023 Adjusted Existing PM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	314	453	106	184	464	70	209	1047	147	101	1150	367
Future Volume (veh/h)	314	453	106	184	464	70	209	1047	147	101	1150	367
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	338	487	0	198	499	75	225	1126	158	109	1237	395
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	414	683		366	564	252	271	1847	824	294	1719	767
Arrive On Green	0.02	0.06	0.00	0.04	0.16	0.16	0.11	0.69	0.69	0.05	0.48	0.48
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	338	487	0	198	499	75	225	1126	158	109	1237	395
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.0	16.1	0.0	5.0	16.5	5.0	7.6	20.3	4.3	3.7	33.1	20.6
Cycle Q Clear(g_c), s	9.0	16.1	0.0	5.0	16.5	5.0	7.6	20.3	4.3	3.7	33.1	20.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	683		366	564	252	271	1847	824	294	1719	767
V/C Ratio(X)	0.82	0.71		0.54	0.88	0.30	0.83	0.61	0.19	0.37	0.72	0.52
Avail Cap(c_a), veh/h	414	711		366	592	264	347	1847	824	344	1719	767
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.00	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	53.0	0.0	43.0	49.4	44.6	22.6	12.0	9.6	15.5	24.5	21.3
Incr Delay (d2), s/veh	10.6	2.8	0.0	1.6	14.4	0.7	11.3	1.3	0.5	0.8	2.6	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.0	0.0	0.6	8.4	2.0	3.8	6.6	1.5	1.5	14.2	8.1
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	54.4	55.8	0.0	44.6	63.8	45.2	33.9	13.4	10.0	16.3	27.2	23.8
LnGrp LOS	D	E	A	D	E	D	C	B	B	B	C	C
Approach Vol, veh/h	939			772			1509			1741		
Approach Delay, s/veh	48.5			57.1			16.1			25.7		
Approach LOS	D			E			B			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	68.4	11.0	29.0	15.9	64.0	15.0	25.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	58.0	5.0	24.0	15.0	52.0	9.0	20.0				
Max Q Clear Time (g_c+I1), s	5.7	22.3	7.0	18.1	9.6	35.1	11.0	18.5				
Green Ext Time (p_c), s	0.1	11.3	0.0	1.6	0.3	9.9	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay.

Timings

8: Broadway & Mineral Avenue

2028 Background AM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	366	461	105	129	323	65	340	1254	198	94	974	336
Future Volume (vph)	366	461	105	129	323	65	340	1254	198	94	974	336
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	17.0	30.0		11.0	24.0	24.0	31.0	65.0	65.0	14.0	48.0	48.0
Total Split (%)	14.2%	25.0%		9.2%	20.0%	20.0%	25.8%	54.2%	54.2%	11.7%	40.0%	40.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

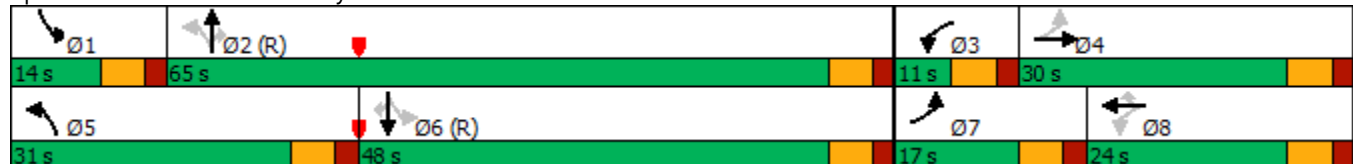
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary 8: Broadway & Mineral Avenue

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	366	461	105	129	323	65	340	1254	198	94	974	336
Future Volume (veh/h)	366	461	105	129	323	65	340	1254	198	94	974	336
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	377	475	0	133	333	67	351	1293	204	97	1004	346
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	590		325	413	184	384	1951	870	239	1667	744
Arrive On Green	0.03	0.05	0.00	0.04	0.12	0.12	0.12	0.55	0.55	0.04	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	377	475	0	133	333	67	351	1293	204	97	1004	346
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.0	15.9	0.0	4.0	11.0	4.7	12.0	31.0	8.0	3.4	25.1	17.8
Cycle Q Clear(g_c), s	11.0	15.9	0.0	4.0	11.0	4.7	12.0	31.0	8.0	3.4	25.1	17.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	484	590		325	413	184	384	1951	870	239	1667	744
V/C Ratio(X)	0.78	0.80		0.41	0.81	0.36	0.91	0.66	0.23	0.41	0.60	0.47
Avail Cap(c_a), veh/h	484	711		325	533	238	536	1951	870	281	1667	744
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.00	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	54.8	0.0	44.7	51.7	48.9	21.8	19.2	14.0	17.7	23.6	21.6
Incr Delay (d2), s/veh	7.4	5.3	0.0	0.8	6.9	1.2	14.0	1.5	0.5	1.1	1.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	8.0	0.0	1.7	5.2	1.9	6.0	12.3	2.9	1.4	10.4	6.8
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	51.8	60.1	0.0	45.5	58.7	50.1	35.8	20.7	14.5	18.8	25.2	23.7
LnGrp LOS	D	E	A	D	E	D	D	C	B	B	C	C
Approach Vol, veh/h	960			533			1848			1447		
Approach Delay, s/veh	50.1			54.3			22.9			24.4		
Approach LOS	D			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	71.9	11.0	25.9	20.8	62.3	17.0	19.9				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	8.0	59.0	5.0	24.0	25.0	42.0	11.0	18.0				
Max Q Clear Time (g_c+l1), s	5.4	33.0	6.0	17.9	14.0	27.1	13.0	13.0				
Green Ext Time (p_c), s	0.0	11.3	0.0	1.5	0.8	7.0	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	32.3											
HCM 6th LOS	C											
Notes												

Timings

8: Broadway & Mineral Avenue

2028 Background PM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	479	159	189	495	72	277	1073	151	104	1179	484
Future Volume (vph)	408	479	159	189	495	72	277	1073	151	104	1179	484
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	16.0	30.0		11.0	25.0	25.0	23.0	64.0	64.0	15.0	56.0	56.0
Total Split (%)	13.3%	25.0%		9.2%	20.8%	20.8%	19.2%	53.3%	53.3%	12.5%	46.7%	46.7%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

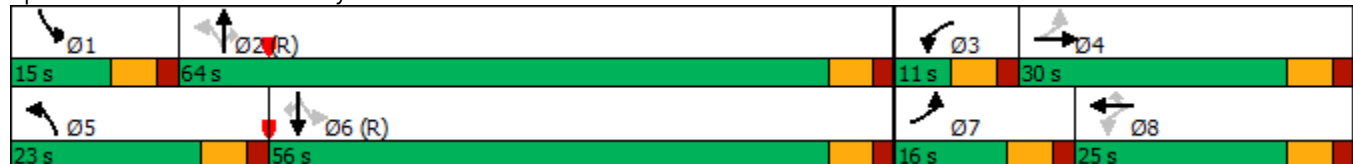
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary 8: Broadway & Mineral Avenue

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	408	479	159	189	495	72	277	1073	151	104	1179	484
Future Volume (veh/h)	408	479	159	189	495	72	277	1073	151	104	1179	484
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	439	515	0	203	532	77	298	1154	162	112	1268	520
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	424	711		363	563	251	324	1803	804	264	1514	675
Arrive On Green	0.03	0.07	0.00	0.04	0.16	0.16	0.13	0.51	0.51	0.05	0.43	0.43
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	439	515	0	203	532	77	298	1154	162	112	1268	520
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.0	17.1	0.0	5.0	17.8	5.2	13.8	28.4	6.7	4.2	38.2	33.6
Cycle Q Clear(g_c), s	10.0	17.1	0.0	5.0	17.8	5.2	13.8	28.4	6.7	4.2	38.2	33.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	424	711		363	563	251	324	1803	804	264	1514	675
V/C Ratio(X)	1.04	0.72		0.56	0.95	0.31	0.92	0.64	0.20	0.42	0.84	0.77
Avail Cap(c_a), veh/h	424	711		363	563	251	341	1803	804	306	1514	675
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	52.8	0.0	43.4	50.0	44.7	33.3	21.6	16.2	19.5	30.7	29.4
Incr Delay (d2), s/veh	48.3	2.9	0.0	1.9	25.1	0.7	24.9	1.5	0.5	1.1	5.7	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.4	0.0	0.7	9.8	2.1	11.0	11.9	2.5	1.8	17.2	14.1
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	93.4	55.7	0.0	45.3	75.1	45.4	58.3	23.0	16.7	20.6	36.4	37.7
LnGrp LOS	F	E	A	D	E	D	E	C	B	C	D	D
Approach Vol, veh/h	1125			812			1614			1900		
Approach Delay, s/veh	62.0			64.8			28.9			35.8		
Approach LOS	E			E			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	66.9	11.0	30.0	21.9	57.1	16.0	25.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	58.0	5.0	24.0	17.0	50.0	10.0	19.0				
Max Q Clear Time (g_c+I1), s	6.2	30.4	7.0	19.1	15.8	40.2	12.0	19.8				
Green Ext Time (p_c), s	0.1	10.7	0.0	1.5	0.1	7.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 43.5

HCM 6th LOS D

Notes

Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay.

Timings

8: Broadway & Mineral Avenue

2028 Total AM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	542	486	180	129	348	65	443	1177	198	94	913	497
Future Volume (vph)	542	486	180	129	348	65	443	1177	198	94	913	497
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	20.0	33.0		11.0	24.0	24.0	34.0	62.0	62.0	14.0	42.0	42.0
Total Split (%)	16.7%	27.5%		9.2%	20.0%	20.0%	28.3%	51.7%	51.7%	11.7%	35.0%	35.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

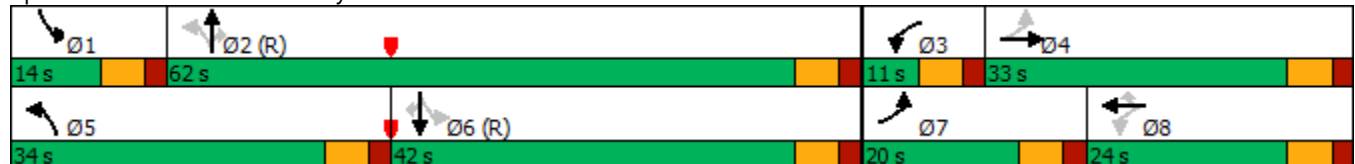
Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2028 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	542	486	180	129	348	65	443	1177	198	94	913	497
Future Volume (veh/h)	542	486	180	129	348	65	443	1177	198	94	913	497
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	559	501	0	133	359	67	457	1213	204	97	941	512
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	568	703		373	436	195	486	1815	809	232	1219	544
Arrive On Green	0.08	0.13	0.00	0.04	0.12	0.12	0.15	0.34	0.34	0.05	0.34	0.34
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	559	501	0	133	359	67	457	1213	204	97	941	512
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	14.0	16.2	0.0	4.0	11.8	4.6	23.7	34.9	11.1	4.2	28.4	37.6
Cycle Q Clear(g_c), s	14.0	16.2	0.0	4.0	11.8	4.6	23.7	34.9	11.1	4.2	28.4	37.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	703		373	436	195	486	1815	809	232	1219	544
V/C Ratio(X)	0.98	0.71		0.36	0.82	0.34	0.94	0.67	0.25	0.42	0.77	0.94
Avail Cap(c_a), veh/h	568	800		373	533	238	515	1815	809	262	1219	544
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.00	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	48.8	0.0	43.8	51.4	48.2	36.1	30.8	23.0	24.6	35.2	38.2
Incr Delay (d2), s/veh	30.8	2.2	0.0	0.6	8.4	1.0	22.0	1.7	0.6	1.2	4.8	26.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	7.6	0.0	1.7	5.7	1.9	16.8	15.9	4.4	1.8	12.7	18.0
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	75.1	51.0	0.0	44.4	59.8	49.3	58.2	32.5	23.6	25.8	40.0	64.8
LnGrp LOS	E	D	A	D	E	D	E	C	C	C	D	E
Approach Vol, veh/h	1246			559			1874			1550		
Approach Delay, s/veh	54.2			54.9			37.8			47.3		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	67.3	11.0	29.7	32.1	47.2	20.0	20.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	8.0	56.0	5.0	27.0	28.0	36.0	14.0	18.0				
Max Q Clear Time (g_c+l1), s	6.2	36.9	6.0	18.2	25.7	39.6	16.0	13.8				
Green Ext Time (p_c), s	0.0	9.0	0.0	2.0	0.4	0.0	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			46.3									
HCM 6th LOS			D									
Notes												

Timings

8: Broadway & Mineral Avenue

2028 Total PM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	646	509	330	189	529	72	430	955	151	104	1046	753
Future Volume (vph)	646	509	330	189	529	72	430	955	151	104	1046	753
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	20.0	32.0		12.0	24.0	24.0	27.0	61.0	61.0	15.0	49.0	49.0
Total Split (%)	16.7%	26.7%		10.0%	20.0%	20.0%	22.5%	50.8%	50.8%	12.5%	40.8%	40.8%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

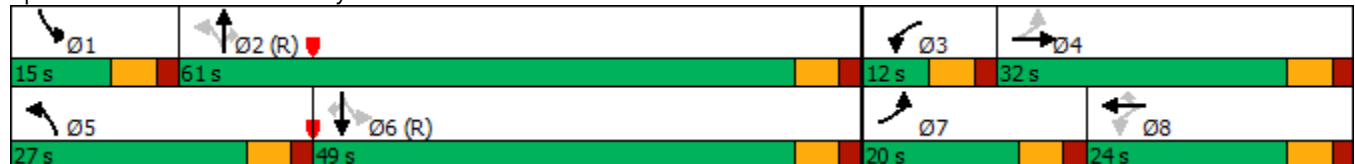
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2028 Total PM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			 			 	
Traffic Volume (veh/h)	646	509	330	189	529	72	430	955	151	104	1046	753
Future Volume (veh/h)	646	509	330	189	529	72	430	955	151	104	1046	753
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	695	547	0	203	569	77	462	1027	162	112	1125	810
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	523	770		403	533	238	386	1700	758	284	1273	568
Arrive On Green	0.04	0.07	0.00	0.05	0.15	0.15	0.17	0.48	0.48	0.06	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	695	547	0	203	569	77	462	1027	162	112	1125	810
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	14.0	18.1	0.0	6.0	18.0	5.2	21.0	25.4	7.1	4.7	35.7	43.0
Cycle Q Clear(g_c), s	14.0	18.1	0.0	6.0	18.0	5.2	21.0	25.4	7.1	4.7	35.7	43.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	523	770		403	533	238	386	1700	758	284	1273	568
V/C Ratio(X)	1.33	0.71		0.50	1.07	0.32	1.20	0.60	0.21	0.40	0.88	1.43
Avail Cap(c_a), veh/h	523	770		403	533	238	386	1700	758	319	1273	568
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.57	0.57	0.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	52.0	0.0	41.3	51.0	45.6	37.0	23.0	18.2	22.7	36.1	38.5
Incr Delay (d2), s/veh	155.3	1.8	0.0	1.0	58.2	0.8	108.0	1.3	0.5	0.9	9.1	201.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	8.8	0.0	2.6	12.3	2.1	18.0	10.8	2.7	2.1	16.8	48.2
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	197.5	53.8	0.0	42.3	109.2	46.3	145.0	24.3	18.7	23.6	45.3	240.3
LnGrp LOS	F	D	A	D	F	D	F	C	B	C	D	F
Approach Vol, veh/h	1597			849			1651			2047		
Approach Delay, s/veh	104.4			87.5			57.5			121.3		
Approach LOS	F			F			E			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	63.4	12.0	32.0	27.0	49.0	20.0	24.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	55.0	6.0	26.0	21.0	43.0	14.0	18.0				
Max Q Clear Time (g_c+l1), s	6.7	27.4	8.0	20.1	23.0	45.0	16.0	20.0				
Green Ext Time (p_c), s	0.1	9.3	0.0	1.8	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	95.1											
HCM 6th LOS	F											
Notes												

Timings

2028 Total AM - Improved

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	542	486	180	129	348	65	443	1177	198	94	913	497
Future Volume (vph)	542	486	180	129	348	65	443	1177	198	94	913	497
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4		Free	8		8			2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
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)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0
Total Split (s)	24.0	37.0		11.0	24.0	24.0	26.0	60.0	60.0	12.0	46.0	24.0
Total Split (%)	20.0%	30.8%		9.2%	20.0%	20.0%	21.7%	50.0%	50.0%	10.0%	38.3%	20.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 120

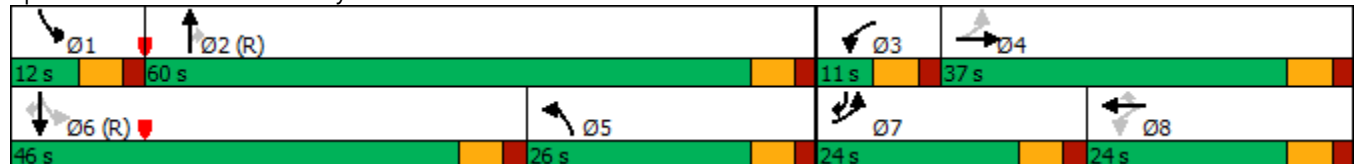
Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2028 Total AM - Improved

02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	542	486	180	129	348	65	443	1177	198	94	913	497
Future Volume (veh/h)	542	486	180	129	348	65	443	1177	198	94	913	497
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	559	501	0	133	359	67	457	1213	204	97	941	512
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	684	821		469	436	195	670	1696	756	149	1185	766
Arrive On Green	0.25	0.39	0.00	0.04	0.12	0.12	0.06	0.16	0.16	0.05	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	559	501	0	133	359	67	457	1213	204	97	941	512
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	16.7	13.6	0.0	4.0	11.8	4.6	15.5	38.9	13.6	4.8	28.8	9.9
Cycle Q Clear(g_c), s	16.7	13.6	0.0	4.0	11.8	4.6	15.5	38.9	13.6	4.8	28.8	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	684	821		469	436	195	670	1696	756	149	1185	766
V/C Ratio(X)	0.82	0.61		0.28	0.82	0.34	0.68	0.72	0.27	0.65	0.79	0.67
Avail Cap(c_a), veh/h	684	918		469	533	238	670	1696	756	149	1185	766
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.00	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	32.5	0.0	43.6	51.4	48.2	52.5	42.8	32.2	34.8	36.3	7.9
Incr Delay (d2), s/veh	6.7	0.8	0.0	0.3	8.4	1.0	2.4	2.2	0.7	9.6	5.5	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	5.1	0.0	1.7	5.7	1.9	7.4	19.0	5.9	2.4	13.0	4.6
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	39.6	33.3	0.0	43.9	59.8	49.3	54.9	45.0	32.9	44.4	41.8	12.5
LnGrp LOS	D	C	A	D	E	D	D	D	C	D	D	B
Approach Vol, veh/h	1246			559			1874			1550		
Approach Delay, s/veh	31.2			54.8			46.1			32.3		
Approach LOS	C			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	63.3	11.0	33.7	29.3	46.0	24.0	20.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	54.0	5.0	31.0	20.0	40.0	18.0	18.0				
Max Q Clear Time (g_c+l1), s	6.8	40.9	6.0	15.6	17.5	30.8	18.7	13.8				
Green Ext Time (p_c), s	0.0	7.2	0.0	2.7	0.5	5.3	0.0	0.9				

Intersection Summary

HCM 6th Ctrl Delay 39.4

HCM 6th LOS D

Notes

Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay.

Timings

2028 Total PM - Improved

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	646	509	330	189	529	72	430	955	151	104	1046	753
Future Volume (vph)	646	509	330	189	529	72	430	955	151	104	1046	753
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4		Free	8		8			2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
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)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0
Total Split (s)	29.0	40.0		13.0	24.0	24.0	21.0	55.0	55.0	12.0	46.0	29.0
Total Split (%)	24.2%	33.3%		10.8%	20.0%	20.0%	17.5%	45.8%	45.8%	10.0%	38.3%	24.2%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 120

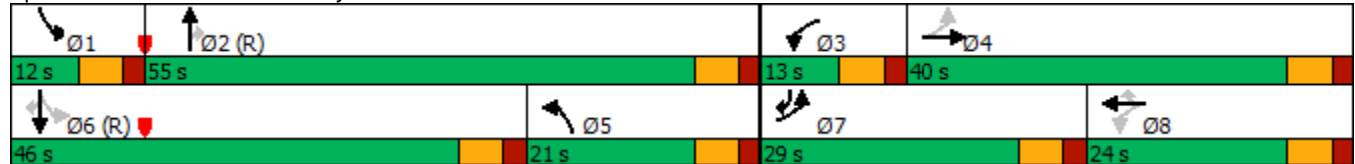
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2028 Total PM - Improved

02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	646	509	330	189	529	72	430	955	151	104	1046	753
Future Volume (veh/h)	646	509	330	189	529	72	430	955	151	104	1046	753
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	695	547	0	203	569	77	462	1027	162	112	1125	810
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	760	983		537	533	238	455	1475	658	204	1185	822
Arrive On Green	0.06	0.09	0.00	0.06	0.15	0.15	0.26	0.83	0.83	0.05	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	695	547	0	203	569	77	462	1027	162	112	1125	810
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	19.8	17.7	0.0	5.9	18.0	5.2	15.8	14.0	2.6	5.6	37.1	25.6
Cycle Q Clear(g_c), s	19.8	17.7	0.0	5.9	18.0	5.2	15.8	14.0	2.6	5.6	37.1	25.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	760	983		537	533	238	455	1475	658	204	1185	822
V/C Ratio(X)	0.92	0.56		0.38	1.07	0.32	1.02	0.70	0.25	0.55	0.95	0.99
Avail Cap(c_a), veh/h	782	1007		537	533	238	455	1475	658	204	1185	822
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.00	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	47.5	0.0	40.0	51.0	45.6	44.2	7.2	6.2	32.8	39.0	9.2
Incr Delay (d2), s/veh	9.6	0.4	0.0	0.4	58.2	0.8	42.3	2.3	0.7	3.1	16.6	28.1
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	10.2	8.5	0.0	2.6	12.3	2.1	8.5	3.2	0.9	2.6	18.6	12.9
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	49.7	47.8	0.0	40.4	109.2	46.3	86.5	9.4	6.9	35.9	55.6	37.3
LnGrp LOS	D	D	A	D	F	D	F	A	A	D	E	D
Approach Vol, veh/h	1597			849			1651			2047		
Approach Delay, s/veh	38.0			87.1			30.7			47.3		
Approach LOS	D			F			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	55.8	13.0	39.2	21.8	46.0	28.2	24.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	49.0	7.0	34.0	15.0	40.0	23.0	18.0				
Max Q Clear Time (g_c+l1), s	7.6	16.0	7.9	19.7	17.8	39.1	21.8	20.0				
Green Ext Time (p_c), s	0.0	9.8	0.0	3.2	0.0	0.8	0.4	0.0				

Intersection Summary

HCM 6th Ctrl Delay 45.9

HCM 6th LOS D

Notes

Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay.

Timings 8: Broadway & Mineral Avenue

2045 Background AM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	500	108	141	350	70	365	1365	215	103	1060	357
Future Volume (vph)	387	500	108	141	350	70	365	1365	215	103	1060	357
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	17.0	30.0		11.0	24.0	24.0	31.0	66.0	66.0	13.0	48.0	48.0
Total Split (%)	14.2%	25.0%		9.2%	20.0%	20.0%	25.8%	55.0%	55.0%	10.8%	40.0%	40.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

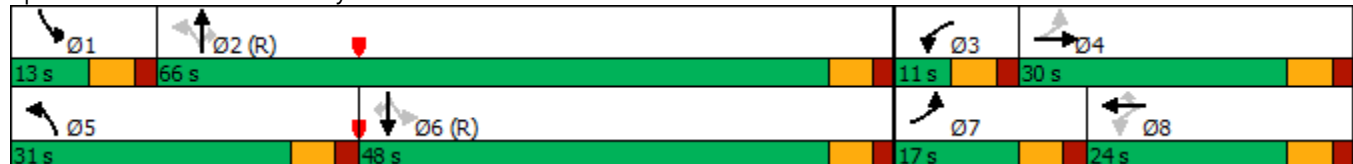
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary 8: Broadway & Mineral Avenue

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			 			 	
Traffic Volume (veh/h)	387	500	108	141	350	70	365	1365	215	103	1060	357
Future Volume (veh/h)	387	500	108	141	350	70	365	1365	215	103	1060	357
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	399	515	0	145	361	72	376	1407	222	106	1093	368
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	483	618		316	440	196	410	1904	849	206	1499	669
Arrive On Green	0.03	0.06	0.00	0.04	0.12	0.12	0.11	0.36	0.36	0.05	0.42	0.42
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	399	515	0	145	361	72	376	1407	222	106	1093	368
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.0	17.2	0.0	4.4	11.9	5.0	16.9	41.5	11.9	4.0	30.8	21.0
Cycle Q Clear(g_c), s	11.0	17.2	0.0	4.4	11.9	5.0	16.9	41.5	11.9	4.0	30.8	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	483	618		316	440	196	410	1904	849	206	1499	669
V/C Ratio(X)	0.83	0.83		0.46	0.82	0.37	0.92	0.74	0.26	0.52	0.73	0.55
Avail Cap(c_a), veh/h	483	711		316	533	238	491	1904	849	223	1499	669
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	54.8	0.0	44.2	51.3	48.3	32.7	31.1	21.7	22.8	29.0	26.1
Incr Delay (d2), s/veh	10.3	6.9	0.0	1.0	8.4	1.1	17.0	2.1	0.6	2.0	3.2	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.8	0.0	1.9	5.8	2.0	13.4	19.2	4.9	1.8	13.6	8.5
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	54.9	61.7	0.0	45.2	59.7	49.4	49.7	33.3	22.3	24.8	32.1	29.4
LnGrp LOS	D	E	A	D	E	D	D	C	C	C	C	C
Approach Vol, veh/h	1025			578			2005			1567		
Approach Delay, s/veh	52.4			54.8			35.1			31.0		
Approach LOS	D			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	70.3	11.0	26.9	25.5	56.6	17.0	20.9				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	7.0	60.0	5.0	24.0	25.0	42.0	11.0	18.0				
Max Q Clear Time (g_c+l1), s	6.0	43.5	6.4	19.2	18.9	32.8	13.0	13.9				
Green Ext Time (p_c), s	0.0	10.3	0.0	1.4	0.7	5.8	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	39.5											
HCM 6th LOS	D											

Timings 8: Broadway & Mineral Avenue

2045 Background PM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	521	168	205	537	78	296	1168	164	113	1283	518
Future Volume (vph)	436	521	168	205	537	78	296	1168	164	113	1283	518
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	17.0	31.0		12.0	26.0	26.0	23.0	62.0	62.0	15.0	54.0	54.0
Total Split (%)	14.2%	25.8%		10.0%	21.7%	21.7%	19.2%	51.7%	51.7%	12.5%	45.0%	45.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

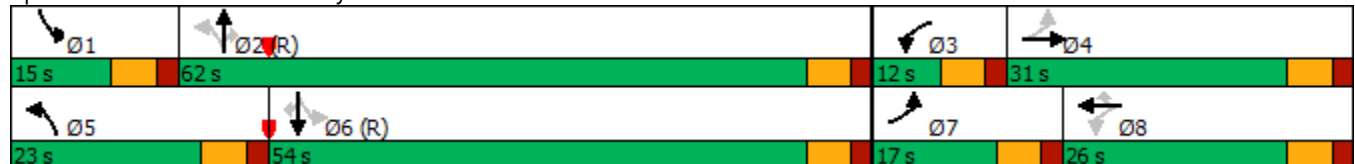
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2045 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	436	521	168	205	537	78	296	1168	164	113	1283	518
Future Volume (veh/h)	436	521	168	205	537	78	296	1168	164	113	1283	518
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	469	560	0	220	577	84	318	1256	176	122	1380	557
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	444	740		381	592	264	317	1725	770	236	1421	634
Arrive On Green	0.03	0.07	0.00	0.05	0.17	0.17	0.14	0.49	0.49	0.06	0.40	0.40
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	469	560	0	220	577	84	318	1256	176	122	1380	557
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.0	18.6	0.0	6.0	19.4	5.6	17.0	33.7	7.7	4.8	45.7	39.0
Cycle Q Clear(g_c), s	11.0	18.6	0.0	6.0	19.4	5.6	17.0	33.7	7.7	4.8	45.7	39.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	444	740		381	592	264	317	1725	770	236	1421	634
V/C Ratio(X)	1.06	0.76		0.58	0.97	0.32	1.00	0.73	0.23	0.52	0.97	0.88
Avail Cap(c_a), veh/h	444	740		381	592	264	317	1725	770	270	1421	634
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.00	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	52.9	0.0	41.0	49.7	44.0	39.0	24.6	17.9	22.5	35.3	33.3
Incr Delay (d2), s/veh	52.8	3.5	0.0	2.2	30.4	0.7	46.0	2.2	0.5	1.7	17.9	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	9.2	0.0	2.8	11.1	2.3	13.5	14.4	2.9	2.1	22.8	17.5
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	96.2	56.4	0.0	43.1	80.2	44.7	84.9	26.7	18.4	24.2	53.2	49.2
LnGrp LOS	F	E	A	D	F	D	F	C	B	C	D	D
Approach Vol, veh/h	1210			881			1750			2059		
Approach Delay, s/veh	63.4			67.5			36.5			50.4		
Approach LOS	E			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	64.3	12.0	31.0	23.0	54.0	17.0	26.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	56.0	6.0	25.0	17.0	48.0	11.0	20.0				
Max Q Clear Time (g_c+l1), s	6.8	35.7	8.0	20.6	19.0	47.7	13.0	21.4				
Green Ext Time (p_c), s	0.1	10.3	0.0	1.5	0.0	0.3	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 51.5

HCM 6th LOS D

Notes

Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay.

Timings 8: Broadway & Mineral Avenue

2045 Total AM
11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	563	525	183	141	375	70	468	1288	215	103	999	518
Future Volume (vph)	563	525	183	141	375	70	468	1288	215	103	999	518
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	20.0	33.0		11.0	24.0	24.0	34.0	63.0	63.0	13.0	42.0	42.0
Total Split (%)	16.7%	27.5%		9.2%	20.0%	20.0%	28.3%	52.5%	52.5%	10.8%	35.0%	35.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary 8: Broadway & Mineral Avenue

2045 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 			 			 	
Traffic Volume (veh/h)	563	525	183	141	375	70	468	1288	215	103	999	518
Future Volume (veh/h)	563	525	183	141	375	70	468	1288	215	103	999	518
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	580	541	0	145	387	72	482	1328	222	106	1030	534
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	566	729		357	462	206	490	1772	790	224	1137	507
Arrive On Green	0.04	0.07	0.00	0.04	0.13	0.13	0.23	0.50	0.50	0.05	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	580	541	0	145	387	72	482	1328	222	106	1030	534
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	14.0	17.9	0.0	4.4	12.8	5.0	27.3	35.9	9.8	4.7	33.3	38.4
Cycle Q Clear(g_c), s	14.0	17.9	0.0	4.4	12.8	5.0	27.3	35.9	9.8	4.7	33.3	38.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	566	729		357	462	206	490	1772	790	224	1137	507
V/C Ratio(X)	1.02	0.74		0.41	0.84	0.35	0.98	0.75	0.28	0.47	0.91	1.05
Avail Cap(c_a), veh/h	566	800		357	533	238	490	1772	790	230	1137	507
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	52.8	0.0	43.3	51.0	47.6	35.6	24.1	17.5	26.2	39.1	40.8
Incr Delay (d2), s/veh	41.0	2.9	0.0	0.7	10.0	1.0	32.3	2.4	0.7	1.6	11.9	54.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.9	0.0	1.9	6.3	2.0	18.5	15.2	3.7	2.1	16.2	22.4
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	86.5	55.7	0.0	44.1	61.0	48.6	68.0	26.5	18.3	27.8	51.0	95.5
LnGrp LOS	F	E	A	D	E	D	E	C	B	C	D	F
Approach Vol, veh/h	1310			604			2032			1670		
Approach Delay, s/veh	61.3			55.5			35.4			63.7		
Approach LOS	E			E			D			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.6	65.8	11.0	30.6	34.0	44.4	20.0	21.6				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	7.0	57.0	5.0	27.0	28.0	36.0	14.0	18.0				
Max Q Clear Time (g_c+I1), s	6.7	37.9	6.4	19.9	29.3	40.4	16.0	14.8				
Green Ext Time (p_c), s	0.0	10.7	0.0	2.0	0.0	0.0	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			52.0									
HCM 6th LOS			D									
Notes												

Timings

8: Broadway & Mineral Avenue

2045 Total PM

11/10/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	674	551	339	205	571	78	449	1050	164	113	1150	787
Future Volume (vph)	674	551	339	205	571	78	449	1050	164	113	1150	787
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0
Total Split (s)	21.0	34.0		11.0	24.0	24.0	26.0	60.0	60.0	15.0	49.0	49.0
Total Split (%)	17.5%	28.3%		9.2%	20.0%	20.0%	21.7%	50.0%	50.0%	12.5%	40.8%	40.8%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max

Intersection Summary

Cycle Length: 120

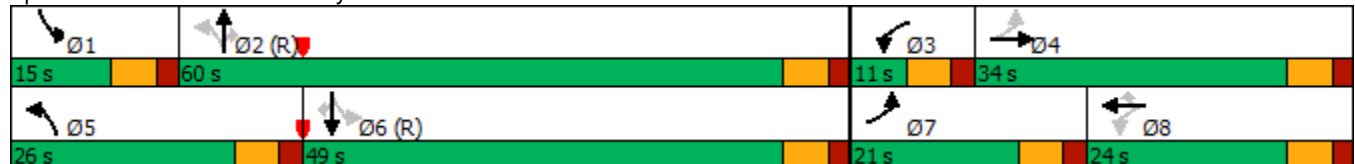
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2045 Total PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	674	551	339	205	571	78	449	1050	164	113	1150	787
Future Volume (veh/h)	674	551	339	205	571	78	449	1050	164	113	1150	787
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	725	592	0	220	614	84	483	1129	176	122	1237	846
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	829		377	533	238	360	1656	739	244	1273	568
Arrive On Green	0.04	0.08	0.00	0.04	0.15	0.15	0.11	0.31	0.31	0.06	0.36	0.36
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	725	592	0	220	614	84	483	1129	176	122	1237	846
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	15.0	19.5	0.0	5.0	18.0	5.7	20.0	33.3	9.9	5.1	41.1	43.0
Cycle Q Clear(g_c), s	15.0	19.5	0.0	5.0	18.0	5.7	20.0	33.3	9.9	5.1	41.1	43.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	829		377	533	238	360	1656	739	244	1273	568
V/C Ratio(X)	1.31	0.71		0.58	1.15	0.35	1.34	0.68	0.24	0.50	0.97	1.49
Avail Cap(c_a), veh/h	552	829		377	533	238	360	1656	739	273	1273	568
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.00	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	51.5	0.0	44.7	51.0	45.8	41.9	33.5	25.4	24.3	37.9	38.5
Incr Delay (d2), s/veh	148.0	1.6	0.0	2.3	88.2	0.9	167.8	1.8	0.6	1.6	19.2	229.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	9.5	0.0	0.9	14.5	2.3	23.6	15.5	4.1	2.3	20.9	52.6
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	189.6	53.0	0.0	47.0	139.2	46.7	209.7	35.3	26.0	25.9	57.1	268.0
LnGrp LOS	F	D	A	D	F	D	F	D	C	C	E	F
Approach Vol, veh/h	1682			918			1788			2205		
Approach Delay, s/veh	100.4			108.6			81.5			136.3		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.1	61.9	11.0	34.0	26.0	49.0	21.0	24.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	54.0	5.0	28.0	20.0	43.0	15.0	18.0				
Max Q Clear Time (g_c+l1), s	7.1	35.3	7.0	21.5	22.0	45.0	17.0	20.0				
Green Ext Time (p_c), s	0.0	8.8	0.0	2.1	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			108.4									
HCM 6th LOS			F									
Notes												

Timings

8: Broadway & Mineral Avenue

2045 Total AM - Improved

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	563	525	183	141	375	70	468	1288	215	103	999	518
Future Volume (vph)	563	525	183	141	375	70	468	1288	215	103	999	518
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4		Free	8		8			2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
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)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0
Total Split (s)	24.0	37.0		11.0	24.0	24.0	25.0	61.0	61.0	11.0	47.0	24.0
Total Split (%)	20.0%	30.8%		9.2%	20.0%	20.0%	20.8%	50.8%	50.8%	9.2%	39.2%	20.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 120

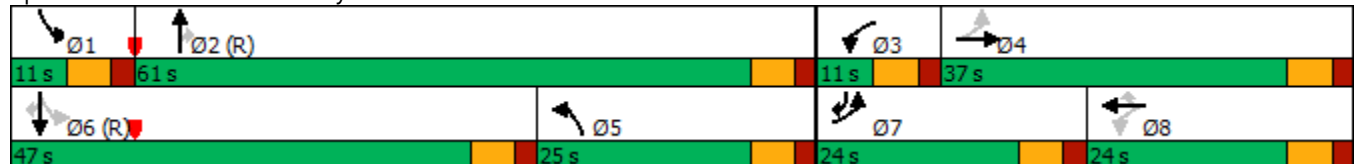
Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2045 Total AM - Improved

02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	563	525	183	141	375	70	468	1288	215	103	999	518
Future Volume (veh/h)	563	525	183	141	375	70	468	1288	215	103	999	518
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	580	541	0	145	387	72	482	1328	222	106	1030	534
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	681	847		458	462	206	616	1700	758	134	1214	779
Arrive On Green	0.25	0.40	0.00	0.04	0.13	0.13	0.06	0.16	0.16	0.04	0.34	0.34
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	580	541	0	145	387	72	482	1328	222	106	1030	534
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	17.4	14.7	0.0	4.4	12.8	5.0	16.5	43.1	14.8	5.0	32.2	11.0
Cycle Q Clear(g_c), s	17.4	14.7	0.0	4.4	12.8	5.0	16.5	43.1	14.8	5.0	32.2	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	681	847		458	462	206	616	1700	758	134	1214	779
V/C Ratio(X)	0.85	0.64		0.32	0.84	0.35	0.78	0.78	0.29	0.79	0.85	0.69
Avail Cap(c_a), veh/h	681	918		458	533	238	616	1700	758	134	1214	779
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.00	1.00	1.00	1.00	0.80	0.80	0.80	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	31.9	0.0	43.0	51.0	47.6	54.2	44.5	32.6	35.8	36.6	7.6
Incr Delay (d2), s/veh	8.6	1.1	0.0	0.4	10.0	1.0	5.3	2.9	0.8	26.4	7.5	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	5.6	0.0	1.9	6.3	2.0	8.1	21.3	6.5	3.2	15.1	4.8
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	41.2	33.1	0.0	43.4	61.0	48.6	59.4	47.4	33.4	62.2	44.1	12.5
LnGrp LOS	D	C	A	D	E	D	E	D	C	E	D	B
Approach Vol, veh/h	1310			604			2032			1670		
Approach Delay, s/veh	31.9			55.3			48.8			35.1		
Approach LOS	C			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	63.4	11.0	34.6	27.4	47.0	24.0	21.6				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	55.0	5.0	31.0	19.0	41.0	18.0	18.0				
Max Q Clear Time (g_c+l1), s	7.0	45.1	6.4	16.7	18.5	34.2	19.4	14.8				
Green Ext Time (p_c), s	0.0	6.7	0.0	3.1	0.1	4.6	0.0	0.9				

Intersection Summary

HCM 6th Ctrl Delay 41.5

HCM 6th LOS D

Notes

Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay.

Timings

8: Broadway & Mineral Avenue

2045 Total PM - Improved

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	674	551	339	205	571	78	449	1050	164	113	1150	787
Future Volume (vph)	674	551	339	205	571	78	449	1050	164	113	1150	787
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4		Free	8		8			2	6		6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
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)	11.0	24.0		11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	11.0
Total Split (s)	27.0	38.0		14.0	25.0	25.0	22.0	56.0	56.0	12.0	46.0	27.0
Total Split (%)	22.5%	31.7%		11.7%	20.8%	20.8%	18.3%	46.7%	46.7%	10.0%	38.3%	22.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 120

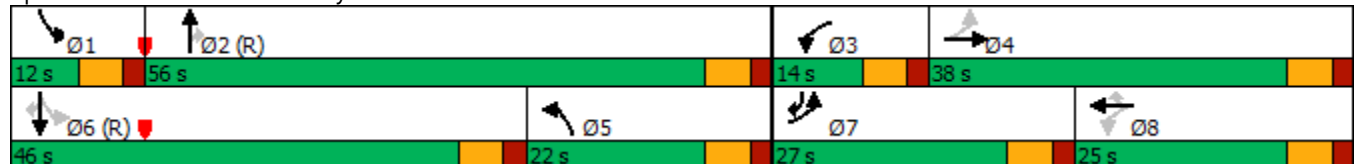
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 8: Broadway & Mineral Avenue



HCM 6th Signalized Intersection Summary

8: Broadway & Mineral Avenue

2045 Total PM - Improved

02/06/2024

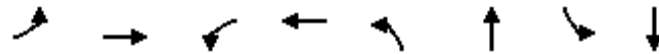
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	674	551	339	205	571	78	449	1050	164	113	1150	787
Future Volume (veh/h)	674	551	339	205	571	78	449	1050	164	113	1150	787
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	725	592	0	220	614	84	483	1129	176	122	1237	717
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	725	948		520	563	251	461	1481	660	186	1185	806
Arrive On Green	0.06	0.09	0.00	0.07	0.16	0.16	0.27	0.83	0.83	0.05	0.33	0.33
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	725	592	0	220	614	84	483	1129	176	122	1237	717
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	21.0	19.3	0.0	6.3	19.0	5.7	16.0	17.4	2.9	6.0	40.0	20.6
Cycle Q Clear(g_c), s	21.0	19.3	0.0	6.3	19.0	5.7	16.0	17.4	2.9	6.0	40.0	20.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	725	948		520	563	251	461	1481	660	186	1185	806
V/C Ratio(X)	1.00	0.62		0.42	1.09	0.33	1.05	0.76	0.27	0.66	1.04	0.89
Avail Cap(c_a), veh/h	725	948		520	563	251	461	1481	660	186	1185	806
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.00	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	48.9	0.0	38.7	50.5	44.9	44.0	7.3	6.1	34.3	40.0	8.4
Incr Delay (d2), s/veh	24.2	0.7	0.0	0.5	65.2	0.8	50.3	3.0	0.8	8.0	38.5	14.1
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	12.1	9.3	0.0	2.7	13.5	2.3	9.1	3.5	1.0	3.1	23.5	8.4
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	66.1	49.6	0.0	39.2	115.7	45.7	94.3	10.2	6.8	42.3	78.5	22.5
LnGrp LOS	F	D	A	D	F	D	F	B	A	D	F	C
Approach Vol, veh/h	1682			918			1788			2076		
Approach Delay, s/veh	45.9			90.9			32.6			57.0		
Approach LOS	D			F			C			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	56.0	14.0	38.0	22.0	46.0	27.0	25.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	50.0	8.0	32.0	16.0	40.0	21.0	19.0				
Max Q Clear Time (g_c+l1), s	8.0	19.4	8.3	21.3	18.0	42.0	23.0	21.0				
Green Ext Time (p_c), s	0.0	10.9	0.0	2.9	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			52.2									
HCM 6th LOS			D									
Notes												

Timings

2023 Adjusted Existing AM

9: Broadway & Grant Way

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↑↑↑	↰	↑↑↑
Traffic Volume (vph)	57	10	42	11	121	1508	44	1175
Future Volume (vph)	57	10	42	11	121	1508	44	1175
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	30.0	30.0	30.0	30.0	24.0	74.0	16.0	66.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	20.0%	61.7%	13.3%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

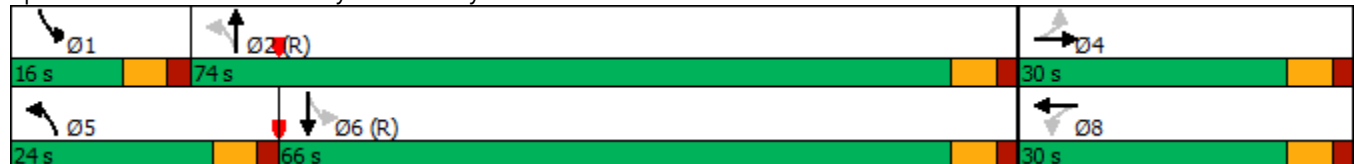
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

9: Broadway & Grant Way

2023 Adjusted Existing AM

11/10/2023

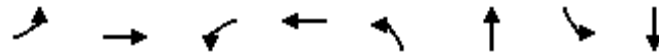
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	10	80	42	11	23	121	1508	25	44	1175	82
Future Volume (veh/h)	57	10	80	42	11	23	121	1508	25	44	1175	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	11	84	44	12	24	127	1587	26	46	1237	86
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	20	153	127	60	119	424	3675	60	338	3421	238
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.08	1.00	1.00	0.07	1.00	1.00
Sat Flow, veh/h	1372	187	1427	1301	557	1113	1781	5174	85	1781	4875	339
Grp Volume(v), veh/h	60	0	95	44	0	36	127	1044	569	46	864	459
Grp Sat Flow(s),veh/h/ln	1372	0	1614	1301	0	1670	1781	1702	1855	1781	1702	1809
Q Serve(g_s), s	5.0	0.0	6.7	4.0	0.0	2.4	2.5	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	6.7	10.7	0.0	2.4	2.5	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.88	1.00		0.67	1.00		0.05	1.00		0.19
Lane Grp Cap(c), veh/h	180	0	173	127	0	179	424	2418	1318	338	2389	1270
V/C Ratio(X)	0.33	0.00	0.55	0.35	0.00	0.20	0.30	0.43	0.43	0.14	0.36	0.36
Avail Cap(c_a), veh/h	307	0	323	247	0	334	618	2418	1318	429	2389	1270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.87	0.87	0.87	0.81	0.81	0.81
Uniform Delay (d), s/veh	52.3	0.0	50.8	55.9	0.0	48.9	4.1	0.0	0.0	4.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	2.7	1.6	0.0	0.5	0.3	0.5	0.9	0.1	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.8	1.4	0.0	1.0	0.8	0.2	0.3	0.3	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	0.0	53.5	57.5	0.0	49.4	4.4	0.5	0.9	4.3	0.3	0.6
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	155			80			1740			1369		
Approach Delay, s/veh	53.5			53.9			0.9			0.6		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	91.2		18.9	10.9	90.2		18.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	10.0	68.0		24.0	18.0	60.0		24.0				
Max Q Clear Time (g_c+I1), s	2.8	2.0		9.4	4.5	2.0		12.7				
Green Ext Time (p_c), s	0.0	18.8		0.5	0.2	13.2		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				4.5								
HCM 6th LOS				A								

Timings

2023 Adjusted Existing PM

9: Broadway & Grant Way

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	60	10	104	21	133	1552	38	1635
Future Volume (vph)	60	10	104	21	133	1552	38	1635
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	29.0	29.0	29.0	29.0	24.0	78.0	13.0	67.0
Total Split (%)	24.2%	24.2%	24.2%	24.2%	20.0%	65.0%	10.8%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

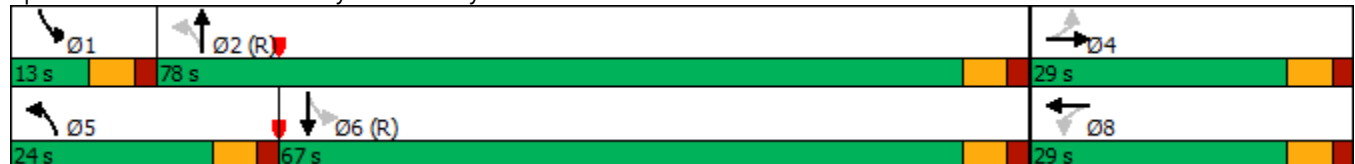
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

9: Broadway & Grant Way

2023 Adjusted Existing PM

11/10/2023

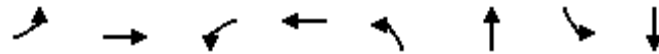
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	60	10	59	104	21	60	133	1552	28	38	1635	48
Future Volume (veh/h)	60	10	59	104	21	60	133	1552	28	38	1635	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	10	61	107	22	62	137	1600	29	39	1686	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	32	192	191	60	169	324	3519	64	320	3408	99
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.09	1.00	1.00	0.06	1.00	1.00
Sat Flow, veh/h	1314	228	1392	1329	432	1219	1781	5164	94	1781	5100	148
Grp Volume(v), veh/h	62	0	71	107	0	84	137	1055	574	39	1125	610
Grp Sat Flow(s),veh/h/ln	1314	0	1620	1329	0	1651	1781	1702	1854	1781	1702	1844
Q Serve(g_s), s	5.4	0.0	4.7	9.5	0.0	5.5	3.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	10.9	0.0	4.7	14.2	0.0	5.5	3.0	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.74	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	181	0	224	191	0	228	324	2319	1263	320	2275	1232
V/C Ratio(X)	0.34	0.00	0.32	0.56	0.00	0.37	0.42	0.45	0.45	0.12	0.49	0.49
Avail Cap(c_a), veh/h	251	0	310	262	0	316	514	2319	1263	370	2275	1232
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	0.65	0.65	0.65
Uniform Delay (d), s/veh	51.9	0.0	46.6	53.0	0.0	46.9	5.2	0.0	0.0	5.4	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.8	2.5	0.0	1.0	0.7	0.5	1.0	0.1	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	2.0	3.3	0.0	2.3	1.0	0.2	0.3	0.3	0.2	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	0.0	47.4	55.5	0.0	47.9	5.9	0.5	1.0	5.5	0.5	0.9
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	133			191			1766			1774		
Approach Delay, s/veh	50.0			52.2			1.1			0.8		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	87.8		22.6	11.2	86.2		22.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	72.0		23.0	18.0	61.0		23.0				
Max Q Clear Time (g_c+l1), s	2.8	2.0		12.9	5.0	2.0		16.2				
Green Ext Time (p_c), s	0.0	19.4		0.3	0.3	21.1		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				5.1								
HCM 6th LOS				A								

Timings

2028 Background AM

9: Broadway & Grant Way

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↰	↱	↰	↱	↰	↑↑↑	↰	↑↑↑
Traffic Volume (vph)	64	11	47	12	136	1787	49	1444
Future Volume (vph)	64	11	47	12	136	1787	49	1444
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	25.0	78.0	14.0	67.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	20.8%	65.0%	11.7%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

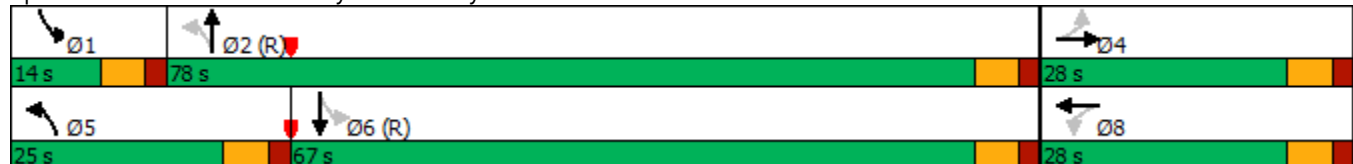
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



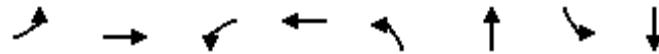
HCM 6th Signalized Intersection Summary

9: Broadway & Grant Way

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	11	90	47	12	26	136	1787	28	49	1444	92
Future Volume (veh/h)	64	11	90	47	12	26	136	1787	28	49	1444	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	12	95	49	13	27	143	1881	29	52	1520	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	21	169	131	64	133	338	3614	56	283	3379	216
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.09	1.00	1.00	0.05	0.92	0.92
Sat Flow, veh/h	1367	181	1432	1287	542	1126	1781	5180	80	1781	4905	313
Grp Volume(v), veh/h	67	0	107	49	0	40	143	1236	674	52	1055	562
Grp Sat Flow(s),veh/h/ln	1367	0	1613	1287	0	1668	1781	1702	1856	1781	1702	1814
Q Serve(g_s), s	5.6	0.0	7.5	4.5	0.0	2.6	2.9	0.0	0.0	1.0	5.3	5.3
Cycle Q Clear(g_c), s	8.2	0.0	7.5	12.0	0.0	2.6	2.9	0.0	0.0	1.0	5.3	5.3
Prop In Lane	1.00		0.89	1.00		0.68	1.00		0.04	1.00		0.17
Lane Grp Cap(c), veh/h	192	0	190	131	0	197	338	2375	1295	283	2345	1250
V/C Ratio(X)	0.35	0.00	0.56	0.37	0.00	0.20	0.42	0.52	0.52	0.18	0.45	0.45
Avail Cap(c_a), veh/h	281	0	296	215	0	306	544	2375	1295	341	2345	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.79	0.79	0.79	0.73	0.73	0.73
Uniform Delay (d), s/veh	51.5	0.0	50.0	55.7	0.0	47.8	4.7	0.0	0.0	4.7	1.8	1.8
Incr Delay (d2), s/veh	1.1	0.0	2.6	1.8	0.0	0.5	0.7	0.6	1.2	0.2	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	3.2	1.5	0.0	1.1	0.9	0.2	0.4	0.3	1.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	52.6	57.4	0.0	48.3	5.4	0.6	1.2	4.9	2.2	2.6
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	174			89			2053			1669		
Approach Delay, s/veh	52.6			53.3			1.2			2.5		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	89.7		20.2	11.2	88.7		20.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	72.0		22.0	19.0	61.0		22.0				
Max Q Clear Time (g_c+I1), s	3.0	2.0		10.2	4.9	7.3		14.0				
Green Ext Time (p_c), s	0.0	23.4		0.6	0.3	16.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	5.1											
HCM 6th LOS	A											



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	66	11	114	23	146	1805	42	1943
Future Volume (vph)	66	11	114	23	146	1805	42	1943
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	27.0	27.0	27.0	27.0	21.0	82.0	11.0	72.0
Total Split (%)	22.5%	22.5%	22.5%	22.5%	17.5%	68.3%	9.2%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

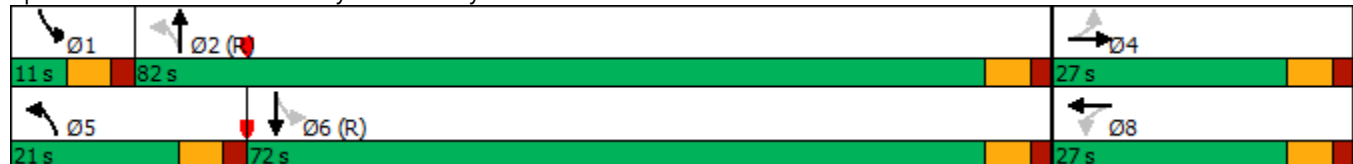
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

2028 Background PM

9: Broadway & Grant Way

11/10/2023

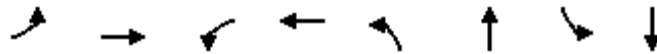
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	11	65	114	23	66	146	1805	31	42	1943	53
Future Volume (veh/h)	66	11	65	114	23	66	146	1805	31	42	1943	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	11	67	118	24	68	151	1861	32	43	2003	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	34	208	201	64	182	277	3458	59	273	3337	91
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.09	1.00	1.00	0.06	1.00	1.00
Sat Flow, veh/h	1304	228	1391	1321	431	1220	1781	5170	89	1781	5109	140
Grp Volume(v), veh/h	68	0	78	118	0	92	151	1225	668	43	1334	724
Grp Sat Flow(s),veh/h/ln	1304	0	1620	1321	0	1651	1781	1702	1854	1781	1702	1845
Q Serve(g_s), s	5.9	0.0	5.2	10.5	0.0	6.0	3.5	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	5.2	15.7	0.0	6.0	3.5	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.74	1.00		0.05	1.00		0.08
Lane Grp Cap(c), veh/h	189	0	242	201	0	247	277	2277	1240	273	2223	1205
V/C Ratio(X)	0.36	0.00	0.32	0.59	0.00	0.37	0.54	0.54	0.54	0.16	0.60	0.60
Avail Cap(c_a), veh/h	223	0	283	234	0	289	415	2277	1240	290	2223	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.72	0.72	0.72	0.57	0.57	0.57
Uniform Delay (d), s/veh	51.4	0.0	45.6	52.6	0.0	46.0	5.6	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.8	2.8	0.0	0.9	1.2	0.7	1.2	0.2	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.1	3.6	0.0	2.5	1.2	0.2	0.4	0.3	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	0.0	46.4	55.4	0.0	46.9	6.8	0.7	1.2	6.1	0.7	1.3
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	146			210			2044			2101		
Approach Delay, s/veh	49.2			51.7			1.3			1.0		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	86.3		23.9	11.7	84.4		23.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	76.0		21.0	15.0	66.0		21.0				
Max Q Clear Time (g_c+l1), s	2.9	2.0		14.0	5.5	2.0		17.7				
Green Ext Time (p_c), s	0.0	26.4		0.3	0.3	29.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				5.1								
HCM 6th LOS				A								

Timings

9: Broadway & Grant Way

2028 Total AM

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	11	47	12	136	1813	49	1463
Future Volume (vph)	64	11	47	12	136	1813	49	1463
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	25.0	78.0	14.0	67.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	20.8%	65.0%	11.7%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way

Ø1	Ø2 (R)	Ø4
14 s	78 s	28 s
Ø5	Ø6 (R)	Ø8
25 s	67 s	28 s

HCM 6th Signalized Intersection Summary

2028 Total AM

9: Broadway & Grant Way

11/10/2023

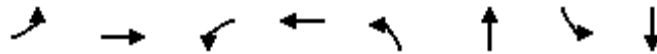
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	11	90	47	12	26	136	1813	28	49	1463	92
Future Volume (veh/h)	64	11	90	47	12	26	136	1813	28	49	1463	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	12	95	49	13	27	143	1908	29	52	1540	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	21	169	131	64	133	334	3615	55	279	3382	213
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.09	1.00	1.00	0.05	0.92	0.92
Sat Flow, veh/h	1367	181	1432	1287	542	1126	1781	5182	79	1781	4910	309
Grp Volume(v), veh/h	67	0	107	49	0	40	143	1253	684	52	1068	569
Grp Sat Flow(s),veh/h/ln	1367	0	1613	1287	0	1668	1781	1702	1856	1781	1702	1815
Q Serve(g_s), s	5.6	0.0	7.5	4.5	0.0	2.6	2.9	0.0	0.0	1.0	5.4	5.4
Cycle Q Clear(g_c), s	8.2	0.0	7.5	12.0	0.0	2.6	2.9	0.0	0.0	1.0	5.4	5.4
Prop In Lane	1.00		0.89	1.00		0.68	1.00		0.04	1.00		0.17
Lane Grp Cap(c), veh/h	192	0	190	131	0	197	334	2375	1295	279	2345	1250
V/C Ratio(X)	0.35	0.00	0.56	0.37	0.00	0.20	0.43	0.53	0.53	0.19	0.46	0.46
Avail Cap(c_a), veh/h	281	0	296	215	0	306	539	2375	1295	337	2345	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.77	0.77	0.77	0.66	0.66	0.66
Uniform Delay (d), s/veh	51.5	0.0	50.0	55.7	0.0	47.8	4.7	0.0	0.0	4.7	1.8	1.8
Incr Delay (d2), s/veh	1.1	0.0	2.6	1.8	0.0	0.5	0.7	0.6	1.2	0.2	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	3.2	1.5	0.0	1.1	0.9	0.2	0.4	0.3	1.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	52.6	57.4	0.0	48.3	5.4	0.6	1.2	4.9	2.2	2.6
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	174			89			2080			1689		
Approach Delay, s/veh	52.6			53.3			1.2			2.4		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	89.7		20.2	11.2	88.7		20.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	72.0		22.0	19.0	61.0		22.0				
Max Q Clear Time (g_c+l1), s	3.0	2.0		10.2	4.9	7.4		14.0				
Green Ext Time (p_c), s	0.0	24.1		0.6	0.3	16.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	5.1											
HCM 6th LOS	A											

Timings

9: Broadway & Grant Way

2028 Total PM

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	66	11	114	23	146	1840	42	1982
Future Volume (vph)	66	11	114	23	146	1840	42	1982
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	26.0	26.0	26.0	26.0	21.0	83.0	11.0	73.0
Total Split (%)	21.7%	21.7%	21.7%	21.7%	17.5%	69.2%	9.2%	60.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

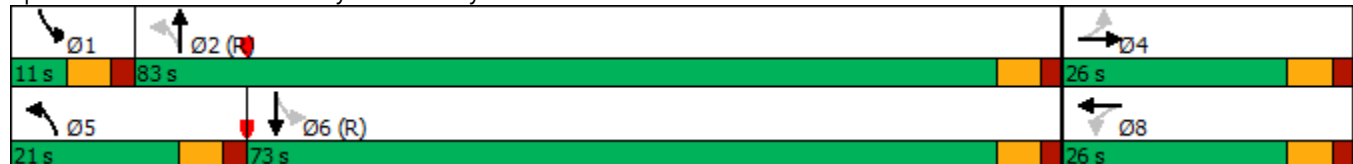
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

2028 Total PM

9: Broadway & Grant Way

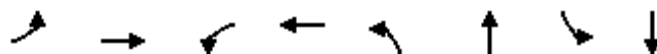
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	11	65	114	23	66	146	1840	31	42	1982	53
Future Volume (veh/h)	66	11	65	114	23	66	146	1840	31	42	1982	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	11	67	118	24	68	151	1897	32	43	2043	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	34	207	200	64	182	272	3461	58	267	3341	90
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.09	1.00	1.00	0.06	1.00	1.00
Sat Flow, veh/h	1304	228	1391	1321	431	1220	1781	5172	87	1781	5112	137
Grp Volume(v), veh/h	68	0	78	118	0	92	151	1248	681	43	1359	739
Grp Sat Flow(s),veh/h/ln	1304	0	1620	1321	0	1651	1781	1702	1855	1781	1702	1846
Q Serve(g_s), s	5.9	0.0	5.2	10.5	0.0	6.0	3.5	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	5.2	15.7	0.0	6.0	3.5	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.74	1.00		0.05	1.00		0.07
Lane Grp Cap(c), veh/h	189	0	241	200	0	246	272	2278	1241	267	2225	1206
V/C Ratio(X)	0.36	0.00	0.32	0.59	0.00	0.37	0.55	0.55	0.55	0.16	0.61	0.61
Avail Cap(c_a), veh/h	212	0	270	223	0	275	410	2278	1241	285	2225	1206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.69	0.69	0.69	0.64	0.64	0.64
Uniform Delay (d), s/veh	51.4	0.0	45.7	52.7	0.0	46.0	5.6	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.8	3.3	0.0	0.9	1.2	0.7	1.2	0.2	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.1	3.7	0.0	2.5	1.2	0.2	0.4	0.3	0.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	46.4	56.0	0.0	47.0	6.8	0.7	1.2	6.1	0.8	1.5
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	146			210			2080			2141		
Approach Delay, s/veh	49.3			52.0			1.3			1.2		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	86.3		23.9	11.7	84.4		23.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	77.0		20.0	15.0	67.0		20.0				
Max Q Clear Time (g_c+l1), s	2.9	2.0		14.0	5.5	2.0		17.7				
Green Ext Time (p_c), s	0.0	27.6		0.3	0.3	31.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				5.1								
HCM 6th LOS				A								

Timings 9: Broadway & Grant Way

2045 Background AM

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	71	12	52	13	152	1940	55	1564
Future Volume (vph)	71	12	52	13	152	1940	55	1564
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	26.0	26.0	26.0	26.0	25.0	79.0	15.0	69.0
Total Split (%)	21.7%	21.7%	21.7%	21.7%	20.8%	65.8%	12.5%	57.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

2045 Background AM

9: Broadway & Grant Way

11/10/2023

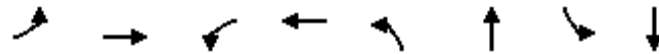
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	71	12	100	52	13	29	152	1940	31	55	1564	103
Future Volume (veh/h)	71	12	100	52	13	29	152	1940	31	55	1564	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	75	13	105	55	14	31	160	2042	33	58	1646	108
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	23	185	137	67	148	313	3548	57	258	3295	216
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.10	1.00	1.00	0.05	0.90	0.90
Sat Flow, veh/h	1361	178	1435	1274	518	1146	1781	5176	84	1781	4896	321
Grp Volume(v), veh/h	75	0	118	55	0	45	160	1342	733	58	1144	610
Grp Sat Flow(s),veh/h/ln	1361	0	1612	1274	0	1664	1781	1702	1855	1781	1702	1813
Q Serve(g_s), s	6.3	0.0	8.3	5.1	0.0	2.9	3.5	0.0	0.0	1.2	7.7	7.7
Cycle Q Clear(g_c), s	9.2	0.0	8.3	13.3	0.0	2.9	3.5	0.0	0.0	1.2	7.7	7.7
Prop In Lane	1.00		0.89	1.00		0.69	1.00		0.05	1.00		0.18
Lane Grp Cap(c), veh/h	202	0	208	137	0	214	313	2334	1272	258	2291	1220
V/C Ratio(X)	0.37	0.00	0.57	0.40	0.00	0.21	0.51	0.58	0.58	0.22	0.50	0.50
Avail Cap(c_a), veh/h	254	0	269	185	0	277	509	2334	1272	328	2291	1220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.72	0.72	0.72	0.62	0.62	0.62
Uniform Delay (d), s/veh	50.9	0.0	49.1	55.4	0.0	46.8	5.4	0.0	0.0	5.2	2.5	2.5
Incr Delay (d2), s/veh	1.1	0.0	2.4	1.9	0.0	0.5	0.9	0.7	1.4	0.3	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	3.5	1.7	0.0	1.2	1.1	0.2	0.5	0.4	1.8	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	0.0	51.6	57.3	0.0	47.3	6.3	0.7	1.4	5.5	2.9	3.4
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	193			100			2235			1812		
Approach Delay, s/veh	51.7			52.8			1.4			3.2		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	10.3	88.3	21.5		11.8	86.8	21.5					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	9.0	73.0	20.0		19.0	63.0	20.0					
Max Q Clear Time (g_c+l1), s	3.2	2.0	11.2		5.5	9.7	15.3					
Green Ext Time (p_c), s	0.0	31.4	0.5		0.3	21.0	0.1					
Intersection Summary												
HCM 6th Ctrl Delay	5.5											
HCM 6th LOS	A											

Timings

2045 Background PM

9: Broadway & Grant Way

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	66	11	114	23	146	1959	42	2106
Future Volume (vph)	66	11	114	23	146	1959	42	2106
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	23.0	81.0	11.0	69.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	19.2%	67.5%	9.2%	57.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

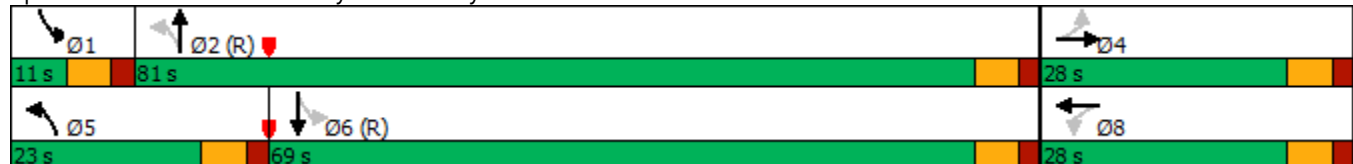
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

9: Broadway & Grant Way

2045 Background PM

11/10/2023

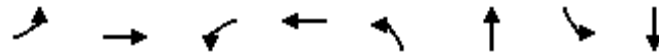
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	11	65	114	23	66	146	1959	31	42	2106	53
Future Volume (veh/h)	66	11	65	114	23	66	146	1959	31	42	2106	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	11	67	118	24	68	151	2020	32	43	2171	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	34	209	201	65	183	256	3461	55	235	3345	85
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.06	0.89	0.89	0.06	1.00	1.00
Sat Flow, veh/h	1304	228	1391	1321	431	1220	1781	5178	82	1781	5122	129
Grp Volume(v), veh/h	68	0	78	118	0	92	151	1327	725	43	1441	785
Grp Sat Flow(s),veh/h/ln	1304	0	1620	1321	0	1651	1781	1702	1856	1781	1702	1847
Q Serve(g_s), s	5.9	0.0	5.2	10.5	0.0	6.0	3.4	10.8	10.8	0.9	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	5.2	15.7	0.0	6.0	3.4	10.8	10.8	0.9	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.74	1.00		0.04	1.00		0.07
Lane Grp Cap(c), veh/h	190	0	243	201	0	247	256	2275	1240	235	2223	1206
V/C Ratio(X)	0.36	0.00	0.32	0.59	0.00	0.37	0.59	0.58	0.58	0.18	0.65	0.65
Avail Cap(c_a), veh/h	234	0	297	245	0	303	425	2275	1240	252	2223	1206
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.65	0.65	0.65	0.41	0.41	0.41
Uniform Delay (d), s/veh	51.3	0.0	45.6	52.6	0.0	45.9	5.8	2.8	2.8	6.3	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	0.8	2.7	0.0	0.9	1.4	0.7	1.3	0.2	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.1	3.6	0.0	2.5	1.2	2.3	2.7	0.3	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	0.0	46.3	55.3	0.0	46.8	7.2	3.5	4.1	6.5	0.6	1.1
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	146			210			2203			2269		
Approach Delay, s/veh	49.2			51.6			4.0			0.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	86.2		24.0	11.6	84.4		24.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	75.0		22.0	17.0	63.0		22.0				
Max Q Clear Time (g_c+I1), s	2.9	12.8		14.0	5.4	2.0		17.7				
Green Ext Time (p_c), s	0.0	29.2		0.3	0.3	33.5		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				6.0								
HCM 6th LOS				A								

Timings

9: Broadway & Grant Way

2045 Total AM

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	11	47	12	136	1966	49	1583
Future Volume (vph)	64	11	47	12	136	1966	49	1583
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	26.0	26.0	26.0	26.0	24.0	80.0	14.0	70.0
Total Split (%)	21.7%	21.7%	21.7%	21.7%	20.0%	66.7%	11.7%	58.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

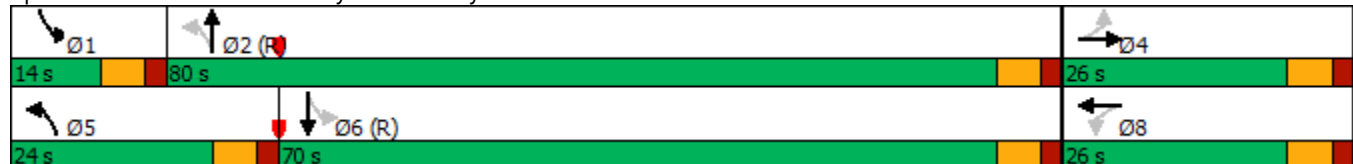
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way



HCM 6th Signalized Intersection Summary

2045 Total AM

9: Broadway & Grant Way

11/10/2023

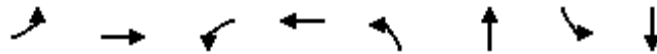
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	11	90	47	12	26	136	1966	28	49	1583	92
Future Volume (veh/h)	64	11	90	47	12	26	136	1966	28	49	1583	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	12	95	49	13	27	143	2069	29	52	1666	97
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	21	169	131	64	133	281	3621	51	256	3401	198
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.09	1.00	1.00	0.03	0.69	0.69
Sat Flow, veh/h	1367	181	1432	1287	542	1126	1781	5189	73	1781	4936	287
Grp Volume(v), veh/h	67	0	107	49	0	40	143	1357	741	52	1149	614
Grp Sat Flow(s),veh/h/ln	1367	0	1613	1287	0	1668	1781	1702	1857	1781	1702	1819
Q Serve(g_s), s	5.6	0.0	7.5	4.5	0.0	2.6	2.9	0.0	0.0	1.0	19.0	19.0
Cycle Q Clear(g_c), s	8.2	0.0	7.5	12.0	0.0	2.6	2.9	0.0	0.0	1.0	19.0	19.0
Prop In Lane	1.00		0.89	1.00		0.68	1.00		0.04	1.00		0.16
Lane Grp Cap(c), veh/h	191	0	190	131	0	196	281	2376	1296	256	2346	1253
V/C Ratio(X)	0.35	0.00	0.56	0.37	0.00	0.20	0.51	0.57	0.57	0.20	0.49	0.49
Avail Cap(c_a), veh/h	258	0	269	194	0	278	471	2376	1296	313	2346	1253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.72	0.72	0.72	0.51	0.51	0.51
Uniform Delay (d), s/veh	51.5	0.0	50.0	55.7	0.0	47.8	7.4	0.0	0.0	4.7	8.8	8.8
Incr Delay (d2), s/veh	1.1	0.0	2.6	1.8	0.0	0.5	1.0	0.7	1.3	0.2	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	3.2	1.5	0.0	1.1	1.0	0.2	0.5	0.4	6.6	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	52.6	57.5	0.0	48.4	8.4	0.7	1.3	4.9	9.1	9.5
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	174			89			2241			1815		
Approach Delay, s/veh	52.6			53.4			1.4			9.1		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	89.8		20.1	11.2	88.7		20.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	8.0	74.0		20.0	18.0	64.0		20.0				
Max Q Clear Time (g_c+l1), s	3.0	2.0		10.2	4.9	21.0		14.0				
Green Ext Time (p_c), s	0.0	32.2		0.5	0.3	19.5		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				7.8								
HCM 6th LOS				A								

Timings

9: Broadway & Grant Way

2045 Total PM

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	66	11	114	23	146	1994	42	2145
Future Volume (vph)	66	11	114	23	146	1994	42	2145
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	26.0	26.0	26.0	26.0	21.0	82.0	12.0	73.0
Total Split (%)	21.7%	21.7%	21.7%	21.7%	17.5%	68.3%	10.0%	60.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 9: Broadway & Grant Way

Ø1	Ø2 (R)	Ø4	
12 s	82 s	26 s	
Ø5	Ø6 (R)	Ø8	
21 s	73 s	26 s	

HCM 6th Signalized Intersection Summary

2045 Total PM

9: Broadway & Grant Way

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	11	65	114	23	66	146	1994	31	42	2145	53
Future Volume (veh/h)	66	11	65	114	23	66	146	1994	31	42	2145	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	11	67	118	24	68	151	2056	32	43	2211	55
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	34	207	200	64	182	253	3467	54	246	3349	83
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.09	1.00	1.00	0.06	1.00	1.00
Sat Flow, veh/h	1304	228	1391	1321	431	1220	1781	5179	81	1781	5124	127
Grp Volume(v), veh/h	68	0	78	118	0	92	151	1351	737	43	1467	799
Grp Sat Flow(s),veh/h/ln	1304	0	1620	1321	0	1651	1781	1702	1856	1781	1702	1847
Q Serve(g_s), s	5.9	0.0	5.2	10.5	0.0	6.0	3.5	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	5.2	15.7	0.0	6.0	3.5	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		0.86	1.00		0.74	1.00		0.04	1.00		0.07
Lane Grp Cap(c), veh/h	189	0	241	200	0	246	253	2278	1242	246	2225	1208
V/C Ratio(X)	0.36	0.00	0.32	0.59	0.00	0.37	0.60	0.59	0.59	0.18	0.66	0.66
Avail Cap(c_a), veh/h	212	0	270	223	0	275	391	2278	1242	278	2225	1208
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.62	0.62	0.62	0.52	0.52	0.52
Uniform Delay (d), s/veh	51.4	0.0	45.7	52.7	0.0	46.0	5.6	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.8	3.3	0.0	0.9	1.4	0.7	1.3	0.2	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	2.1	3.7	0.0	2.5	1.2	0.2	0.4	0.3	0.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	46.4	56.0	0.0	47.0	7.0	0.7	1.3	6.1	0.8	1.5
LnGrp LOS	D	A	D	E	A	D	A	A	A	A	A	A
Approach Vol, veh/h	146			210			2239			2309		
Approach Delay, s/veh	49.3			52.0			1.3			1.1		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	86.3		23.9	11.7	84.4		23.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	6.0	76.0		20.0	15.0	67.0		20.0				
Max Q Clear Time (g_c+I1), s	2.9	2.0		14.0	5.5	2.0		17.7				
Green Ext Time (p_c), s	0.0	32.3		0.3	0.3	35.7		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				4.8								
HCM 6th LOS				A								

Intersection												
Intersection Delay, s/veh	9.3											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	83	19	7	162	21	47	52	13	9	44	33
Future Vol, veh/h	22	83	19	7	162	21	47	52	13	9	44	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	90	21	8	176	23	51	57	14	10	48	36
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.9	9.9	9	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	80%	0%	81%	0%	89%	0%	57%
Vol Right, %	0%	20%	0%	19%	0%	11%	0%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	65	22	102	7	183	9	77
LT Vol	47	0	22	0	7	0	9	0
Through Vol	0	52	0	83	0	162	0	44
RT Vol	0	13	0	19	0	21	0	33
Lane Flow Rate	51	71	24	111	8	199	10	84
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.085	0.105	0.039	0.16	0.012	0.285	0.016	0.122
Departure Headway (Hd)	6.012	5.368	5.818	5.184	5.747	5.163	6.056	5.25
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	594	665	614	690	621	694	589	680
Service Time	3.77	3.125	3.569	2.934	3.494	2.91	3.817	3.01
HCM Lane V/C Ratio	0.086	0.107	0.039	0.161	0.013	0.287	0.017	0.124
HCM Control Delay	9.3	8.8	8.8	8.9	8.6	10	8.9	8.7
HCM Lane LOS	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.3	0.4	0.1	0.6	0	1.2	0	0.4

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	138	36	33	51	115	29	47	14	13	88	15
Future Vol, veh/h	36	138	36	33	51	115	29	47	14	13	88	15
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	164	43	39	61	137	35	56	17	15	105	18
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.4	9.6	9.5	10
HCM LOS	B	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	77%	0%	79%	0%	31%	0%	85%
Vol Right, %	0%	23%	0%	21%	0%	69%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	61	36	174	33	166	13	103
LT Vol	29	0	36	0	33	0	13	0
Through Vol	0	47	0	138	0	51	0	88
RT Vol	0	14	0	36	0	115	0	15
Lane Flow Rate	35	73	43	207	39	198	15	123
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.063	0.118	0.071	0.312	0.067	0.275	0.028	0.2
Departure Headway (Hd)	6.53	5.861	6.07	5.418	6.099	5.11	6.481	5.872
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	614	594	667	590	707	554	613
Service Time	4.248	3.579	3.77	3.119	3.804	2.81	4.197	3.588
HCM Lane V/C Ratio	0.064	0.119	0.072	0.31	0.066	0.28	0.027	0.201
HCM Control Delay	9.7	9.4	9.2	10.6	9.2	9.7	9.4	10.1
HCM Lane LOS	A	A	A	B	A	A	A	B
HCM 95th-tile Q	0.2	0.4	0.2	1.3	0.2	1.1	0.1	0.7

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	93	21	8	182	24	53	58	15	10	49	37
Future Vol, veh/h	25	93	21	8	182	24	53	58	15	10	49	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	101	23	9	198	26	58	63	16	11	53	40
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.2	10.5	9.3	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	79%	0%	82%	0%	88%	0%	57%
Vol Right, %	0%	21%	0%	18%	0%	12%	0%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	73	25	114	8	206	10	86
LT Vol	53	0	25	0	8	0	10	0
Through Vol	0	58	0	93	0	182	0	49
RT Vol	0	15	0	21	0	24	0	37
Lane Flow Rate	58	79	27	124	9	224	11	93
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.098	0.121	0.045	0.182	0.014	0.327	0.019	0.14
Departure Headway (Hd)	6.146	5.497	5.931	5.297	5.845	5.26	6.199	5.39
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	580	647	600	673	609	678	574	660
Service Time	3.922	3.272	3.702	3.068	3.61	3.025	3.977	3.169
HCM Lane V/C Ratio	0.1	0.122	0.045	0.184	0.015	0.33	0.019	0.141
HCM Control Delay	9.6	9	9	9.3	8.7	10.6	9.1	9.1
HCM Lane LOS	A	A	A	A	A	B	A	A
HCM 95th-tile Q	0.3	0.4	0.1	0.7	0	1.4	0.1	0.5

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	151	39	36	56	126	32	51	15	14	96	16
Future Vol, veh/h	39	151	39	36	56	126	32	51	15	14	96	16
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	180	46	43	67	150	38	61	18	17	114	19
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.9	10.2	9.8	10.4
HCM LOS	B	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	77%	0%	79%	0%	31%	0%	86%
Vol Right, %	0%	23%	0%	21%	0%	69%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	66	39	190	36	182	14	112
LT Vol	32	0	39	0	36	0	14	0
Through Vol	0	51	0	151	0	56	0	96
RT Vol	0	15	0	39	0	126	0	16
Lane Flow Rate	38	79	46	226	43	217	17	133
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.071	0.132	0.08	0.347	0.074	0.314	0.031	0.223
Departure Headway (Hd)	6.7	6.032	6.177	5.527	6.21	5.215	6.642	6.034
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	595	581	651	578	689	540	596
Service Time	4.431	3.762	3.903	3.253	3.936	2.942	4.372	3.764
HCM Lane V/C Ratio	0.071	0.133	0.079	0.347	0.074	0.315	0.031	0.223
HCM Control Delay	9.9	9.7	9.4	11.2	9.4	10.3	9.6	10.5
HCM Lane LOS	A	A	A	B	A	B	A	B
HCM 95th-tile Q	0.2	0.5	0.3	1.5	0.2	1.3	0.1	0.8

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Future Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	101	23	9	198	70	58	253	16	63	233	40
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	11.9	15.8	14.8	14.6
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	94%	0%	82%	0%	74%	0%	85%
Vol Right, %	0%	6%	0%	18%	0%	26%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	248	25	114	8	246	58	251
LT Vol	53	0	25	0	8	0	58	0
Through Vol	0	233	0	93	0	182	0	214
RT Vol	0	15	0	21	0	64	0	37
Lane Flow Rate	58	270	27	124	9	267	63	273
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.114	0.494	0.058	0.243	0.018	0.499	0.125	0.494
Departure Headway (Hd)	7.145	6.593	7.712	7.068	7.419	6.723	7.137	6.522
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	547	465	508	483	537	504	554
Service Time	4.871	4.318	5.454	4.809	5.149	4.452	4.861	4.247
HCM Lane V/C Ratio	0.115	0.494	0.058	0.244	0.019	0.497	0.125	0.493
HCM Control Delay	10.8	15.6	10.9	12.1	10.3	16	10.9	15.5
HCM Lane LOS	B	C	B	B	B	C	B	C
HCM 95th-tile Q	0.4	2.7	0.2	0.9	0.1	2.8	0.4	2.7

Intersection												
Intersection Delay, s/veh	39.4											
Intersection LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Future Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	180	46	43	67	212	38	367	18	65	410	19
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	20.6	23.1	44.3	56.3
HCM LOS	C	C	E	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	95%	0%	79%	0%	24%	0%	96%
Vol Right, %	0%	5%	0%	21%	0%	76%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	323	39	190	36	234	55	360
LT Vol	32	0	39	0	36	0	55	0
Through Vol	0	308	0	151	0	56	0	344
RT Vol	0	15	0	39	0	178	0	16
Lane Flow Rate	38	385	46	226	43	279	65	429
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.093	0.88	0.122	0.553	0.111	0.639	0.157	0.964
Departure Headway (Hd)	8.789	8.237	9.47	8.798	9.329	8.253	8.646	8.096
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	406	438	377	409	383	437	414	446
Service Time	6.567	6.015	7.256	6.584	7.11	6.033	6.424	5.874
HCM Lane V/C Ratio	0.094	0.879	0.122	0.553	0.112	0.638	0.157	0.962
HCM Control Delay	12.5	47.4	13.6	22	13.3	24.6	13	62.9
HCM Lane LOS	B	E	B	C	B	C	B	F
HCM 95th-tile Q	0.3	9.1	0.4	3.2	0.4	4.3	0.6	11.7

HCM 6th Roundabout
10: Southpark Terrace & Southpark Drive

2028 Total AM - Improved
11/13/2023

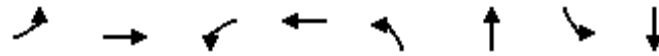
Intersection				
Intersection Delay, s/veh	6.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	151	277	327	336
Demand Flow Rate, veh/h	154	282	333	343
Vehicles Circulating, veh/h	311	345	195	270
Vehicles Exiting, veh/h	302	183	270	357
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	6.8	6.1	6.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	154	282	333	343
Cap Entry Lane, veh/h	1005	971	1131	1048
Entry HV Adj Factor	0.980	0.982	0.982	0.981
Flow Entry, veh/h	151	277	327	336
Cap Entry, veh/h	985	953	1110	1027
V/C Ratio	0.153	0.291	0.294	0.327
Control Delay, s/veh	5.1	6.8	6.1	6.8
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Intersection				
Intersection Delay, s/veh	8.2			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	272	322	423	494
Demand Flow Rate, veh/h	278	328	431	503
Vehicles Circulating, veh/h	528	460	297	151
Vehicles Exiting, veh/h	126	268	509	637
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.7	8.7	8.3	7.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	278	328	431	503
Cap Entry Lane, veh/h	805	863	1019	1183
Entry HV Adj Factor	0.980	0.981	0.981	0.982
Flow Entry, veh/h	272	322	423	494
Cap Entry, veh/h	789	846	1000	1161
V/C Ratio	0.345	0.380	0.423	0.425
Control Delay, s/veh	8.7	8.7	8.3	7.5
LOS	A	A	A	A
95th %tile Queue, veh	2	2	2	2

Timings
10: Southpark Terrace & Southpark Drive

2028 Total AM_Signal

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	93	8	182	53	233	58	214
Future Volume (vph)	25	93	8	182	53	233	58	214
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max

Intersection Summary

Cycle Length: 90

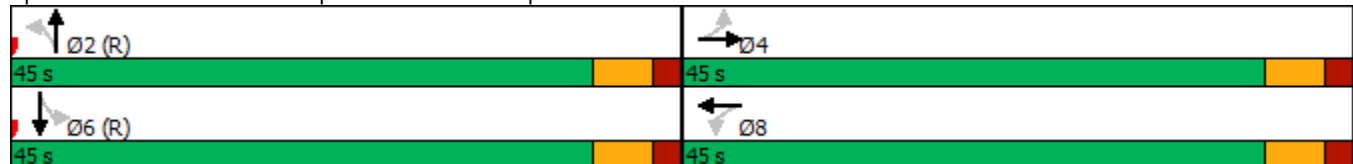
Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Pretimed

Splits and Phases: 10: Southpark Terrace & Southpark Drive



HCM 6th Signalized Intersection Summary

10: Southpark Terrace & Southpark Drive

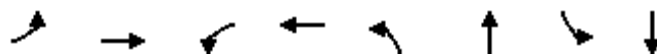
2028 Total AM_Signal

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	93	21	8	182	64	53	233	15	58	214	37
Future Volume (veh/h)	25	93	21	8	182	64	53	233	15	58	214	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	101	23	9	198	70	58	253	16	63	233	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	639	145	576	572	202	449	754	48	454	674	116
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1111	1474	336	1267	1320	467	1106	1740	110	1110	1555	267
Grp Volume(v), veh/h	27	0	124	9	0	268	58	0	269	63	0	273
Grp Sat Flow(s),veh/h/ln	1111	0	1810	1267	0	1786	1106	0	1851	1110	0	1822
Q Serve(g_s), s	1.5	0.0	3.8	0.4	0.0	9.0	3.3	0.0	8.7	3.6	0.0	9.0
Cycle Q Clear(g_c), s	10.5	0.0	3.8	4.1	0.0	9.0	12.3	0.0	8.7	12.3	0.0	9.0
Prop In Lane	1.00		0.19	1.00		0.26	1.00		0.06	1.00		0.15
Lane Grp Cap(c), veh/h	450	0	784	576	0	774	449	0	802	454	0	790
V/C Ratio(X)	0.06	0.00	0.16	0.02	0.00	0.35	0.13	0.00	0.34	0.14	0.00	0.35
Avail Cap(c_a), veh/h	450	0	784	576	0	774	449	0	802	454	0	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	15.5	16.8	0.0	17.0	21.1	0.0	16.9	21.0	0.0	17.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.0	0.0	1.2	0.6	0.0	1.1	0.6	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.6	0.1	0.0	3.8	0.9	0.0	3.8	1.0	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	15.9	16.8	0.0	18.2	21.7	0.0	18.0	21.6	0.0	18.2
LnGrp LOS	C	A	B	B	A	B	C	A	B	C	A	B
Approach Vol, veh/h	151			277			327			336		
Approach Delay, s/veh	16.8			18.2			18.7			18.8		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	45.0			45.0			45.0			45.0		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	39.0			39.0			39.0			39.0		
Max Q Clear Time (g_c+l1), s	14.3			12.5			14.3			11.0		
Green Ext Time (p_c), s	1.8			0.8			1.9			1.7		
Intersection Summary												
HCM 6th Ctrl Delay	18.3											
HCM 6th LOS	B											

Timings 10: Southpark Terrace & Southpark Drive

2028 Total PM_Signal
11/13/2023

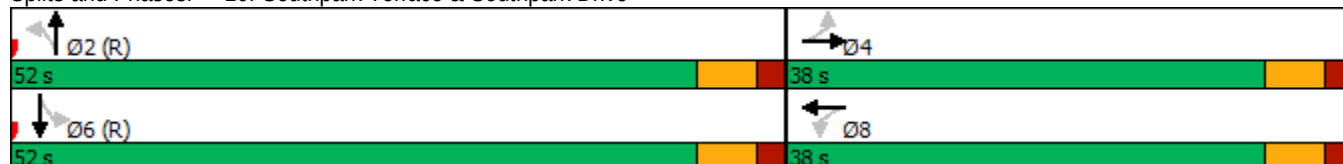


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	39	151	36	56	32	308	55	344
Future Volume (vph)	39	151	36	56	32	308	55	344
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	38.0	38.0	38.0	38.0	52.0	52.0	52.0	52.0
Total Split (%)	42.2%	42.2%	42.2%	42.2%	57.8%	57.8%	57.8%	57.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed

Splits and Phases: 10: Southpark Terrace & Southpark Drive



HCM 6th Signalized Intersection Summary

10: Southpark Terrace & Southpark Drive

2028 Total PM_Signal

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	151	39	36	56	178	32	308	15	55	344	16
Future Volume (veh/h)	39	151	39	36	56	178	32	308	15	55	344	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	180	46	43	67	212	38	367	18	65	410	19
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	511	131	384	140	445	429	904	44	462	906	42
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1100	1437	367	1155	395	1250	959	1768	87	998	1773	82
Grp Volume(v), veh/h	46	0	226	43	0	279	38	0	385	65	0	429
Grp Sat Flow(s),veh/h/ln	1100	0	1804	1155	0	1645	959	0	1855	998	0	1856
Q Serve(g_s), s	3.0	0.0	8.3	2.6	0.0	11.8	2.4	0.0	11.5	3.9	0.0	13.2
Cycle Q Clear(g_c), s	14.9	0.0	8.3	10.9	0.0	11.8	15.6	0.0	11.5	15.4	0.0	13.2
Prop In Lane	1.00		0.20	1.00		0.76	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	326	0	642	384	0	585	429	0	948	462	0	948
V/C Ratio(X)	0.14	0.00	0.35	0.11	0.00	0.48	0.09	0.00	0.41	0.14	0.00	0.45
Avail Cap(c_a), veh/h	326	0	642	384	0	585	429	0	948	462	0	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	21.4	25.4	0.0	22.5	18.9	0.0	13.6	18.3	0.0	14.0
Incr Delay (d2), s/veh	0.9	0.0	1.5	0.6	0.0	2.8	0.4	0.0	1.3	0.6	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.7	0.8	0.0	4.9	0.6	0.0	4.9	1.0	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	22.9	26.0	0.0	25.3	19.4	0.0	14.9	19.0	0.0	15.5
LnGrp LOS	C	A	C	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h		272		322		423		494				
Approach Delay, s/veh		23.9		25.4		15.3		16.0				
Approach LOS		C		C		B		B				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		38.0		52.0		38.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		46.0		32.0		46.0		32.0				
Max Q Clear Time (g_c+I1), s		17.6		16.9		17.4		13.8				
Green Ext Time (p_c), s		2.7		1.3		3.2		1.8				
Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									

Intersection												
Int Delay, s/veh	14.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Future Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	150	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	101	23	9	198	70	58	253	16	63	233	40

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	890	764	253	818	776	261	273	0	0	269	0	0
Stage 1	379	379	-	377	377	-	-	-	-	-	-	-
Stage 2	511	385	-	441	399	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	264	334	786	295	328	778	1290	-	-	1295	-	-
Stage 1	643	615	-	644	616	-	-	-	-	-	-	-
Stage 2	545	611	-	595	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	105	303	786	198	298	778	1290	-	-	1295	-	-
Mov Cap-2 Maneuver	105	303	-	198	298	-	-	-	-	-	-	-
Stage 1	614	585	-	615	588	-	-	-	-	-	-	-
Stage 2	314	584	-	455	573	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.7		39.9		1.4		1.5	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1290	-	-	105	342	198	355	1295	-	-
HCM Lane V/C Ratio	0.045	-	-	0.259	0.362	0.044	0.753	0.049	-	-
HCM Control Delay (s)	7.9	-	-	50.9	21.4	24	40.4	7.9	-	-
HCM Lane LOS	A	-	-	F	C	C	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	1.6	0.1	5.9	0.2	-	-

Intersection												
Int Delay, s/veh	24.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Future Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	150	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	180	46	43	67	212	38	367	18	65	410	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1142	1011	420	1115	1011	376	429	0	0	385	0	0
Stage 1	550	550	-	452	452	-	-	-	-	-	-	-
Stage 2	592	461	-	663	559	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	177	240	633	185	240	670	1130	-	-	1173	-	-
Stage 1	519	516	-	587	570	-	-	-	-	-	-	-
Stage 2	493	565	-	450	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	87	219	633	51	219	670	1130	-	-	1173	-	-
Mov Cap-2 Maneuver	87	219	-	51	219	-	-	-	-	-	-	-
Stage 1	501	488	-	567	551	-	-	-	-	-	-	-
Stage 2	286	546	-	249	483	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	76.7		49.4		0.7		1.1	
HCM LOS	F		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1130	-	-	87	253	51	449	1173	-	-
HCM Lane V/C Ratio	0.034	-	-	0.534	0.894	0.84	0.62	0.056	-	-
HCM Control Delay (s)	8.3	-	-	86.2	74.7	206.9	25.2	8.2	-	-
HCM Lane LOS	A	-	-	F	F	F	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.3	7.7	3.5	4.1	0.2	-	-

Intersection												
Intersection Delay, s/veh	9.7											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	93	21	8	182	24	53	58	15	10	49	37
Future Vol, veh/h	25	93	21	8	182	24	53	58	15	10	49	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	101	23	9	198	26	58	63	16	11	53	40
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.2	10.5	9.3	9.1
HCM LOS	A	B	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	79%	0%	82%	0%	88%	0%	57%
Vol Right, %	0%	21%	0%	18%	0%	12%	0%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	73	25	114	8	206	10	86
LT Vol	53	0	25	0	8	0	10	0
Through Vol	0	58	0	93	0	182	0	49
RT Vol	0	15	0	21	0	24	0	37
Lane Flow Rate	58	79	27	124	9	224	11	93
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.098	0.121	0.045	0.182	0.014	0.327	0.019	0.14
Departure Headway (Hd)	6.146	5.497	5.931	5.297	5.845	5.26	6.199	5.39
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	580	647	600	673	609	678	574	660
Service Time	3.922	3.272	3.702	3.068	3.61	3.025	3.977	3.169
HCM Lane V/C Ratio	0.1	0.122	0.045	0.184	0.015	0.33	0.019	0.141
HCM Control Delay	9.6	9	9	9.3	8.7	10.6	9.1	9.1
HCM Lane LOS	A	A	A	A	A	B	A	A
HCM 95th-tile Q	0.3	0.4	0.1	0.7	0	1.4	0.1	0.5

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	151	39	36	56	126	32	51	15	14	96	16
Future Vol, veh/h	39	151	39	36	56	126	32	51	15	14	96	16
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	180	46	43	67	150	38	61	18	17	114	19
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.9	10.2	9.8	10.4
HCM LOS	B	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	77%	0%	79%	0%	31%	0%	86%
Vol Right, %	0%	23%	0%	21%	0%	69%	0%	14%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	66	39	190	36	182	14	112
LT Vol	32	0	39	0	36	0	14	0
Through Vol	0	51	0	151	0	56	0	96
RT Vol	0	15	0	39	0	126	0	16
Lane Flow Rate	38	79	46	226	43	217	17	133
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.071	0.132	0.08	0.347	0.074	0.314	0.031	0.223
Departure Headway (Hd)	6.7	6.032	6.177	5.527	6.21	5.215	6.642	6.034
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	595	581	651	578	689	540	596
Service Time	4.431	3.762	3.903	3.253	3.936	2.942	4.372	3.764
HCM Lane V/C Ratio	0.071	0.133	0.079	0.347	0.074	0.315	0.031	0.223
HCM Control Delay	9.9	9.7	9.4	11.2	9.4	10.3	9.6	10.5
HCM Lane LOS	A	A	A	B	A	B	A	B
HCM 95th-tile Q	0.2	0.5	0.3	1.5	0.2	1.3	0.1	0.8

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Future Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	101	23	9	198	70	58	253	16	63	233	40
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	11.9	15.8	14.8	14.6
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	94%	0%	82%	0%	74%	0%	85%
Vol Right, %	0%	6%	0%	18%	0%	26%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	248	25	114	8	246	58	251
LT Vol	53	0	25	0	8	0	58	0
Through Vol	0	233	0	93	0	182	0	214
RT Vol	0	15	0	21	0	64	0	37
Lane Flow Rate	58	270	27	124	9	267	63	273
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.114	0.494	0.058	0.243	0.018	0.499	0.125	0.494
Departure Headway (Hd)	7.145	6.593	7.712	7.068	7.419	6.723	7.137	6.522
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	503	547	465	508	483	537	504	554
Service Time	4.871	4.318	5.454	4.809	5.149	4.452	4.861	4.247
HCM Lane V/C Ratio	0.115	0.494	0.058	0.244	0.019	0.497	0.125	0.493
HCM Control Delay	10.8	15.6	10.9	12.1	10.3	16	10.9	15.5
HCM Lane LOS	B	C	B	B	B	C	B	C
HCM 95th-tile Q	0.4	2.7	0.2	0.9	0.1	2.8	0.4	2.7

HCM 6th AWSC
10: Southpark Terrace & Southpark Drive

2045 Total PM
11/13/2023

Intersection												
Intersection Delay, s/veh	39.4											
Intersection LOS	E											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Future Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	180	46	43	67	212	38	367	18	65	410	19
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	20.6	23.1	44.3	56.3
HCM LOS	C	C	E	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	95%	0%	79%	0%	24%	0%	96%
Vol Right, %	0%	5%	0%	21%	0%	76%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	323	39	190	36	234	55	360
LT Vol	32	0	39	0	36	0	55	0
Through Vol	0	308	0	151	0	56	0	344
RT Vol	0	15	0	39	0	178	0	16
Lane Flow Rate	38	385	46	226	43	279	65	429
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.093	0.88	0.122	0.553	0.111	0.639	0.157	0.964
Departure Headway (Hd)	8.789	8.237	9.47	8.798	9.329	8.253	8.646	8.096
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	406	438	377	409	383	437	414	446
Service Time	6.567	6.015	7.256	6.584	7.11	6.033	6.424	5.874
HCM Lane V/C Ratio	0.094	0.879	0.122	0.553	0.112	0.638	0.157	0.962
HCM Control Delay	12.5	47.4	13.6	22	13.3	24.6	13	62.9
HCM Lane LOS	B	E	B	C	B	C	B	F
HCM 95th-tile Q	0.3	9.1	0.4	3.2	0.4	4.3	0.6	11.7

HCM 6th Roundabout
10: Southpark Terrace & Southpark Drive

2045 Total AM - Improved
11/13/2023

Intersection				
Intersection Delay, s/veh	6.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	151	277	327	336
Demand Flow Rate, veh/h	154	282	333	343
Vehicles Circulating, veh/h	311	345	195	270
Vehicles Exiting, veh/h	302	183	270	357
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	6.8	6.1	6.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	154	282	333	343
Cap Entry Lane, veh/h	1005	971	1131	1048
Entry HV Adj Factor	0.980	0.982	0.982	0.981
Flow Entry, veh/h	151	277	327	336
Cap Entry, veh/h	985	953	1110	1027
V/C Ratio	0.153	0.291	0.294	0.327
Control Delay, s/veh	5.1	6.8	6.1	6.8
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

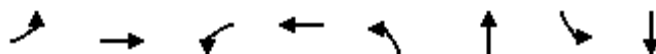
HCM 6th Roundabout
10: Southpark Terrace & Southpark Drive

2045 Total PM - Improved
11/13/2023

Intersection				
Intersection Delay, s/veh	8.2			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	272	322	423	494
Demand Flow Rate, veh/h	278	328	431	503
Vehicles Circulating, veh/h	528	460	297	151
Vehicles Exiting, veh/h	126	268	509	637
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.7	8.7	8.3	7.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	278	328	431	503
Cap Entry Lane, veh/h	805	863	1019	1183
Entry HV Adj Factor	0.980	0.981	0.981	0.982
Flow Entry, veh/h	272	322	423	494
Cap Entry, veh/h	789	846	1000	1161
V/C Ratio	0.345	0.380	0.423	0.425
Control Delay, s/veh	8.7	8.7	8.3	7.5
LOS	A	A	A	A
95th %tile Queue, veh	2	2	2	2

Timings 10: Southpark Terrace & Southpark Drive

2045 Total AM_Signal
11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	25	93	8	182	53	233	58	214
Future Volume (vph)	25	93	8	182	53	233	58	214
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed

Splits and Phases: 10: Southpark Terrace & Southpark Drive

Ø2 (R)	Ø4
45 s	45 s
Ø6 (R)	Ø8
45 s	45 s

HCM 6th Signalized Intersection Summary

10: Southpark Terrace & Southpark Drive

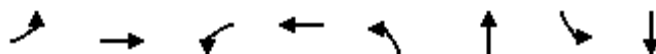
2045 Total AM_Signal

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	93	21	8	182	64	53	233	15	58	214	37
Future Volume (veh/h)	25	93	21	8	182	64	53	233	15	58	214	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	27	101	23	9	198	70	58	253	16	63	233	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	639	145	576	572	202	449	754	48	454	674	116
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1111	1474	336	1267	1320	467	1106	1740	110	1110	1555	267
Grp Volume(v), veh/h	27	0	124	9	0	268	58	0	269	63	0	273
Grp Sat Flow(s),veh/h/ln	1111	0	1810	1267	0	1786	1106	0	1851	1110	0	1822
Q Serve(g_s), s	1.5	0.0	3.8	0.4	0.0	9.0	3.3	0.0	8.7	3.6	0.0	9.0
Cycle Q Clear(g_c), s	10.5	0.0	3.8	4.1	0.0	9.0	12.3	0.0	8.7	12.3	0.0	9.0
Prop In Lane	1.00		0.19	1.00		0.26	1.00		0.06	1.00		0.15
Lane Grp Cap(c), veh/h	450	0	784	576	0	774	449	0	802	454	0	790
V/C Ratio(X)	0.06	0.00	0.16	0.02	0.00	0.35	0.13	0.00	0.34	0.14	0.00	0.35
Avail Cap(c_a), veh/h	450	0	784	576	0	774	449	0	802	454	0	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	15.5	16.8	0.0	17.0	21.1	0.0	16.9	21.0	0.0	17.0
Incr Delay (d2), s/veh	0.3	0.0	0.4	0.0	0.0	1.2	0.6	0.0	1.1	0.6	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.6	0.1	0.0	3.8	0.9	0.0	3.8	1.0	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	0.0	15.9	16.8	0.0	18.2	21.7	0.0	18.0	21.6	0.0	18.2
LnGrp LOS	C	A	B	B	A	B	C	A	B	C	A	B
Approach Vol, veh/h	151			277			327			336		
Approach Delay, s/veh	16.8			18.2			18.7			18.8		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	45.0			45.0			45.0			45.0		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	39.0			39.0			39.0			39.0		
Max Q Clear Time (g_c+l1), s	14.3			12.5			14.3			11.0		
Green Ext Time (p_c), s	1.8			0.8			1.9			1.7		
Intersection Summary												
HCM 6th Ctrl Delay	18.3											
HCM 6th LOS	B											

Timings 10: Southpark Terrace & Southpark Drive

2045 Total PM_Signal
11/13/2023

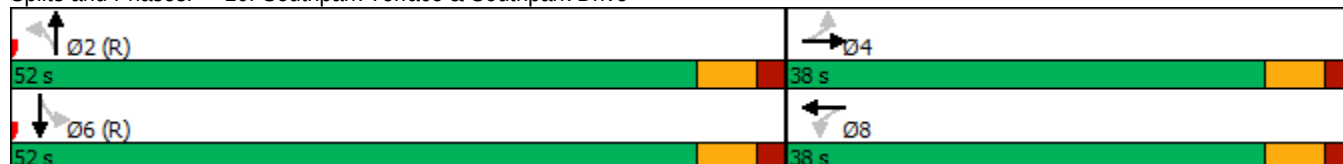


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	39	151	36	56	32	308	55	344
Future Volume (vph)	39	151	36	56	32	308	55	344
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	38.0	38.0	38.0	38.0	52.0	52.0	52.0	52.0
Total Split (%)	42.2%	42.2%	42.2%	42.2%	57.8%	57.8%	57.8%	57.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 10: Southpark Terrace & Southpark Drive



HCM 6th Signalized Intersection Summary

10: Southpark Terrace & Southpark Drive

2045 Total PM_Signal

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	151	39	36	56	178	32	308	15	55	344	16
Future Volume (veh/h)	39	151	39	36	56	178	32	308	15	55	344	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	180	46	43	67	212	38	367	18	65	410	19
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	511	131	384	140	445	429	904	44	462	906	42
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1100	1437	367	1155	395	1250	959	1768	87	998	1773	82
Grp Volume(v), veh/h	46	0	226	43	0	279	38	0	385	65	0	429
Grp Sat Flow(s),veh/h/ln	1100	0	1804	1155	0	1645	959	0	1855	998	0	1856
Q Serve(g_s), s	3.0	0.0	8.3	2.6	0.0	11.8	2.4	0.0	11.5	3.9	0.0	13.2
Cycle Q Clear(g_c), s	14.9	0.0	8.3	10.9	0.0	11.8	15.6	0.0	11.5	15.4	0.0	13.2
Prop In Lane	1.00		0.20	1.00		0.76	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	326	0	642	384	0	585	429	0	948	462	0	948
V/C Ratio(X)	0.14	0.00	0.35	0.11	0.00	0.48	0.09	0.00	0.41	0.14	0.00	0.45
Avail Cap(c_a), veh/h	326	0	642	384	0	585	429	0	948	462	0	948
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	21.4	25.4	0.0	22.5	18.9	0.0	13.6	18.3	0.0	14.0
Incr Delay (d2), s/veh	0.9	0.0	1.5	0.6	0.0	2.8	0.4	0.0	1.3	0.6	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.7	0.8	0.0	4.9	0.6	0.0	4.9	1.0	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	22.9	26.0	0.0	25.3	19.4	0.0	14.9	19.0	0.0	15.5
LnGrp LOS	C	A	C	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h	272			322			423			494		
Approach Delay, s/veh	23.9			25.4			15.3			16.0		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	52.0			38.0			52.0			38.0		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	46.0			32.0			46.0			32.0		
Max Q Clear Time (g_c+l1), s	17.6			16.9			17.4			13.8		
Green Ext Time (p_c), s	2.7			1.3			3.2			1.8		
Intersection Summary												
HCM 6th Ctrl Delay	19.2											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	14.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Future Vol, veh/h	25	93	21	8	182	64	53	233	15	58	214	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	150	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	101	23	9	198	70	58	253	16	63	233	40

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	890	764	253	818	776	261	273	0	0	269	0	0
Stage 1	379	379	-	377	377	-	-	-	-	-	-	-
Stage 2	511	385	-	441	399	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	264	334	786	295	328	778	1290	-	-	1295	-	-
Stage 1	643	615	-	644	616	-	-	-	-	-	-	-
Stage 2	545	611	-	595	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	105	303	786	198	298	778	1290	-	-	1295	-	-
Mov Cap-2 Maneuver	105	303	-	198	298	-	-	-	-	-	-	-
Stage 1	614	585	-	615	588	-	-	-	-	-	-	-
Stage 2	314	584	-	455	573	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.7		39.9		1.4		1.5	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1290	-	-	105	342	198	355	1295	-	-
HCM Lane V/C Ratio	0.045	-	-	0.259	0.362	0.044	0.753	0.049	-	-
HCM Control Delay (s)	7.9	-	-	50.9	21.4	24	40.4	7.9	-	-
HCM Lane LOS	A	-	-	F	C	C	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	1.6	0.1	5.9	0.2	-	-

Intersection												
Int Delay, s/veh	24.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Future Vol, veh/h	39	151	39	36	56	178	32	308	15	55	344	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	150	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	180	46	43	67	212	38	367	18	65	410	19

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1142	1011	420	1115	1011	376	429	0	0	385	0	0
Stage 1	550	550	-	452	452	-	-	-	-	-	-	-
Stage 2	592	461	-	663	559	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	177	240	633	185	240	670	1130	-	-	1173	-	-
Stage 1	519	516	-	587	570	-	-	-	-	-	-	-
Stage 2	493	565	-	450	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	87	219	633	51	219	670	1130	-	-	1173	-	-
Mov Cap-2 Maneuver	87	219	-	51	219	-	-	-	-	-	-	-
Stage 1	501	488	-	567	551	-	-	-	-	-	-	-
Stage 2	286	546	-	249	483	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	76.7		49.4		0.7		1.1	
HCM LOS	F		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1130	-	-	87	253	51	449	1173	-	-
HCM Lane V/C Ratio	0.034	-	-	0.534	0.894	0.84	0.62	0.056	-	-
HCM Control Delay (s)	8.3	-	-	86.2	74.7	206.9	25.2	8.2	-	-
HCM Lane LOS	A	-	-	F	F	F	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.3	7.7	3.5	4.1	0.2	-	-

Timings 11: Broadway & Southpark Drive

2023 Adjusted Existing AM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	24	6	86	16	28	159	1592	25	1218
Future Volume (vph)	24	6	86	16	28	159	1592	25	1218
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0	27.0	77.0	13.0	63.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	22.5%	64.2%	10.8%	52.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary

11: Broadway & Southpark Drive

2023 Adjusted Existing AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	6	73	86	16	28	159	1592	163	25	1218	50
Future Volume (veh/h)	24	6	73	86	16	28	159	1592	163	25	1218	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	6	76	90	17	29	166	1658	170	26	1269	52
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	16	197	173	248	210	427	3263	334	273	3358	138
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.10	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1360	117	1486	1316	1870	1585	1781	4706	482	1781	5031	206
Grp Volume(v), veh/h	25	0	82	90	17	29	166	1198	630	26	859	462
Grp Sat Flow(s),veh/h/ln	1360	0	1603	1316	1870	1585	1781	1702	1784	1781	1702	1833
Q Serve(g_s), s	2.0	0.0	5.6	8.1	1.0	1.9	3.7	0.0	0.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	5.6	13.7	1.0	1.9	3.7	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.93	1.00		1.00	1.00		0.27	1.00		0.11
Lane Grp Cap(c), veh/h	229	0	212	173	248	210	427	2360	1237	273	2272	1223
V/C Ratio(X)	0.11	0.00	0.39	0.52	0.07	0.14	0.39	0.51	0.51	0.10	0.38	0.38
Avail Cap(c_a), veh/h	321	0	321	262	374	317	649	2360	1237	334	2272	1223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74	0.93	0.93	0.93
Uniform Delay (d), s/veh	46.9	0.0	47.6	53.8	45.6	46.0	5.0	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.1	2.4	0.1	0.3	0.4	0.6	1.1	0.1	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	2.3	2.8	0.5	0.8	1.2	0.2	0.4	0.2	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	0.0	48.7	56.3	45.7	46.3	5.5	0.6	1.1	5.8	0.4	0.8
LnGrp LOS	D	A	D	E	D	D	A	A	A	A	A	A
Approach Vol, veh/h	107			136			1994			1347		
Approach Delay, s/veh	48.4			52.8			1.2			0.7		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.9	89.2		21.9	12.0	86.1		21.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	7.0	71.0		24.0	21.0	57.0		24.0				
Max Q Clear Time (g_c+l1), s	2.5	2.0		7.6	5.7	2.0		15.7				
Green Ext Time (p_c), s	0.0	24.5		0.4	0.4	13.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	4.3											
HCM 6th LOS	A											

Timings 11: Broadway & Southpark Drive

2023 Adjusted Existing PM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	60	20	175	29	42	71	1613	21	1751
Future Volume (vph)	60	20	175	29	42	71	1613	21	1751
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	15.0	69.0	11.0	65.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	12.5%	57.5%	9.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary

11: Broadway & Southpark Drive

2023 Adjusted Existing PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	20	136	175	29	42	71	1613	128	21	1751	27
Future Volume (veh/h)	60	20	136	175	29	42	71	1613	128	21	1751	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	21	142	182	30	44	74	1680	133	22	1824	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	52	352	263	467	396	268	2792	221	244	2912	45
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	1.00	1.00	0.04	1.00	1.00
Sat Flow, veh/h	1326	208	1409	1223	1870	1585	1781	4824	381	1781	5181	79
Grp Volume(v), veh/h	62	0	163	182	30	44	74	1185	628	22	1198	654
Grp Sat Flow(s),veh/h/ln	1326	0	1617	1223	1870	1585	1781	1702	1802	1781	1702	1856
Q Serve(g_s), s	4.5	0.0	10.1	17.5	1.5	2.6	2.1	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	10.1	27.6	1.5	2.6	2.1	0.0	0.0	0.6	0.0	0.0
Prop In Lane	1.00		0.87	1.00		1.00	1.00		0.21	1.00		0.04
Lane Grp Cap(c), veh/h	375	0	404	263	467	396	268	1970	1043	244	1914	1043
V/C Ratio(X)	0.17	0.00	0.40	0.69	0.06	0.11	0.28	0.60	0.60	0.09	0.63	0.63
Avail Cap(c_a), veh/h	419	0	458	304	530	449	333	1970	1043	280	1914	1043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.83	0.83	0.83
Uniform Delay (d), s/veh	36.6	0.0	37.6	49.1	34.3	34.7	9.6	0.0	0.0	10.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.7	5.5	0.1	0.1	0.4	1.0	1.9	0.1	1.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	4.1	5.7	0.7	1.0	0.8	0.3	0.5	0.2	0.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	0.0	38.2	54.6	34.4	34.9	10.0	1.0	1.9	10.4	1.3	2.4
LnGrp LOS	D	A	D	D	C	C	B	A	A	B	A	A
Approach Vol, veh/h	225			256			1887			1874		
Approach Delay, s/veh	37.8			48.9			1.6			1.8		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	75.4		36.0	10.6	73.5		36.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	63.0		34.0	9.0	59.0		34.0				
Max Q Clear Time (g_c+l1), s	2.6	2.0		12.1	4.1	2.0		29.6				
Green Ext Time (p_c), s	0.0	23.2		1.1	0.1	23.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay	6.5											
HCM 6th LOS	A											

Timings 11: Broadway & Southpark Drive

2028 Background AM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	27	7	96	18	31	178	1884	28	1493
Future Volume (vph)	27	7	96	18	31	178	1884	28	1493
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	81.0	11.0	64.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	67.5%	9.2%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary

11: Broadway & Southpark Drive

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	7	82	96	18	31	178	1884	183	28	1493	56
Future Volume (veh/h)	27	7	82	96	18	31	178	1884	183	28	1493	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	7	85	100	19	32	185	1962	191	29	1555	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	18	215	182	272	230	364	3214	311	226	3275	122
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.11	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1354	122	1482	1304	1870	1585	1781	4734	458	1781	5052	188
Grp Volume(v), veh/h	28	0	92	100	19	32	185	1407	746	29	1048	565
Grp Sat Flow(s),veh/h/ln	1354	0	1604	1304	1870	1585	1781	1702	1788	1781	1702	1836
Q Serve(g_s), s	2.2	0.0	6.2	9.0	1.1	2.1	4.4	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	6.2	15.3	1.1	2.1	4.4	0.0	0.0	0.6	0.0	0.0
Prop In Lane	1.00		0.92	1.00		1.00	1.00		0.26	1.00		0.10
Lane Grp Cap(c), veh/h	245	0	233	182	272	230	364	2311	1214	226	2207	1190
V/C Ratio(X)	0.11	0.00	0.39	0.55	0.07	0.14	0.51	0.61	0.61	0.13	0.47	0.47
Avail Cap(c_a), veh/h	296	0	294	231	343	291	590	2311	1214	254	2207	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.60	0.60	0.60	0.88	0.88	0.88
Uniform Delay (d), s/veh	45.7	0.0	46.5	53.4	44.3	44.7	5.5	0.0	0.0	6.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.1	2.6	0.1	0.3	0.7	0.7	1.4	0.2	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.6	3.1	0.5	0.9	1.3	0.2	0.5	0.2	0.2	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	0.0	47.6	56.0	44.4	45.0	6.2	0.7	1.4	6.5	0.6	1.2
LnGrp LOS	D	A	D	E	D	D	A	A	A	A	A	A
Approach Vol, veh/h	120			151			2338			1642		
Approach Delay, s/veh	47.2			52.2			1.4			0.9		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	87.5		23.4	12.8	83.8		23.4				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	75.0		22.0	22.0	58.0		22.0				
Max Q Clear Time (g_c+l1), s	2.6	2.0		8.2	6.4	2.0		17.3				
Green Ext Time (p_c), s	0.0	30.8		0.4	0.4	16.3		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	4.3											
HCM 6th LOS	A											

Timings 11: Broadway & Southpark Drive

2028 Background PM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	22	192	32	46	78	1874	23	2073
Future Volume (vph)	66	22	192	32	46	78	1874	23	2073
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	13.0	69.0	11.0	67.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	10.8%	57.5%	9.2%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

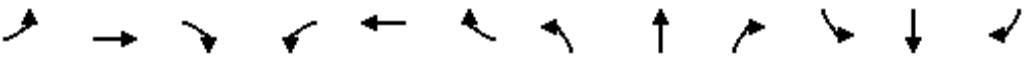
Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary 11: Broadway & Southpark Drive

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	22	149	192	32	46	78	1874	140	23	2073	30
Future Volume (veh/h)	66	22	149	192	32	46	78	1874	140	23	2073	30
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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	23	155	200	33	48	81	1952	146	24	2159	31
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	57	382	278	507	430	226	2695	201	206	2801	40
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.08	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1317	209	1408	1206	1870	1585	1781	4848	361	1781	5187	74
Grp Volume(v), veh/h	69	0	178	200	33	48	81	1368	730	24	1416	774
Grp Sat Flow(s),veh/h/ln	1317	0	1617	1206	1870	1585	1781	1702	1805	1781	1702	1857
Q Serve(g_s), s	4.9	0.0	10.8	19.5	1.6	2.7	2.4	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	10.8	30.4	1.6	2.7	2.4	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.87	1.00		1.00	1.00		0.20	1.00		0.04
Lane Grp Cap(c), veh/h	400	0	438	278	507	430	226	1892	1004	206	1838	1003
V/C Ratio(X)	0.17	0.00	0.41	0.72	0.07	0.11	0.36	0.72	0.73	0.12	0.77	0.77
Avail Cap(c_a), veh/h	416	0	458	293	530	449	260	1892	1004	240	1838	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55	0.72	0.72	0.72
Uniform Delay (d), s/veh	34.9	0.0	35.8	48.3	32.4	32.9	10.7	0.0	0.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	7.8	0.1	0.1	0.5	1.3	2.6	0.2	2.3	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.4	6.5	0.7	1.1	0.9	0.4	0.7	0.3	0.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	36.4	56.1	32.5	33.0	11.2	1.3	2.6	11.5	2.3	4.2
LnGrp LOS	D	A	D	E	C	C	B	A	A	B	A	A
Approach Vol, veh/h	247				281				2179			
Approach Delay, s/veh	36.0				49.4				2.1			
Approach LOS	D				D				A			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	72.7		38.5	10.7	70.8		38.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	63.0		34.0	7.0	61.0		34.0				
Max Q Clear Time (g_c+I1), s	2.7	2.0		12.8	4.4	2.0		32.4				
Green Ext Time (p_c), s	0.0	30.4		1.2	0.0	32.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	7.0											
HCM 6th LOS	A											

Timings
11: Broadway & Southpark Drive

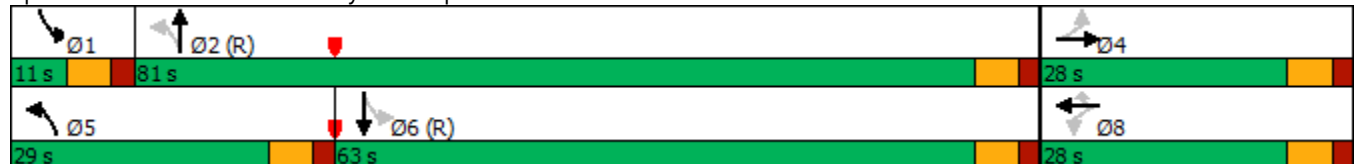
2028 Total AM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	32	7	96	18	31	216	1905	28	1510
Future Volume (vph)	32	7	96	18	31	216	1905	28	1510
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	29.0	81.0	11.0	63.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	24.2%	67.5%	9.2%	52.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

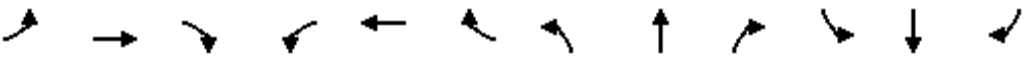
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary 11: Broadway & Southpark Drive

2028 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	7	125	96	18	31	216	1905	183	28	1510	58
Future Volume (veh/h)	32	7	125	96	18	31	216	1905	183	28	1510	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	7	130	100	19	32	225	1984	191	29	1573	60
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	14	263	180	324	274	371	3086	295	216	3064	117
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.14	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1354	82	1516	1252	1870	1585	1781	4740	453	1781	5047	192
Grp Volume(v), veh/h	33	0	137	100	19	32	225	1421	754	29	1061	572
Grp Sat Flow(s),veh/h/ln	1354	0	1598	1252	1870	1585	1781	1702	1789	1781	1702	1836
Q Serve(g_s), s	2.5	0.0	9.3	9.4	1.0	2.0	5.9	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	3.5	0.0	9.3	18.7	1.0	2.0	5.9	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.95	1.00		1.00	1.00		0.25	1.00		0.10
Lane Grp Cap(c), veh/h	283	0	277	180	324	274	371	2216	1165	216	2066	1114
V/C Ratio(X)	0.12	0.00	0.50	0.56	0.06	0.12	0.61	0.64	0.65	0.13	0.51	0.51
Avail Cap(c_a), veh/h	297	0	293	192	343	291	588	2216	1165	244	2066	1114
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.54	0.54	0.54	0.88	0.88	0.88
Uniform Delay (d), s/veh	42.9	0.0	44.9	53.3	41.4	41.9	6.3	0.0	0.0	8.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	3.1	0.1	0.2	0.9	0.8	1.5	0.2	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.8	3.1	0.5	0.8	1.7	0.2	0.5	0.3	0.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	46.2	56.4	41.5	42.0	7.2	0.8	1.5	8.3	0.8	1.5
LnGrp LOS	D	A	D	E	D	D	A	A	A	A	A	A
Approach Vol, veh/h	170			151			2400			1662		
Approach Delay, s/veh	45.6			51.5			1.6			1.2		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	84.1		26.8	14.4	78.8		26.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	75.0		22.0	23.0	57.0		22.0				
Max Q Clear Time (g_c+l1), s	2.7	2.0		11.3	7.9	2.0		20.7				
Green Ext Time (p_c), s	0.0	31.4		0.6	0.5	16.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				4.9								
HCM 6th LOS				A								

Timings 11: Broadway & Southpark Drive

2028 Total PM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	69	22	192	32	46	124	1906	23	2106
Future Volume (vph)	69	22	192	32	46	124	1906	23	2106
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	15.0	69.0	11.0	65.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	12.5%	57.5%	9.2%	54.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary

2028 Total PM

11: Broadway & Southpark Drive

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	22	187	192	32	46	124	1906	140	23	2106	36
Future Volume (veh/h)	69	22	187	192	32	46	124	1906	140	23	2106	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	23	195	200	33	48	129	1985	146	24	2194	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	48	408	259	530	449	240	2640	193	198	2664	46
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.10	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1317	170	1441	1163	1870	1585	1781	4855	355	1781	5169	89
Grp Volume(v), veh/h	72	0	218	200	33	48	129	1389	742	24	1444	788
Grp Sat Flow(s),veh/h/ln	1317	0	1611	1163	1870	1585	1781	1702	1806	1781	1702	1854
Q Serve(g_s), s	5.1	0.0	13.5	20.5	1.5	2.7	4.2	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	6.6	0.0	13.5	34.0	1.5	2.7	4.2	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.89	1.00		1.00	1.00		0.20	1.00		0.05
Lane Grp Cap(c), veh/h	416	0	456	259	530	449	240	1851	982	198	1754	956
V/C Ratio(X)	0.17	0.00	0.48	0.77	0.06	0.11	0.54	0.75	0.76	0.12	0.82	0.82
Avail Cap(c_a), veh/h	416	0	456	259	530	449	282	1851	982	232	1754	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.50	0.50	0.50	0.70	0.70	0.70
Uniform Delay (d), s/veh	33.8	0.0	35.6	49.8	31.4	31.8	11.5	0.0	0.0	12.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.8	13.4	0.0	0.1	0.9	1.4	2.8	0.2	3.2	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	5.4	6.9	0.7	1.1	1.6	0.4	0.8	0.3	0.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	0.0	36.4	63.1	31.4	31.9	12.5	1.4	2.8	12.8	3.2	5.8
LnGrp LOS	C	A	D	E	C	C	B	A	A	B	A	A
Approach Vol, veh/h	290			281			2260			2256		
Approach Delay, s/veh	35.8			54.1			2.5			4.2		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	71.2		40.0	12.2	67.8		40.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	63.0		34.0	9.0	59.0		34.0				
Max Q Clear Time (g_c+I1), s	2.7	2.0		15.5	6.2	2.0		36.0				
Green Ext Time (p_c), s	0.0	31.2		1.5	0.1	32.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	8.0											
HCM 6th LOS	A											

Timings 11: Broadway & Southpark Drive

2045 Background AM

11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	30	8	107	20	35	199	2046	31	1617
Future Volume (vph)	30	8	107	20	35	199	2046	31	1617
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	81.0	11.0	64.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	67.5%	9.2%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

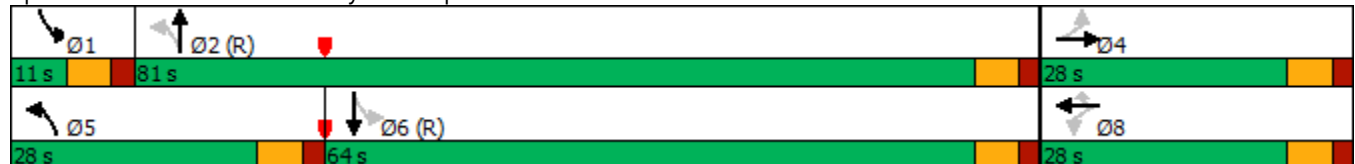
Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary 11: Broadway & Southpark Drive

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	8	92	107	20	35	199	2046	204	31	1617	62
Future Volume (veh/h)	30	8	92	107	20	35	199	2046	204	31	1617	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	8	96	111	21	36	207	2131	212	32	1684	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	263	20	238	192	300	254	346	3130	308	205	3156	122
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.13	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1346	123	1480	1290	1870	1585	1781	4726	465	1781	5045	195
Grp Volume(v), veh/h	31	0	104	111	21	36	207	1528	815	32	1136	613
Grp Sat Flow(s),veh/h/ln	1346	0	1604	1290	1870	1585	1781	1702	1787	1781	1702	1835
Q Serve(g_s), s	2.4	0.0	7.0	10.1	1.1	2.3	5.2	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	3.5	0.0	7.0	17.1	1.1	2.3	5.2	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.92	1.00		1.00	1.00		0.26	1.00		0.11
Lane Grp Cap(c), veh/h	263	0	257	192	300	254	346	2254	1183	205	2129	1148
V/C Ratio(X)	0.12	0.00	0.40	0.58	0.07	0.14	0.60	0.68	0.69	0.16	0.53	0.53
Avail Cap(c_a), veh/h	294	0	294	221	343	291	559	2254	1183	230	2129	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.49	0.49	0.49	0.84	0.84	0.84
Uniform Delay (d), s/veh	44.3	0.0	45.2	52.9	42.8	43.3	6.0	0.0	0.0	7.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.0	2.8	0.1	0.3	0.8	0.8	1.6	0.3	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.9	3.4	0.5	0.9	1.7	0.3	0.5	0.3	0.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.0	46.2	55.7	42.9	43.5	6.8	0.8	1.6	7.5	0.8	1.5
LnGrp LOS	D	A	D	E	D	D	A	A	A	A	A	A
Approach Vol, veh/h	135			168			2550			1781		
Approach Delay, s/veh	45.8			51.5			1.6			1.2		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	85.5		25.3	13.7	81.1		25.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	75.0		22.0	22.0	58.0		22.0				
Max Q Clear Time (g_c+l1), s	2.8	2.0		9.0	7.2	2.0		19.1				
Green Ext Time (p_c), s	0.0	40.6		0.5	0.5	21.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				4.5								
HCM 6th LOS				A								

Timings 11: Broadway & Southpark Drive

2045 Background PM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	66	22	192	32	46	78	2034	23	2247
Future Volume (vph)	66	22	192	32	46	78	2034	23	2247
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	12.0	69.0	11.0	68.0
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	10.0%	57.5%	9.2%	56.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive



HCM 6th Signalized Intersection Summary 11: Broadway & Southpark Drive

2045 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	22	149	192	32	46	78	2034	140	23	2247	30
Future Volume (veh/h)	66	22	149	192	32	46	78	2034	140	23	2247	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	23	155	200	33	48	81	2119	146	24	2341	31
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	57	382	278	507	430	210	2713	186	190	2805	37
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.08	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1317	209	1408	1206	1870	1585	1781	4880	334	1781	5193	69
Grp Volume(v), veh/h	69	0	178	200	33	48	81	1474	791	24	1533	839
Grp Sat Flow(s),veh/h/ln	1317	0	1617	1206	1870	1585	1781	1702	1810	1781	1702	1858
Q Serve(g_s), s	4.9	0.0	10.8	19.5	1.6	2.7	2.4	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	10.8	30.4	1.6	2.7	2.4	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.87	1.00		1.00	1.00		0.18	1.00		0.04
Lane Grp Cap(c), veh/h	400	0	438	278	507	430	210	1892	1006	190	1838	1003
V/C Ratio(X)	0.17	0.00	0.41	0.72	0.07	0.11	0.39	0.78	0.79	0.13	0.83	0.84
Avail Cap(c_a), veh/h	416	0	458	293	530	449	230	1892	1006	224	1838	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.41	0.41	0.41	0.65	0.65	0.65
Uniform Delay (d), s/veh	34.9	0.0	35.8	48.3	32.4	32.9	10.7	0.0	0.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	7.8	0.1	0.1	0.5	1.4	2.6	0.2	3.1	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	4.4	6.5	0.7	1.1	0.9	0.4	0.7	0.3	0.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	36.4	56.1	32.5	33.0	11.2	1.4	2.6	11.5	3.1	5.5
LnGrp LOS	D	A	D	E	C	C	B	A	A	B	A	A
Approach Vol, veh/h	247			281			2346			2396		
Approach Delay, s/veh	36.0			49.4			2.1			4.0		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	72.7		38.5	10.7	70.8		38.5				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	63.0		34.0	6.0	62.0		34.0				
Max Q Clear Time (g_c+I1), s	2.7	2.0		12.8	4.4	2.0		32.4				
Green Ext Time (p_c), s	0.0	34.7		1.2	0.0	36.9		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	7.1											
HCM 6th LOS	A											

Timings 11: Broadway & Southpark Drive

2045 Total AM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	32	7	96	18	31	216	2067	28	1634
Future Volume (vph)	32	7	96	18	31	216	2067	28	1634
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	29.0	81.0	11.0	63.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	24.2%	67.5%	9.2%	52.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive

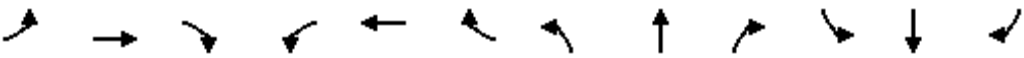


HCM 6th Signalized Intersection Summary

11: Broadway & Southpark Drive

2045 Total AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	7	125	96	18	31	216	2067	183	28	1634	58
Future Volume (veh/h)	32	7	125	96	18	31	216	2067	183	28	1634	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	7	130	100	19	32	225	2153	191	29	1702	60
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	14	263	180	324	274	346	3111	273	182	3084	109
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.09	0.87	0.87	0.05	1.00	1.00
Sat Flow, veh/h	1354	82	1516	1252	1870	1585	1781	4779	420	1781	5064	178
Grp Volume(v), veh/h	33	0	137	100	19	32	225	1527	817	29	1144	618
Grp Sat Flow(s),veh/h/ln	1354	0	1598	1252	1870	1585	1781	1702	1795	1781	1702	1838
Q Serve(g_s), s	2.5	0.0	9.3	9.4	1.0	2.0	5.6	17.9	18.6	0.7	0.0	0.0
Cycle Q Clear(g_c), s	3.5	0.0	9.3	18.7	1.0	2.0	5.6	17.9	18.6	0.7	0.0	0.0
Prop In Lane	1.00		0.95	1.00		1.00	1.00		0.23	1.00		0.10
Lane Grp Cap(c), veh/h	283	0	277	180	324	274	346	2216	1168	182	2073	1119
V/C Ratio(X)	0.12	0.00	0.50	0.56	0.06	0.12	0.65	0.69	0.70	0.16	0.55	0.55
Avail Cap(c_a), veh/h	297	0	293	192	343	291	567	2216	1168	210	2073	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.46	0.46	0.46	0.85	0.85	0.85
Uniform Delay (d), s/veh	42.9	0.0	44.9	53.3	41.4	41.9	6.7	4.0	4.1	8.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.4	3.1	0.1	0.2	1.0	0.8	1.6	0.3	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	3.8	3.1	0.5	0.8	2.0	3.4	3.9	0.3	0.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	46.2	56.4	41.5	42.0	7.6	4.8	5.7	9.2	0.9	1.7
LnGrp LOS	D	A	D	E	D	D	A	A	A	A	A	A
Approach Vol, veh/h	170			151			2569			1791		
Approach Delay, s/veh	45.6			51.5			5.3			1.3		
Approach LOS	D			D			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.1	84.1		26.8	14.1	79.1		26.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	75.0		22.0	23.0	57.0		22.0				
Max Q Clear Time (g_c+l1), s	2.7	20.6		11.3	7.6	2.0		20.7				
Green Ext Time (p_c), s	0.0	34.4		0.6	0.5	21.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay	6.8											
HCM 6th LOS	A											

Timings 11: Broadway & Southpark Drive

2045 Total PM
11/10/2023

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	69	22	192	32	46	124	2066	23	2280
Future Volume (vph)	69	22	192	32	46	124	2066	23	2280
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	15.0	71.0	11.0	67.0
Total Split (%)	31.7%	31.7%	31.7%	31.7%	31.7%	12.5%	59.2%	9.2%	55.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 11: Broadway & Southpark Drive

		
Ø1	Ø2 (R)	Ø4
11 s	71 s	38 s
		
Ø5	Ø6 (R)	Ø8
15 s	67 s	38 s

HCM 6th Signalized Intersection Summary

2045 Total PM

11: Broadway & Southpark Drive

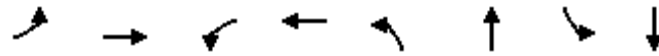
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	22	187	192	32	46	124	2066	140	23	2280	36
Future Volume (veh/h)	69	22	187	192	32	46	124	2066	140	23	2280	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	23	195	200	33	48	129	2152	146	24	2375	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	45	384	237	499	423	226	2738	184	186	2761	44
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.10	1.00	1.00	0.05	1.00	1.00
Sat Flow, veh/h	1317	170	1441	1163	1870	1585	1781	4886	329	1781	5177	83
Grp Volume(v), veh/h	72	0	218	200	33	48	129	1494	804	24	1560	853
Grp Sat Flow(s),veh/h/ln	1317	0	1611	1163	1870	1585	1781	1702	1811	1781	1702	1855
Q Serve(g_s), s	5.2	0.0	13.8	18.2	1.6	2.7	4.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	13.8	32.0	1.6	2.7	4.0	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.89	1.00		1.00	1.00		0.18	1.00		0.04
Lane Grp Cap(c), veh/h	394	0	430	237	499	423	226	1908	1015	186	1815	989
V/C Ratio(X)	0.18	0.00	0.51	0.84	0.07	0.11	0.57	0.78	0.79	0.13	0.86	0.86
Avail Cap(c_a), veh/h	394	0	430	237	499	423	270	1908	1015	220	1815	989
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.46	0.46	0.46	0.64	0.64	0.64
Uniform Delay (d), s/veh	35.4	0.0	37.3	51.9	32.8	33.3	10.7	0.0	0.0	11.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.0	23.5	0.1	0.1	1.1	1.5	3.0	0.2	3.7	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	5.5	7.6	0.7	1.1	1.5	0.4	0.8	0.3	0.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	0.0	38.3	75.4	32.9	33.4	11.7	1.5	3.0	11.9	3.7	6.6
LnGrp LOS	D	A	D	E	C	C	B	A	A	B	A	A
Approach Vol, veh/h	290			281			2427			2437		
Approach Delay, s/veh	37.6			63.3			2.6			4.8		
Approach LOS	D			E			A			A		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	73.2		38.0	12.0	70.0		38.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	65.0		32.0	9.0	61.0		32.0				
Max Q Clear Time (g_c+I1), s	2.7	2.0		15.8	6.0	2.0		34.0				
Green Ext Time (p_c), s	0.0	36.2		1.4	0.1	37.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	8.6											
HCM 6th LOS	A											

Timings 12: County Line & Southpark Terrace

2023 Adjusted Existing AM

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	416	96	381	9	5	28	4
Future Volume (vph)	78	416	96	381	9	5	28	4
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	20.0	51.0	24.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	16.7%	42.5%	20.0%	45.8%	12.5%	25.0%	12.5%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

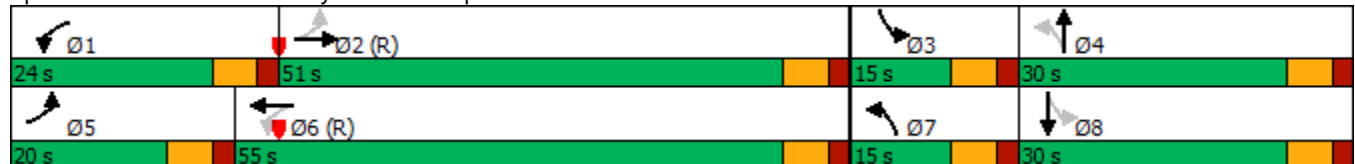
Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



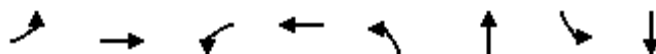
HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2023 Adjusted Existing AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	416	28	96	381	90	9	5	39	28	4	32
Future Volume (veh/h)	78	416	28	96	381	90	9	5	39	28	4	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	433	29	100	397	94	9	5	41	29	4	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	710	2333	156	731	1975	463	130	8	63	127	10	85
Arrive On Green	0.04	0.69	0.69	0.04	0.69	0.69	0.01	0.04	0.04	0.03	0.06	0.06
Sat Flow, veh/h	1781	3381	226	1781	2857	670	1781	175	1437	1781	174	1437
Grp Volume(v), veh/h	81	227	235	100	245	246	9	0	46	29	0	37
Grp Sat Flow(s),veh/h/ln	1781	1777	1830	1781	1777	1750	1781	0	1612	1781	0	1612
Q Serve(g_s), s	1.5	5.4	5.5	1.9	5.9	6.0	0.6	0.0	3.4	1.8	0.0	2.7
Cycle Q Clear(g_c), s	1.5	5.4	5.5	1.9	5.9	6.0	0.6	0.0	3.4	1.8	0.0	2.7
Prop In Lane	1.00		0.12	1.00		0.38	1.00		0.89	1.00		0.89
Lane Grp Cap(c), veh/h	710	1226	1263	731	1229	1210	130	0	71	127	0	95
V/C Ratio(X)	0.11	0.19	0.19	0.14	0.20	0.20	0.07	0.00	0.65	0.23	0.00	0.39
Avail Cap(c_a), veh/h	848	1226	1263	927	1229	1210	244	0	322	215	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	6.6	6.6	4.8	6.6	6.6	53.9	0.0	56.5	52.8	0.0	54.4
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.1	0.3	0.3	0.2	0.0	9.6	0.9	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.0	2.1	0.7	2.2	2.2	0.3	0.0	1.6	0.9	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.8	6.9	6.9	4.8	6.9	6.9	54.1	0.0	66.1	53.7	0.0	57.0
LnGrp LOS	A	A	A	A	A	A	D	A	E	D	A	E
Approach Vol, veh/h	543			591			55			66		
Approach Delay, s/veh	6.6			6.6			64.1			55.6		
Approach LOS	A			A			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	88.8	9.1	11.3	10.7	89.0	7.3	13.1				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	18.0	45.0	9.0	24.0	14.0	49.0	9.0	24.0				
Max Q Clear Time (g_c+l1), s	3.9	7.5	3.8	5.4	3.5	8.0	2.6	4.7				
Green Ext Time (p_c), s	0.2	3.0	0.0	0.2	0.1	3.3	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	11.7											
HCM 6th LOS	B											

Timings 12: County Line & Southpark Terrace

2023 Adjusted Existing PM
11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	81	610	42	521	25	6	97	10
Future Volume (vph)	81	610	42	521	25	6	97	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	17.0	57.0	15.0	55.0	13.0	30.0	18.0	35.0
Total Split (%)	14.2%	47.5%	12.5%	45.8%	10.8%	25.0%	15.0%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace

Ø1	Ø2 (R)	Ø3	Ø4
15 s	57 s	18 s	30 s
Ø5	Ø6 (R)	Ø7	Ø8
17 s	55 s	13 s	35 s

HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

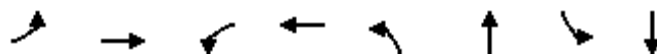
2023 Adjusted Existing PM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	610	9	42	521	100	25	6	83	97	10	109
Future Volume (veh/h)	81	610	9	42	521	100	25	6	83	97	10	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	656	10	45	560	108	27	6	89	104	11	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	534	2229	34	532	1829	352	160	8	117	206	17	177
Arrive On Green	0.04	0.62	0.62	0.03	0.62	0.62	0.02	0.08	0.08	0.07	0.12	0.12
Sat Flow, veh/h	1781	3583	55	1781	2973	571	1781	101	1499	1781	138	1468
Grp Volume(v), veh/h	87	325	341	45	334	334	27	0	95	104	0	128
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1767	1781	0	1600	1781	0	1606
Q Serve(g_s), s	2.1	10.2	10.2	1.1	10.7	10.8	1.7	0.0	7.0	6.3	0.0	9.1
Cycle Q Clear(g_c), s	2.1	10.2	10.2	1.1	10.7	10.8	1.7	0.0	7.0	6.3	0.0	9.1
Prop In Lane	1.00		0.03	1.00		0.32	1.00		0.94	1.00		0.91
Lane Grp Cap(c), veh/h	534	1106	1158	532	1093	1087	160	0	125	206	0	194
V/C Ratio(X)	0.16	0.29	0.29	0.08	0.31	0.31	0.17	0.00	0.76	0.51	0.00	0.66
Avail Cap(c_a), veh/h	627	1106	1158	608	1093	1087	220	0	320	264	0	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	10.5	10.5	8.0	10.9	11.0	49.1	0.0	54.2	45.8	0.0	50.4
Incr Delay (d2), s/veh	0.1	0.7	0.6	0.1	0.6	0.6	0.5	0.0	9.2	1.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.1	4.3	0.4	4.3	4.3	0.8	0.0	3.1	2.9	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	11.2	11.1	8.1	11.5	11.5	49.6	0.0	63.4	47.7	0.0	54.2
LnGrp LOS	A	B	B	A	B	B	D	A	E	D	A	D
Approach Vol, veh/h	753				713				122			
Approach Delay, s/veh	10.8				11.3				60.3			
Approach LOS	B				B				E			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	80.7	14.1	15.4	10.7	79.8	9.0	20.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	51.0	12.0	24.0	11.0	49.0	7.0	29.0				
Max Q Clear Time (g_c+l1), s	3.1	12.2	8.3	9.0	4.1	12.8	3.7	11.1				
Green Ext Time (p_c), s	0.0	4.6	0.1	0.4	0.1	4.7	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	19.5											
HCM 6th LOS	B											

Timings 12: County Line & Southpark Terrace

2028 Background AM

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	427	96	391	9	5	28	4
Future Volume (vph)	78	427	96	391	9	5	28	4
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	20.0	52.0	23.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	16.7%	43.3%	19.2%	45.8%	12.5%	25.0%	12.5%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2028 Background AM

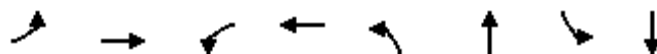
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	427	28	96	391	90	9	5	39	28	4	32
Future Volume (veh/h)	78	427	28	96	391	90	9	5	39	28	4	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	445	29	100	407	94	9	5	41	29	4	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	703	2338	152	723	1986	454	130	8	63	127	10	85
Arrive On Green	0.04	0.69	0.69	0.04	0.69	0.69	0.01	0.04	0.04	0.03	0.06	0.06
Sat Flow, veh/h	1781	3387	220	1781	2872	657	1781	175	1437	1781	174	1437
Grp Volume(v), veh/h	81	233	241	100	250	251	9	0	46	29	0	37
Grp Sat Flow(s),veh/h/ln	1781	1777	1831	1781	1777	1752	1781	0	1612	1781	0	1612
Q Serve(g_s), s	1.5	5.6	5.6	1.9	6.1	6.2	0.6	0.0	3.4	1.8	0.0	2.7
Cycle Q Clear(g_c), s	1.5	5.6	5.6	1.9	6.1	6.2	0.6	0.0	3.4	1.8	0.0	2.7
Prop In Lane	1.00		0.12	1.00		0.38	1.00		0.89	1.00		0.89
Lane Grp Cap(c), veh/h	703	1226	1263	723	1229	1211	130	0	71	127	0	95
V/C Ratio(X)	0.12	0.19	0.19	0.14	0.20	0.21	0.07	0.00	0.65	0.23	0.00	0.39
Avail Cap(c_a), veh/h	842	1226	1263	904	1229	1211	244	0	322	215	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	6.6	6.6	4.8	6.7	6.7	53.9	0.0	56.5	52.8	0.0	54.4
Incr Delay (d2), s/veh	0.1	0.3	0.3	0.1	0.3	0.3	0.2	0.0	9.6	0.9	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.1	2.2	0.7	2.2	2.3	0.3	0.0	1.6	0.9	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	7.0	7.0	4.8	6.9	6.9	54.1	0.0	66.1	53.7	0.0	57.0
LnGrp LOS	A	A	A	A	A	A	D	A	E	D	A	E
Approach Vol, veh/h	555			601			55			66		
Approach Delay, s/veh	6.7			6.6			64.1			55.6		
Approach LOS	A			A			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	88.8	9.1	11.3	10.7	89.0	7.3	13.1				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	17.0	46.0	9.0	24.0	14.0	49.0	9.0	24.0				
Max Q Clear Time (g_c+I1), s	3.9	7.6	3.8	5.4	3.5	8.2	2.6	4.7				
Green Ext Time (p_c), s	0.2	3.1	0.0	0.2	0.1	3.4	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	11.6											
HCM 6th LOS	B											

Timings 12: County Line & Southpark Terrace

2028 Background PM

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	81	625	42	534	25	6	97	10
Future Volume (vph)	81	625	42	534	25	6	97	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	17.0	57.0	15.0	55.0	13.0	29.0	19.0	35.0
Total Split (%)	14.2%	47.5%	12.5%	45.8%	10.8%	24.2%	15.8%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

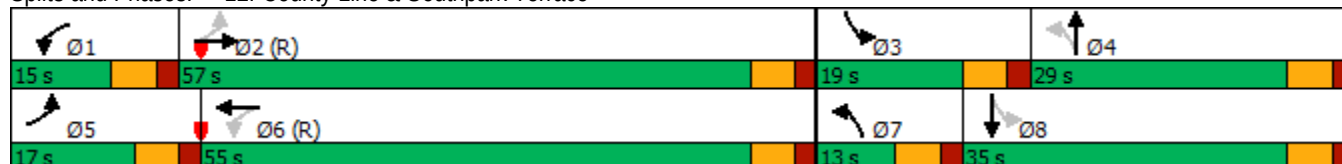
Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

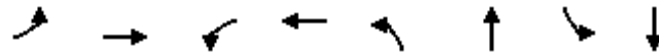
2028 Background PM

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	625	9	42	534	100	25	6	83	97	10	109
Future Volume (veh/h)	81	625	9	42	534	100	25	6	83	97	10	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	672	10	45	574	108	27	6	89	104	11	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	527	2230	33	524	1837	345	160	8	117	206	17	177
Arrive On Green	0.04	0.62	0.62	0.03	0.62	0.62	0.02	0.08	0.08	0.07	0.12	0.12
Sat Flow, veh/h	1781	3584	53	1781	2986	560	1781	101	1499	1781	138	1468
Grp Volume(v), veh/h	87	333	349	45	341	341	27	0	95	104	0	128
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1770	1781	0	1600	1781	0	1606
Q Serve(g_s), s	2.1	10.5	10.5	1.1	11.0	11.0	1.7	0.0	7.0	6.3	0.0	9.1
Cycle Q Clear(g_c), s	2.1	10.5	10.5	1.1	11.0	11.0	1.7	0.0	7.0	6.3	0.0	9.1
Prop In Lane	1.00		0.03	1.00		0.32	1.00		0.94	1.00		0.91
Lane Grp Cap(c), veh/h	527	1106	1158	524	1093	1089	160	0	125	206	0	194
V/C Ratio(X)	0.17	0.30	0.30	0.09	0.31	0.31	0.17	0.00	0.76	0.50	0.00	0.66
Avail Cap(c_a), veh/h	620	1106	1158	600	1093	1089	220	0	307	279	0	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.1	10.5	10.5	8.1	11.0	11.0	49.1	0.0	54.2	45.8	0.0	50.4
Incr Delay (d2), s/veh	0.1	0.7	0.7	0.1	0.5	0.5	0.5	0.0	9.2	1.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.2	4.4	0.4	4.3	4.4	0.8	0.0	3.1	2.9	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	11.2	11.2	8.1	11.5	11.5	49.6	0.0	63.5	47.7	0.0	54.2
LnGrp LOS	A	B	B	A	B	B	D	A	E	D	A	D
Approach Vol, veh/h	769			727			122			232		
Approach Delay, s/veh	10.9			11.3			60.4			51.3		
Approach LOS	B			B			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	80.7	14.1	15.3	10.7	79.8	9.0	20.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	51.0	13.0	23.0	11.0	49.0	7.0	29.0				
Max Q Clear Time (g_c+l1), s	3.1	12.5	8.3	9.0	4.1	13.0	3.7	11.1				
Green Ext Time (p_c), s	0.0	4.8	0.1	0.4	0.1	4.8	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	19.4											
HCM 6th LOS	B											

Timings
12: County Line & Southpark Terrace

2028 Total AM
11/13/2023

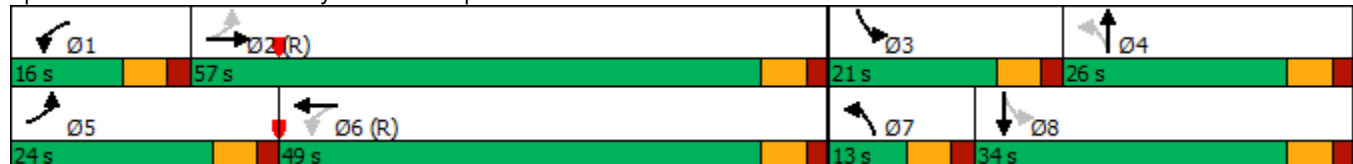


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	147	403	96	362	9	5	125	4
Future Volume (vph)	147	403	96	362	9	5	125	4
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	57.0	16.0	49.0	13.0	26.0	21.0	34.0
Total Split (%)	20.0%	47.5%	13.3%	40.8%	10.8%	21.7%	17.5%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



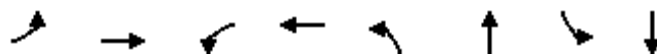
HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2028 Total AM
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	147	403	28	96	362	196	9	5	39	125	4	100
Future Volume (veh/h)	147	403	28	96	362	196	9	5	39	125	4	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	420	29	100	377	204	9	5	41	130	4	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	2127	146	675	1390	741	138	8	65	233	7	182
Arrive On Green	0.05	0.63	0.63	0.04	0.62	0.62	0.01	0.05	0.05	0.08	0.12	0.12
Sat Flow, veh/h	1781	3373	232	1781	2239	1194	1781	175	1437	1781	59	1535
Grp Volume(v), veh/h	153	221	228	100	298	283	9	0	46	130	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	1829	1781	1777	1656	1781	0	1612	1781	0	1594
Q Serve(g_s), s	3.7	6.3	6.3	2.4	9.2	9.4	0.6	0.0	3.4	8.1	0.0	7.7
Cycle Q Clear(g_c), s	3.7	6.3	6.3	2.4	9.2	9.4	0.6	0.0	3.4	8.1	0.0	7.7
Prop In Lane	1.00		0.13	1.00		0.72	1.00		0.89	1.00		0.96
Lane Grp Cap(c), veh/h	601	1120	1153	675	1103	1028	138	0	73	233	0	189
V/C Ratio(X)	0.25	0.20	0.20	0.15	0.27	0.28	0.07	0.00	0.63	0.56	0.00	0.57
Avail Cap(c_a), veh/h	779	1120	1153	752	1103	1028	223	0	269	307	0	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.67	0.67	0.67	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	9.4	9.4	7.4	10.4	10.4	53.7	0.0	56.3	47.3	0.0	50.0
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.1	0.4	0.4	0.2	0.0	8.4	2.1	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.5	2.6	0.9	3.6	3.5	0.3	0.0	1.5	3.7	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	9.8	9.8	7.5	10.8	10.9	53.9	0.0	64.7	49.4	0.0	52.7
LnGrp LOS	A	A	A	A	B	B	D	A	E	D	A	D
Approach Vol, veh/h	602			681			55			238		
Approach Delay, s/veh	9.3			10.3			62.9			50.9		
Approach LOS	A			B			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	81.7	16.1	11.5	12.0	80.5	7.3	20.2				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	10.0	51.0	15.0	20.0	18.0	43.0	7.0	28.0				
Max Q Clear Time (g_c+l1), s	4.4	8.3	10.1	5.4	5.7	11.4	2.6	9.7				
Green Ext Time (p_c), s	0.1	2.9	0.1	0.1	0.3	4.0	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	17.9											
HCM 6th LOS	B											

Timings 12: County Line & Southpark Terrace

2028 Total PM
11/13/2023

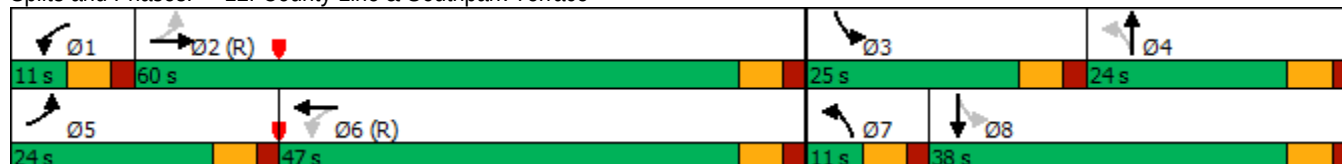


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	188	573	42	482	25	6	240	10
Future Volume (vph)	188	573	42	482	25	6	240	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	60.0	11.0	47.0	11.0	24.0	25.0	38.0
Total Split (%)	20.0%	50.0%	9.2%	39.2%	9.2%	20.0%	20.8%	31.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

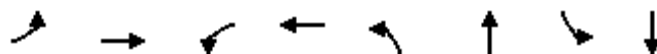
2028 Total PM
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	573	9	42	482	251	25	6	83	240	10	214
Future Volume (veh/h)	188	573	9	42	482	251	25	6	83	240	10	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	202	616	10	45	518	270	27	6	89	258	11	230
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	1947	32	477	1139	592	168	8	116	345	14	303
Arrive On Green	0.07	0.54	0.54	0.03	0.50	0.50	0.02	0.08	0.08	0.15	0.20	0.20
Sat Flow, veh/h	1781	3579	58	1781	2261	1175	1781	101	1499	1781	73	1523
Grp Volume(v), veh/h	202	306	320	45	407	381	27	0	95	258	0	241
Grp Sat Flow(s),veh/h/ln	1781	1777	1860	1781	1777	1659	1781	0	1600	1781	0	1596
Q Serve(g_s), s	6.4	11.4	11.4	1.4	17.7	17.8	1.7	0.0	7.0	15.4	0.0	17.1
Cycle Q Clear(g_c), s	6.4	11.4	11.4	1.4	17.7	17.8	1.7	0.0	7.0	15.4	0.0	17.1
Prop In Lane	1.00		0.03	1.00		0.71	1.00		0.94	1.00		0.95
Lane Grp Cap(c), veh/h	434	967	1012	477	895	835	168	0	123	345	0	317
V/C Ratio(X)	0.47	0.32	0.32	0.09	0.45	0.46	0.16	0.00	0.77	0.75	0.00	0.76
Avail Cap(c_a), veh/h	571	967	1012	493	895	835	198	0	240	367	0	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.48	0.48	0.48	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	15.1	15.1	13.4	19.2	19.2	49.2	0.0	54.3	40.9	0.0	45.4
Incr Delay (d2), s/veh	0.8	0.9	0.8	0.0	0.8	0.9	0.4	0.0	9.7	7.7	0.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	4.8	5.0	0.6	7.4	7.0	0.8	0.0	3.1	7.5	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	15.9	15.9	13.5	20.0	20.1	49.6	0.0	64.0	48.7	0.0	50.8
LnGrp LOS	B	B	B	B	B	C	D	A	E	D	A	D
Approach Vol, veh/h	828			833			122			499		
Approach Delay, s/veh	15.6			19.7			60.8			49.7		
Approach LOS	B			B			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	71.3	23.6	15.2	14.8	66.4	9.0	29.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	54.0	19.0	18.0	18.0	41.0	5.0	32.0				
Max Q Clear Time (g_c+l1), s	3.4	13.4	17.4	9.0	8.4	19.8	3.7	19.1				
Green Ext Time (p_c), s	0.0	4.3	0.1	0.3	0.4	5.3	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay	26.9											
HCM 6th LOS	C											

Timings 12: County Line & Southpark Terrace

2045 Background AM

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	78	464	96	425	9	5	28	4
Future Volume (vph)	78	464	96	425	9	5	28	4
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	20.0	53.0	22.0	55.0	15.0	30.0	15.0	30.0
Total Split (%)	16.7%	44.2%	18.3%	45.8%	12.5%	25.0%	12.5%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace

	Ø1		Ø2 (R)		Ø3		Ø4
22 s		53 s		15 s		30 s	
	Ø5		Ø6 (R)		Ø7		Ø8
20 s		55 s		15 s		30 s	

HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2045 Background AM

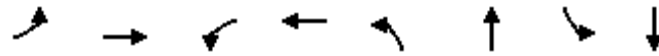
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	464	28	96	425	90	9	5	39	28	4	32
Future Volume (veh/h)	78	464	28	96	425	90	9	5	39	28	4	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	483	29	100	443	94	9	5	41	29	4	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	681	2351	141	699	2020	425	130	8	63	127	10	85
Arrive On Green	0.04	0.69	0.69	0.04	0.69	0.69	0.01	0.04	0.04	0.03	0.06	0.06
Sat Flow, veh/h	1781	3406	204	1781	2921	615	1781	175	1437	1781	174	1437
Grp Volume(v), veh/h	81	251	261	100	268	269	9	0	46	29	0	37
Grp Sat Flow(s),veh/h/ln	1781	1777	1834	1781	1777	1760	1781	0	1612	1781	0	1612
Q Serve(g_s), s	1.5	6.1	6.2	1.9	6.6	6.7	0.6	0.0	3.4	1.8	0.0	2.7
Cycle Q Clear(g_c), s	1.5	6.1	6.2	1.9	6.6	6.7	0.6	0.0	3.4	1.8	0.0	2.7
Prop In Lane	1.00		0.11	1.00		0.35	1.00		0.89	1.00		0.89
Lane Grp Cap(c), veh/h	681	1226	1265	699	1229	1217	130	0	71	127	0	95
V/C Ratio(X)	0.12	0.21	0.21	0.14	0.22	0.22	0.07	0.00	0.65	0.23	0.00	0.39
Avail Cap(c_a), veh/h	820	1226	1265	865	1229	1217	244	0	322	215	0	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	6.7	6.7	4.8	6.7	6.7	53.9	0.0	56.5	52.8	0.0	54.4
Incr Delay (d2), s/veh	0.1	0.4	0.4	0.1	0.3	0.3	0.2	0.0	9.6	0.9	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.3	2.4	0.7	2.4	2.4	0.3	0.0	1.6	0.9	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	7.1	7.1	4.9	7.0	7.0	54.1	0.0	66.1	53.7	0.0	57.0
LnGrp LOS	A	A	A	A	A	A	D	A	E	D	A	E
Approach Vol, veh/h	593			637			55			66		
Approach Delay, s/veh	6.8			6.7			64.1			55.6		
Approach LOS	A			A			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	88.8	9.1	11.3	10.7	89.0	7.3	13.1				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	47.0	9.0	24.0	14.0	49.0	9.0	24.0				
Max Q Clear Time (g_c+I1), s	3.9	8.2	3.8	5.4	3.5	8.7	2.6	4.7				
Green Ext Time (p_c), s	0.2	3.4	0.0	0.2	0.1	3.7	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	11.5											
HCM 6th LOS	B											

Timings 12: County Line & Southpark Terrace

2045 Background PM

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	81	681	42	581	25	6	97	10
Future Volume (vph)	81	681	42	581	25	6	97	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	17.0	59.0	15.0	57.0	13.0	29.0	17.0	33.0
Total Split (%)	14.2%	49.2%	12.5%	47.5%	10.8%	24.2%	14.2%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

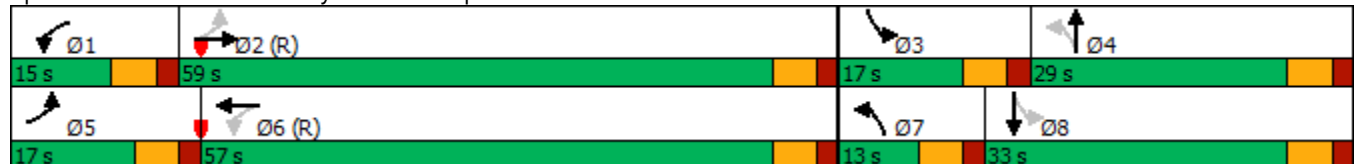
Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2045 Background PM

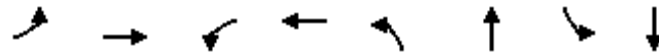
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	681	9	42	581	100	25	6	83	97	10	109
Future Volume (veh/h)	81	681	9	42	581	100	25	6	83	97	10	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	732	10	45	625	108	27	6	89	104	11	117
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	503	2234	31	495	1865	322	160	8	117	206	17	177
Arrive On Green	0.04	0.62	0.62	0.03	0.62	0.62	0.02	0.08	0.08	0.07	0.12	0.12
Sat Flow, veh/h	1781	3589	49	1781	3030	523	1781	101	1499	1781	138	1468
Grp Volume(v), veh/h	87	362	380	45	366	367	27	0	95	104	0	128
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	1776	1781	0	1600	1781	0	1606
Q Serve(g_s), s	2.1	11.6	11.6	1.1	12.0	12.0	1.7	0.0	7.0	6.3	0.0	9.1
Cycle Q Clear(g_c), s	2.1	11.6	11.6	1.1	12.0	12.0	1.7	0.0	7.0	6.3	0.0	9.1
Prop In Lane	1.00		0.03	1.00		0.29	1.00		0.94	1.00		0.91
Lane Grp Cap(c), veh/h	503	1106	1159	495	1094	1093	160	0	125	206	0	193
V/C Ratio(X)	0.17	0.33	0.33	0.09	0.33	0.34	0.17	0.00	0.76	0.51	0.00	0.66
Avail Cap(c_a), veh/h	596	1106	1159	571	1094	1093	220	0	307	249	0	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.58	0.58	0.58	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.2	10.7	10.7	8.2	11.2	11.2	49.1	0.0	54.2	45.8	0.0	50.4
Incr Delay (d2), s/veh	0.2	0.8	0.8	0.0	0.5	0.5	0.5	0.0	9.2	1.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.7	4.9	0.4	4.7	4.7	0.8	0.0	3.1	2.9	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.4	11.5	11.5	8.2	11.7	11.7	49.6	0.0	63.5	47.8	0.0	54.3
LnGrp LOS	A	B	B	A	B	B	D	A	E	D	A	D
Approach Vol, veh/h	829			778			122			232		
Approach Delay, s/veh	11.2			11.5			60.4			51.4		
Approach LOS	B			B			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	80.7	14.1	15.3	10.7	79.9	9.0	20.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	9.0	53.0	11.0	23.0	11.0	51.0	7.0	27.0				
Max Q Clear Time (g_c+I1), s	3.1	13.6	8.3	9.0	4.1	14.0	3.7	11.1				
Green Ext Time (p_c), s	0.0	5.3	0.1	0.4	0.1	5.3	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	19.1											
HCM 6th LOS	B											

Timings
12: County Line & Southpark Terrace

2045 Total AM

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	147	440	96	396	9	5	125	4
Future Volume (vph)	147	440	96	396	9	5	125	4
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	58.0	16.0	50.0	13.0	26.0	20.0	33.0
Total Split (%)	20.0%	48.3%	13.3%	41.7%	10.8%	21.7%	16.7%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

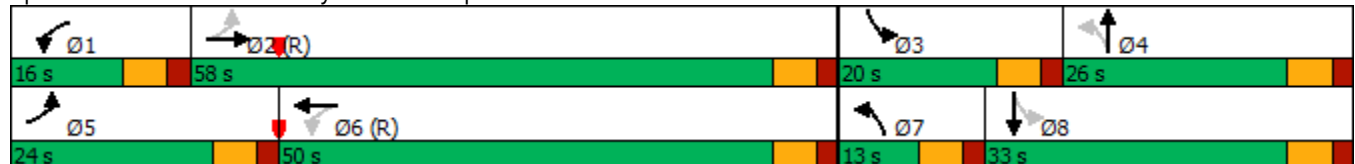
Actuated Cycle Length: 120

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

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



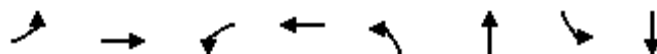
HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2045 Total AM
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	147	440	28	96	396	196	9	5	39	125	4	100
Future Volume (veh/h)	147	440	28	96	396	196	9	5	39	125	4	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	458	29	100	412	204	9	5	41	130	4	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	582	2140	135	652	1436	703	138	8	65	233	7	182
Arrive On Green	0.05	0.63	0.63	0.04	0.62	0.62	0.01	0.05	0.05	0.08	0.12	0.12
Sat Flow, veh/h	1781	3394	214	1781	2312	1132	1781	175	1437	1781	59	1535
Grp Volume(v), veh/h	153	239	248	100	316	300	9	0	46	130	0	108
Grp Sat Flow(s),veh/h/ln	1781	1777	1832	1781	1777	1667	1781	0	1612	1781	0	1594
Q Serve(g_s), s	3.7	6.9	6.9	2.4	9.8	10.0	0.6	0.0	3.4	8.1	0.0	7.7
Cycle Q Clear(g_c), s	3.7	6.9	6.9	2.4	9.8	10.0	0.6	0.0	3.4	8.1	0.0	7.7
Prop In Lane	1.00		0.12	1.00		0.68	1.00		0.89	1.00		0.96
Lane Grp Cap(c), veh/h	582	1120	1155	652	1103	1035	138	0	73	233	0	189
V/C Ratio(X)	0.26	0.21	0.21	0.15	0.29	0.29	0.07	0.00	0.63	0.56	0.00	0.57
Avail Cap(c_a), veh/h	761	1120	1155	729	1103	1035	223	0	269	292	0	359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.62	0.62	0.62	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	9.5	9.5	7.5	10.5	10.5	53.7	0.0	56.3	47.3	0.0	50.0
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.1	0.4	0.4	0.2	0.0	8.4	2.1	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.7	2.8	0.9	3.9	3.7	0.3	0.0	1.5	3.7	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.9	9.9	9.9	7.5	10.9	11.0	53.9	0.0	64.7	49.4	0.0	52.7
LnGrp LOS	A	A	A	A	B	B	D	A	E	D	A	D
Approach Vol, veh/h		640			716			55			238	
Approach Delay, s/veh		9.4			10.4			62.9			50.9	
Approach LOS		A			B			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.8	81.7	16.0	11.5	12.0	80.5	7.3	20.2				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	10.0	52.0	14.0	20.0	18.0	44.0	7.0	27.0				
Max Q Clear Time (g_c+l1), s	4.4	8.9	10.1	5.4	5.7	12.0	2.6	9.7				
Green Ext Time (p_c), s	0.1	3.2	0.1	0.1	0.3	4.3	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									

Timings 12: County Line & Southpark Terrace

2045 Total PM
11/13/2023

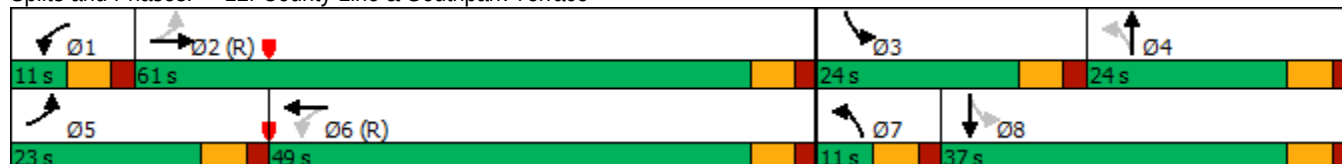


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	188	629	42	529	25	6	240	10
Future Volume (vph)	188	629	42	529	25	6	240	10
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6		4		8	
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	24.0	11.0	24.0	11.0	24.0
Total Split (s)	23.0	61.0	11.0	49.0	11.0	24.0	24.0	37.0
Total Split (%)	19.2%	50.8%	9.2%	40.8%	9.2%	20.0%	20.0%	30.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 12: County Line & Southpark Terrace



HCM 6th Signalized Intersection Summary 12: County Line & Southpark Terrace

2045 Total PM
11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	629	9	42	529	251	25	6	83	240	10	214
Future Volume (veh/h)	188	629	9	42	529	251	25	6	83	240	10	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	202	676	10	45	569	270	27	6	89	258	11	230
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	1953	29	449	1180	559	167	8	116	344	14	302
Arrive On Green	0.07	0.54	0.54	0.03	0.50	0.50	0.02	0.08	0.08	0.15	0.20	0.20
Sat Flow, veh/h	1781	3585	53	1781	2339	1108	1781	101	1499	1781	73	1523
Grp Volume(v), veh/h	202	335	351	45	432	407	27	0	95	258	0	241
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1671	1781	0	1600	1781	0	1596
Q Serve(g_s), s	6.4	12.7	12.7	1.4	19.1	19.2	1.7	0.0	7.0	15.5	0.0	17.1
Cycle Q Clear(g_c), s	6.4	12.7	12.7	1.4	19.1	19.2	1.7	0.0	7.0	15.5	0.0	17.1
Prop In Lane	1.00		0.03	1.00		0.66	1.00		0.94	1.00		0.95
Lane Grp Cap(c), veh/h	415	968	1014	449	896	843	167	0	123	344	0	316
V/C Ratio(X)	0.49	0.35	0.35	0.10	0.48	0.48	0.16	0.00	0.77	0.75	0.00	0.76
Avail Cap(c_a), veh/h	538	968	1014	466	896	843	198	0	240	352	0	412
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.37	0.37	0.37	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	15.3	15.3	13.5	19.5	19.5	49.2	0.0	54.3	41.0	0.0	45.4
Incr Delay (d2), s/veh	0.9	1.0	0.9	0.0	0.7	0.7	0.4	0.0	9.7	8.5	0.0	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.3	5.6	0.6	7.9	7.5	0.8	0.0	3.1	7.6	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	16.3	16.3	13.5	20.2	20.2	49.6	0.0	64.0	49.5	0.0	51.4
LnGrp LOS	B	B	B	B	C	C	D	A	E	D	A	D
Approach Vol, veh/h	888			884			122			499		
Approach Delay, s/veh	16.0			19.9			60.8			50.4		
Approach LOS	B			B			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	71.4	23.5	15.2	14.7	66.5	9.0	29.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	55.0	18.0	18.0	17.0	43.0	5.0	31.0				
Max Q Clear Time (g_c+l1), s	3.4	14.7	17.5	9.0	8.4	21.2	3.7	19.1				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.3	0.4	5.7	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	26.9											
HCM 6th LOS	C											

Timings
13: Broadway & County Line

2023 Adjusted Existing AM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	114	150	147	140	188	167	255	1620	217	188	1070
Future Volume (vph)	114	150	147	140	188	167	255	1620	217	188	1070
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	15.0	24.0	24.0	16.0	25.0	25.0	21.0	62.0	62.0	18.0	59.0
Total Split (%)	12.5%	20.0%	20.0%	13.3%	20.8%	20.8%	17.5%	51.7%	51.7%	15.0%	49.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

			
Ø1	Ø2 (R)	Ø3	Ø4
18 s	62 s	16 s	24 s
			
Ø5	Ø6 (R)	Ø7	Ø8
21 s	59 s	15 s	25 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2023 Adjusted Existing AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	150	147	140	188	167	255	1620	217	188	1070	113
Future Volume (veh/h)	114	150	147	140	188	167	255	1620	217	188	1070	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	158	155	147	198	176	268	1705	228	198	1126	119
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	431	192	292	465	207	330	2662	826	256	2345	248
Arrive On Green	0.02	0.04	0.04	0.08	0.13	0.13	0.10	0.52	0.52	0.10	0.66	0.66
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4690	495
Grp Volume(v), veh/h	120	158	155	147	198	176	268	1705	228	198	817	428
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1781
Q Serve(g_s), s	7.0	5.2	11.6	8.6	6.2	13.0	9.1	28.8	9.7	6.7	14.2	14.2
Cycle Q Clear(g_c), s	7.0	5.2	11.6	8.6	6.2	13.0	9.1	28.8	9.7	6.7	14.2	14.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	272	431	192	292	465	207	330	2662	826	256	1702	890
V/C Ratio(X)	0.44	0.37	0.81	0.50	0.43	0.85	0.81	0.64	0.28	0.77	0.48	0.48
Avail Cap(c_a), veh/h	274	533	238	292	563	251	432	2662	826	346	1702	890
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	44.1	53.1	56.2	41.5	48.0	51.0	53.2	20.6	16.1	53.1	12.4	12.4
Incr Delay (d2), s/veh	1.1	0.5	15.0	1.4	0.6	20.0	8.7	1.2	0.8	6.8	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	2.4	5.8	3.9	2.8	6.3	4.4	11.5	3.7	3.1	4.7	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	53.6	71.2	42.9	48.6	70.9	61.9	21.8	16.9	59.9	13.3	14.1
LnGrp LOS	D	D	E	D	D	E	E	C	B	E	B	B
Approach Vol, veh/h	433			521			2201			1443		
Approach Delay, s/veh	57.6			54.5			26.2			20.0		
Approach LOS	E			D			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.9	68.6	16.0	20.6	17.5	66.0	14.8	21.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	56.0	10.0	18.0	15.0	53.0	9.0	19.0				
Max Q Clear Time (g_c+l1), s	8.7	30.8	10.6	13.6	11.1	16.2	9.0	15.0				
Green Ext Time (p_c), s	0.2	15.8	0.0	0.6	0.3	11.1	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	30.4											
HCM 6th LOS	C											

Timings
13: Broadway & County Line

2023 Adjusted Existing PM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	124	276	296	271	351	284	160	1378	305	222	1759
Future Volume (vph)	124	276	296	271	351	284	160	1378	305	222	1759
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	24.0	22.0	32.0	32.0	14.0	55.0	55.0	19.0	60.0
Total Split (%)	11.7%	20.0%	20.0%	18.3%	26.7%	26.7%	11.7%	45.8%	45.8%	15.8%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line



HCM 6th Signalized Intersection Summary

13: Broadway & County Line

2023 Adjusted Existing PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	276	296	271	351	284	160	1378	305	222	1759	105
Future Volume (veh/h)	124	276	296	271	351	284	160	1378	305	222	1759	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	131	291	312	285	369	299	168	1451	321	234	1852	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	533	238	355	770	343	222	2210	686	290	2228	133
Arrive On Green	0.02	0.05	0.05	0.13	0.22	0.22	0.06	0.43	0.43	0.17	0.90	0.90
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4927	295
Grp Volume(v), veh/h	131	291	312	285	369	299	168	1451	321	234	1278	685
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1817
Q Serve(g_s), s	7.4	9.6	18.0	16.0	10.9	21.9	5.7	27.0	17.3	7.8	17.3	17.5
Cycle Q Clear(g_c), s	7.4	9.6	18.0	16.0	10.9	21.9	5.7	27.0	17.3	7.8	17.3	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	276	533	238	355	770	343	222	2210	686	290	1540	822
V/C Ratio(X)	0.48	0.55	1.31	0.80	0.48	0.87	0.76	0.66	0.47	0.81	0.83	0.83
Avail Cap(c_a), veh/h	276	533	238	355	770	343	230	2210	686	374	1540	822
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	41.7	53.0	57.0	35.9	41.1	45.4	55.2	27.0	24.2	49.0	4.0	4.0
Incr Delay (d2), s/veh	1.2	1.1	166.3	12.6	0.5	20.7	12.9	1.5	2.3	7.4	4.0	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.6	18.7	8.2	4.8	10.5	2.9	11.1	6.9	3.4	2.7	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.9	54.2	223.4	48.4	41.5	66.1	68.1	28.5	26.5	56.4	8.0	11.3
LnGrp LOS	D	D	F	D	D	E	E	C	C	E	A	B
Approach Vol, veh/h	734			953			1940			2197		
Approach Delay, s/veh	124.1			51.3			31.6			14.2		
Approach LOS	F			D			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	57.9	22.0	24.0	13.7	60.3	14.0	32.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	13.0	49.0	16.0	18.0	8.0	54.0	8.0	26.0				
Max Q Clear Time (g_c+l1), s	9.8	29.0	18.0	20.0	7.7	19.5	9.4	23.9				
Green Ext Time (p_c), s	0.2	12.0	0.0	0.0	0.0	20.4	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay	39.9											
HCM 6th LOS	D											

Timings
13: Broadway & County Line

2028 Background AM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	131	172	169	161	216	192	293	1916	249	216	1323
Future Volume (vph)	131	172	169	161	216	192	293	1916	249	216	1323
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	23.0	65.0	65.0	17.0	59.0
Total Split (%)	11.7%	20.0%	20.0%	11.7%	20.0%	20.0%	19.2%	54.2%	54.2%	14.2%	49.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

 Ø1	 Ø2 (R)	 Ø3	 Ø4
17 s	65 s	14 s	24 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
23 s	59 s	14 s	24 s

HCM 6th Signalized Intersection Summary

13: Broadway & County Line

2028 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	172	169	161	216	192	293	1916	249	216	1323	130
Future Volume (veh/h)	131	172	169	161	216	192	293	1916	249	216	1323	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	181	178	169	227	202	308	2017	262	227	1393	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	511	228	275	511	228	372	2592	805	283	2278	224
Arrive On Green	0.02	0.05	0.05	0.07	0.14	0.14	0.11	0.51	0.51	0.08	0.48	0.48
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4726	465
Grp Volume(v), veh/h	138	181	178	169	227	202	308	2017	262	227	1003	527
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1787
Q Serve(g_s), s	7.9	5.9	13.3	8.0	7.0	15.0	10.5	38.6	11.7	7.7	26.0	26.0
Cycle Q Clear(g_c), s	7.9	5.9	13.3	8.0	7.0	15.0	10.5	38.6	11.7	7.7	26.0	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	260	511	228	275	511	228	372	2592	805	283	1641	861
V/C Ratio(X)	0.53	0.35	0.78	0.61	0.44	0.89	0.83	0.78	0.33	0.80	0.61	0.61
Avail Cap(c_a), veh/h	260	533	238	275	533	238	490	2592	805	317	1641	861
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	42.7	51.8	55.3	42.7	47.0	50.4	52.5	24.0	17.4	54.1	22.8	22.8
Incr Delay (d2), s/veh	2.0	0.4	14.7	4.0	0.6	29.9	8.8	2.4	1.1	10.8	1.5	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.8	6.6	1.1	3.2	7.8	4.9	15.1	4.5	3.7	10.2	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	52.2	70.0	46.7	47.6	80.3	61.2	26.4	18.5	64.9	24.3	25.6
LnGrp LOS	D	D	E	D	D	F	E	C	B	E	C	C
Approach Vol, veh/h	497				598				2587			
Approach Delay, s/veh	56.5				58.4				29.8			
Approach LOS	E				E				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	66.9	14.0	23.2	18.9	63.8	14.0	23.2				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	59.0	8.0	18.0	17.0	53.0	8.0	18.0				
Max Q Clear Time (g_c+l1), s	9.7	40.6	10.0	15.3	12.5	28.0	9.9	17.0				
Green Ext Time (p_c), s	0.1	14.0	0.0	0.5	0.4	11.6	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	35.4											
HCM 6th LOS	D											

Timings
13: Broadway & County Line

2028 Background PM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	144	320	342	314	407	329	179	1610	342	249	2083
Future Volume (vph)	144	320	342	314	407	329	179	1610	342	249	2083
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	13.0	24.0	24.0	22.0	33.0	33.0	13.0	54.0	54.0	20.0	61.0
Total Split (%)	10.8%	20.0%	20.0%	18.3%	27.5%	27.5%	10.8%	45.0%	45.0%	16.7%	50.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line



HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2028 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	320	342	314	407	329	179	1610	342	249	2083	118
Future Volume (veh/h)	144	320	342	314	407	329	179	1610	342	249	2083	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	337	360	331	428	346	188	1695	360	262	2193	124
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	533	238	340	800	357	202	2169	673	318	2267	127
Arrive On Green	0.02	0.05	0.05	0.13	0.22	0.22	0.06	0.42	0.42	0.18	0.92	0.92
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4946	278
Grp Volume(v), veh/h	152	337	360	331	428	346	188	1695	360	262	1505	812
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1820
Q Serve(g_s), s	7.0	11.2	18.0	16.0	12.7	26.0	6.5	34.3	20.3	8.8	38.1	41.5
Cycle Q Clear(g_c), s	7.0	11.2	18.0	16.0	12.7	26.0	6.5	34.3	20.3	8.8	38.1	41.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	247	533	238	340	800	357	202	2169	673	318	1560	834
V/C Ratio(X)	0.62	0.63	1.51	0.97	0.54	0.97	0.93	0.78	0.53	0.82	0.96	0.97
Avail Cap(c_a), veh/h	247	533	238	340	800	357	202	2169	673	403	1560	834
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.59	0.59
Uniform Delay (d), s/veh	43.9	53.8	57.0	39.5	41.0	46.1	56.3	29.7	25.7	48.0	4.3	4.4
Incr Delay (d2), s/veh	4.3	2.3	250.7	41.5	0.7	39.6	44.7	2.9	3.0	6.6	11.0	18.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.5	24.2	6.1	5.7	14.1	4.1	14.4	8.1	3.7	4.3	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.2	56.1	307.7	80.9	41.7	85.7	100.9	32.6	28.7	54.6	15.3	22.8
LnGrp LOS	D	E	F	F	D	F	F	C	C	D	B	C
Approach Vol, veh/h	849			1105			2243			2579		
Approach Delay, s/veh	161.4			67.2			37.7			21.6		
Approach LOS	F			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	57.0	22.0	24.0	13.0	61.0	13.0	33.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	14.0	48.0	16.0	18.0	7.0	55.0	7.0	27.0				
Max Q Clear Time (g_c+I1), s	10.8	36.3	18.0	20.0	8.5	43.5	9.0	28.0				
Green Ext Time (p_c), s	0.3	9.1	0.0	0.0	0.0	10.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	51.9											
HCM 6th LOS	D											

Timings
13: Broadway & County Line

2028 Total AM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	131	203	212	161	249	192	336	1974	249	216	1383
Future Volume (vph)	131	203	212	161	249	192	336	1974	249	216	1383
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	16.0	24.0	24.0	16.0	24.0	24.0	25.0	63.0	63.0	17.0	55.0
Total Split (%)	13.3%	20.0%	20.0%	13.3%	20.0%	20.0%	20.8%	52.5%	52.5%	14.2%	45.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

			
Ø1	Ø2 (R)	Ø3	Ø4
17 s	63 s	16 s	24 s
			
Ø5	Ø6 (R)	Ø7	Ø8
25 s	55 s	16 s	24 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2028 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	203	212	161	249	192	336	1974	249	216	1383	130
Future Volume (veh/h)	131	203	212	161	249	192	336	1974	249	216	1383	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	214	223	169	262	202	354	2078	262	227	1456	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	533	238	296	543	242	420	2475	768	283	2113	199
Arrive On Green	0.03	0.05	0.05	0.08	0.15	0.15	0.12	0.48	0.48	0.08	0.45	0.45
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4747	447
Grp Volume(v), veh/h	138	214	223	169	262	202	354	2078	262	227	1044	549
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1790
Q Serve(g_s), s	7.8	7.0	16.8	9.6	8.1	14.9	12.0	42.4	12.2	7.7	29.5	29.5
Cycle Q Clear(g_c), s	7.8	7.0	16.8	9.6	8.1	14.9	12.0	42.4	12.2	7.7	29.5	29.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	283	533	238	296	543	242	420	2475	768	283	1515	797
V/C Ratio(X)	0.49	0.40	0.94	0.57	0.48	0.83	0.84	0.84	0.34	0.80	0.69	0.69
Avail Cap(c_a), veh/h	288	533	238	296	543	242	547	2475	768	317	1515	797
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	41.1	51.8	56.5	39.2	46.5	49.4	51.6	26.9	19.1	54.1	26.7	26.7
Incr Delay (d2), s/veh	1.3	0.5	40.7	2.6	0.7	21.6	9.0	3.6	1.2	10.5	2.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.3	9.9	4.4	3.6	7.3	5.6	17.0	4.7	3.7	11.9	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	52.3	97.2	41.8	47.2	71.0	60.6	30.5	20.3	64.6	28.8	30.7
LnGrp LOS	D	D	F	D	D	E	E	C	C	E	C	C
Approach Vol, veh/h	575			633			2694			1820		
Approach Delay, s/veh	67.3			53.3			33.5			33.8		
Approach LOS	E			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	64.2	16.0	24.0	20.6	59.4	15.7	24.3				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	57.0	10.0	18.0	19.0	49.0	10.0	18.0				
Max Q Clear Time (g_c+l1), s	9.7	44.4	11.6	18.8	14.0	31.5	9.8	16.9				
Green Ext Time (p_c), s	0.1	10.4	0.0	0.0	0.6	9.9	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	39.2											
HCM 6th LOS	D											

Timings
13: Broadway & County Line

2028 Total PM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	144	358	394	314	449	329	236	1688	342	249	2154
Future Volume (vph)	144	358	394	314	449	329	236	1688	342	249	2154
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	15.0	25.0	25.0	20.0	30.0	30.0	14.0	57.0	57.0	18.0	61.0
Total Split (%)	12.5%	20.8%	20.8%	16.7%	25.0%	25.0%	11.7%	47.5%	47.5%	15.0%	50.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line



HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2028 Total PM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	  		 	  	
Traffic Volume (veh/h)	144	358	394	314	449	329	236	1688	342	249	2154	118
Future Volume (veh/h)	144	358	394	314	449	329	236	1688	342	249	2154	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	377	415	331	473	346	248	1777	360	262	2267	124
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	563	251	305	711	317	230	2217	688	314	2272	123
Arrive On Green	0.02	0.05	0.05	0.12	0.20	0.20	0.07	0.43	0.43	0.18	0.92	0.92
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4957	269
Grp Volume(v), veh/h	152	377	415	331	473	346	248	1777	360	262	1552	839
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1822
Q Serve(g_s), s	8.5	12.5	19.0	14.0	14.7	24.0	8.0	36.2	20.0	8.8	51.6	55.0
Cycle Q Clear(g_c), s	8.5	12.5	19.0	14.0	14.7	24.0	8.0	36.2	20.0	8.8	51.6	55.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	245	563	251	305	711	317	230	2217	688	314	1560	835
V/C Ratio(X)	0.62	0.67	1.65	1.09	0.67	1.09	1.08	0.80	0.52	0.84	0.99	1.01
Avail Cap(c_a), veh/h	245	563	251	305	711	317	230	2217	688	346	1560	835
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	0.46	0.46	0.46
Uniform Delay (d), s/veh	41.2	53.8	56.9	41.2	44.3	48.0	56.0	29.5	24.8	48.2	4.9	5.0
Incr Delay (d2), s/veh	4.2	2.7	309.5	76.3	2.4	77.3	81.1	3.2	2.8	7.5	14.2	22.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	6.2	29.7	8.8	6.7	16.2	6.1	15.1	8.0	3.8	5.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	56.5	366.3	117.5	46.7	125.3	137.1	32.6	27.7	55.8	19.1	27.4
LnGrp LOS	D	E	F	F	D	F	F	C	C	E	B	F
Approach Vol, veh/h		944			1150			2385			2653	
Approach Delay, s/veh		190.9			90.7			42.7			25.3	
Approach LOS		F			F			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.9	58.1	20.0	25.0	14.0	61.0	15.0	30.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	51.0	14.0	19.0	8.0	55.0	9.0	24.0				
Max Q Clear Time (g_c+I1), s	10.8	38.2	16.0	21.0	10.0	57.0	10.5	26.0				
Green Ext Time (p_c), s	0.1	10.1	0.0	0.0	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			63.6									
HCM 6th LOS			E									

Timings
13: Broadway & County Line

2028 Total AM - Improved

02/06/2024

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	131	203	212	161	249	192	336	1974	249	216	1383
Future Volume (vph)	131	203	212	161	249	192	336	1974	249	216	1383
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	1	5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	5	3	8	1	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	11.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	25.0	15.0	25.0	17.0	25.0	64.0	64.0	17.0	56.0
Total Split (%)	11.7%	20.0%	20.8%	12.5%	20.8%	14.2%	20.8%	53.3%	53.3%	14.2%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line



HCM 6th Signalized Intersection Summary

13: Broadway & County Line

2028 Total AM - Improved

02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	  		 	  	
Traffic Volume (veh/h)	131	203	212	161	249	192	336	1974	249	216	1383	130
Future Volume (veh/h)	131	203	212	161	249	192	336	1974	249	216	1383	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	214	223	169	262	202	354	2078	262	227	1456	137
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	499	415	271	528	366	420	2565	796	284	2198	207
Arrive On Green	0.02	0.05	0.05	0.08	0.15	0.15	0.12	0.50	0.50	0.06	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4747	447
Grp Volume(v), veh/h	138	214	223	169	262	202	354	2078	262	227	1044	549
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1790
Q Serve(g_s), s	7.9	7.0	14.5	9.0	8.1	13.5	12.0	41.0	11.8	7.8	31.9	32.0
Cycle Q Clear(g_c), s	7.9	7.0	14.5	9.0	8.1	13.5	12.0	41.0	11.8	7.8	31.9	32.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	254	499	415	271	528	366	420	2565	796	284	1576	829
V/C Ratio(X)	0.54	0.43	0.54	0.62	0.50	0.55	0.84	0.81	0.33	0.80	0.66	0.66
Avail Cap(c_a), veh/h	254	533	431	271	563	381	547	2565	796	317	1576	829
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	43.1	52.5	42.2	41.7	46.9	40.7	51.6	25.1	17.8	55.7	33.2	33.2
Incr Delay (d2), s/veh	2.3	0.6	1.2	4.4	0.7	1.6	9.0	2.9	1.1	10.1	1.8	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	3.3	6.3	4.7	3.7	5.4	5.6	16.2	4.5	3.8	14.0	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	53.1	43.4	46.0	47.7	42.2	60.6	28.0	18.9	65.8	35.0	36.6
LnGrp LOS	D	D	D	D	D	D	E	C	B	E	D	D
Approach Vol, veh/h		575			633			2694			1820	
Approach Delay, s/veh		47.5			45.5			31.4			39.4	
Approach LOS		D			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.9	66.3	15.0	22.8	20.6	61.6	14.0	23.8				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	58.0	9.0	18.0	19.0	50.0	8.0	19.0				
Max Q Clear Time (g_c+l1), s	9.8	43.0	11.0	16.5	14.0	34.0	9.9	15.5				
Green Ext Time (p_c), s	0.1	12.1	0.0	0.3	0.6	9.4	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			37.1									
HCM 6th LOS			D									

Timings
13: Broadway & County Line

2028 Total PM - Improved

02/06/2024

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	144	358	394	314	449	329	236	1688	342	249	2154
Future Volume (vph)	144	358	394	314	449	329	236	1688	342	249	2154
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	1	5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	5	3	8	1	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	11.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	17.0	20.0	30.0	19.0	17.0	57.0	57.0	19.0	59.0
Total Split (%)	11.7%	20.0%	14.2%	16.7%	25.0%	15.8%	14.2%	47.5%	47.5%	15.8%	49.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

				
Ø1	Ø2 (R)		Ø3	Ø4
19 s	57 s		20 s	24 s
				
Ø5	Ø6 (R)		Ø7	Ø8
17 s	59 s		14 s	30 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2028 Total PM - Improved
02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	358	394	314	449	329	236	1688	342	249	2154	118
Future Volume (veh/h)	144	358	394	314	449	329	236	1688	342	249	2154	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	377	415	331	473	346	248	1777	360	262	2267	124
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	533	377	299	711	462	303	2257	701	316	2209	120
Arrive On Green	0.02	0.05	0.05	0.12	0.20	0.20	0.09	0.44	0.44	0.18	0.89	0.89
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4957	269
Grp Volume(v), veh/h	152	377	415	331	473	346	248	1777	360	262	1552	839
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1822
Q Serve(g_s), s	8.0	12.5	18.0	14.0	14.7	23.7	8.5	35.7	19.7	8.8	53.5	53.5
Cycle Q Clear(g_c), s	8.0	12.5	18.0	14.0	14.7	23.7	8.5	35.7	19.7	8.8	53.5	53.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	230	533	377	299	711	462	303	2257	701	316	1517	812
V/C Ratio(X)	0.66	0.71	1.10	1.11	0.67	0.75	0.82	0.79	0.51	0.83	1.02	1.03
Avail Cap(c_a), veh/h	230	533	377	299	711	462	317	2257	701	374	1517	812
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	0.44	0.44	0.44
Uniform Delay (d), s/veh	43.3	54.4	50.5	40.9	44.3	38.5	53.8	28.7	24.2	48.1	6.5	6.5
Incr Delay (d2), s/veh	6.1	3.8	74.3	83.9	2.4	6.7	15.0	2.9	2.7	6.0	21.4	30.1
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	0.7	6.3	19.0	9.1	6.7	10.0	4.3	14.9	7.8	3.7	7.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	58.3	124.8	124.9	46.7	45.2	68.8	31.5	26.9	54.1	27.9	36.7
LnGrp LOS	D	E	F	F	D	D	E	C	C	D	F	F
Approach Vol, veh/h		944			1150			2385			2653	
Approach Delay, s/veh		86.1			68.7			34.7			33.3	
Approach LOS		F			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	59.0	20.0	24.0	16.5	59.5	14.0	30.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	13.0	51.0	14.0	18.0	11.0	53.0	8.0	24.0				
Max Q Clear Time (g_c+l1), s	10.8	37.7	16.0	20.0	10.5	55.5	10.0	25.7				
Green Ext Time (p_c), s	0.2	10.4	0.0	0.0	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			46.5									
HCM 6th LOS			D									

Timings
13: Broadway & County Line

2045 Background AM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	143	187	184	175	235	209	319	2081	271	235	1432
Future Volume (vph)	143	187	184	175	235	209	319	2081	271	235	1432
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	65.0	65.0	17.0	58.0
Total Split (%)	11.7%	20.0%	20.0%	11.7%	20.0%	20.0%	20.0%	54.2%	54.2%	14.2%	48.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

				
Ø1	Ø2 (R)		Ø3	Ø4
17 s	65 s		14 s	24 s
				
Ø5	Ø6 (R)		Ø7	Ø8
24 s	58 s		14 s	24 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Background AM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	187	184	175	235	209	319	2081	271	235	1432	142
Future Volume (veh/h)	143	187	184	175	235	209	319	2081	271	235	1432	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	151	197	194	184	247	220	336	2191	285	247	1507	149
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	533	238	274	533	238	401	2535	787	301	2207	218
Arrive On Green	0.02	0.05	0.05	0.07	0.15	0.15	0.12	0.50	0.50	0.12	0.62	0.62
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4724	467
Grp Volume(v), veh/h	151	197	194	184	247	220	336	2191	285	247	1086	570
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1786
Q Serve(g_s), s	8.0	6.4	14.5	8.0	7.6	16.4	11.4	45.4	13.2	8.4	25.2	25.2
Cycle Q Clear(g_c), s	8.0	6.4	14.5	8.0	7.6	16.4	11.4	45.4	13.2	8.4	25.2	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	259	533	238	274	533	238	401	2535	787	301	1590	835
V/C Ratio(X)	0.58	0.37	0.82	0.67	0.46	0.93	0.84	0.86	0.36	0.82	0.68	0.68
Avail Cap(c_a), veh/h	259	533	238	274	533	238	518	2535	787	317	1590	835
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	42.9	51.5	55.4	43.2	46.6	50.3	51.9	26.7	18.6	52.2	16.9	16.9
Incr Delay (d2), s/veh	3.3	0.4	19.0	6.2	0.6	38.6	9.2	4.2	1.3	12.4	1.9	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	7.5	1.8	3.4	9.0	5.5	18.8	5.1	4.1	8.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	52.0	74.4	49.4	47.2	88.9	61.1	30.9	19.8	64.5	18.8	20.5
LnGrp LOS	D	D	E	D	D	F	E	C	B	E	B	C
Approach Vol, veh/h	542			651			2812			1903		
Approach Delay, s/veh	58.4			61.9			33.4			25.2		
Approach LOS	E			E			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	65.6	14.0	24.0	19.9	62.1	14.0	24.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	59.0	8.0	18.0	18.0	52.0	8.0	18.0				
Max Q Clear Time (g_c+l1), s	10.4	47.4	10.0	16.5	13.4	27.2	10.0	18.4				
Green Ext Time (p_c), s	0.1	10.2	0.0	0.3	0.5	13.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	36.2											
HCM 6th LOS	D											

Timings
13: Broadway & County Line

2045 Background PM

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	156	348	373	341	443	358	195	1747	373	271	2257
Future Volume (vph)	156	348	373	341	443	358	195	1747	373	271	2257
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	24.0	21.0	31.0	31.0	13.0	56.0	56.0	19.0	62.0
Total Split (%)	11.7%	20.0%	20.0%	17.5%	25.8%	25.8%	10.8%	46.7%	46.7%	15.8%	51.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

				
Ø1	Ø2 (R)		Ø3	Ø4
19 s	56 s		21 s	24 s
				
Ø5	Ø6 (R)		Ø7	Ø8
13 s	62 s		14 s	31 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Background PM

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	348	373	341	443	358	195	1747	373	271	2257	128
Future Volume (veh/h)	156	348	373	341	443	358	195	1747	373	271	2257	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	366	393	359	466	377	205	1839	393	285	2376	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	533	238	317	740	330	202	2183	678	337	2308	130
Arrive On Green	0.02	0.05	0.05	0.13	0.21	0.21	0.06	0.43	0.43	0.19	0.93	0.93
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4946	278
Grp Volume(v), veh/h	164	366	393	359	466	377	205	1839	393	285	1628	883
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1820
Q Serve(g_s), s	8.0	12.2	18.0	15.0	14.3	25.0	7.0	38.7	22.6	9.5	56.0	56.0
Cycle Q Clear(g_c), s	8.0	12.2	18.0	15.0	14.3	25.0	7.0	38.7	22.6	9.5	56.0	56.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	237	533	238	317	740	330	202	2183	678	337	1589	849
V/C Ratio(X)	0.69	0.69	1.65	1.13	0.63	1.14	1.02	0.84	0.58	0.85	1.02	1.04
Avail Cap(c_a), veh/h	237	533	238	317	740	330	202	2183	678	374	1589	849
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.50	0.50
Uniform Delay (d), s/veh	44.1	54.3	57.0	40.4	43.3	47.5	56.5	30.7	26.1	47.4	4.0	4.0
Incr Delay (d2), s/veh	7.7	3.4	310.5	91.3	1.7	93.7	67.9	4.2	3.6	8.2	22.7	32.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.1	28.2	10.3	6.5	18.4	4.9	16.4	9.1	4.1	6.6	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	57.6	367.5	131.6	45.0	141.2	124.4	34.9	29.7	55.7	26.7	36.8
LnGrp LOS	D	E	F	F	D	F	F	C	C	E	F	F
Approach Vol, veh/h	923			1202			2437			2796		
Approach Delay, s/veh	188.6			101.0			41.6			32.9		
Approach LOS	F			F			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.7	57.3	21.0	24.0	13.0	62.0	14.0	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	13.0	50.0	15.0	18.0	7.0	56.0	8.0	25.0				
Max Q Clear Time (g_c+l1), s	11.5	40.7	17.0	20.0	9.0	58.0	10.0	27.0				
Green Ext Time (p_c), s	0.2	7.9	0.0	0.0	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	66.4											
HCM 6th LOS	E											

Timings
13: Broadway & County Line

2045 Total AM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	143	218	227	175	268	209	362	2139	271	235	1492
Future Volume (vph)	143	218	227	175	268	209	362	2139	271	235	1492
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	24.0	14.0	24.0	24.0	24.0	65.0	65.0	17.0	58.0
Total Split (%)	11.7%	20.0%	20.0%	11.7%	20.0%	20.0%	20.0%	54.2%	54.2%	14.2%	48.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

				
Ø1	Ø2 (R)		Ø3	Ø4
17 s	65 s		14 s	24 s
				
Ø5	Ø6 (R)		Ø7	Ø8
24 s	58 s		14 s	24 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Total AM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	218	227	175	268	209	362	2139	271	235	1492	142
Future Volume (veh/h)	143	218	227	175	268	209	362	2139	271	235	1492	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	151	229	239	184	282	220	381	2252	285	247	1571	149
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	533	238	260	533	238	443	2535	787	301	2159	205
Arrive On Green	0.02	0.05	0.05	0.07	0.15	0.15	0.13	0.50	0.50	0.12	0.61	0.61
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4744	449
Grp Volume(v), veh/h	151	229	239	184	282	220	381	2252	285	247	1127	593
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1789
Q Serve(g_s), s	8.0	7.5	18.0	8.0	8.8	16.4	13.0	47.7	13.2	8.4	28.0	28.1
Cycle Q Clear(g_c), s	8.0	7.5	18.0	8.0	8.8	16.4	13.0	47.7	13.2	8.4	28.0	28.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	248	533	238	260	533	238	443	2535	787	301	1549	814
V/C Ratio(X)	0.61	0.43	1.01	0.71	0.53	0.93	0.86	0.89	0.36	0.82	0.73	0.73
Avail Cap(c_a), veh/h	248	533	238	260	533	238	518	2535	787	317	1549	814
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	43.1	52.0	57.0	43.6	47.1	50.3	51.2	27.2	18.6	52.2	18.4	18.5
Incr Delay (d2), s/veh	4.1	0.5	58.5	8.6	1.0	38.6	12.1	5.1	1.3	12.1	2.3	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.5	11.6	2.0	4.0	9.0	6.4	19.9	5.1	4.0	9.9	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	52.6	115.6	52.2	48.1	88.9	63.4	32.4	19.8	64.3	20.8	22.9
LnGrp LOS	D	D	F	D	D	F	E	C	B	E	C	C
Approach Vol, veh/h	619			686			2918			1967		
Approach Delay, s/veh	75.6			62.3			35.2			26.9		
Approach LOS	E			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	65.6	14.0	24.0	21.4	60.6	14.0	24.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	59.0	8.0	18.0	18.0	52.0	8.0	18.0				
Max Q Clear Time (g_c+l1), s	10.4	49.7	10.0	20.0	15.0	30.1	10.0	18.4				
Green Ext Time (p_c), s	0.1	8.4	0.0	0.0	0.4	13.2	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	39.6											
HCM 6th LOS	D											

Timings
13: Broadway & County Line

2045 Total PM
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	156	386	425	341	485	358	252	1825	373	271	2328
Future Volume (vph)	156	386	425	341	485	358	252	1825	373	271	2328
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8		5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	4	3	8	8	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	24.0	20.0	30.0	30.0	14.0	58.0	58.0	18.0	62.0
Total Split (%)	11.7%	20.0%	20.0%	16.7%	25.0%	25.0%	11.7%	48.3%	48.3%	15.0%	51.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

			
Ø1	Ø2 (R)	Ø3	Ø4
18 s	58 s	20 s	24 s
			
Ø5	Ø6 (R)	Ø7	Ø8
14 s	62 s	14 s	30 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Total PM
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 		 	  		 	  	
Traffic Volume (veh/h)	156	386	425	341	485	358	252	1825	373	271	2328	128
Future Volume (veh/h)	156	386	425	341	485	358	252	1825	373	271	2328	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	406	447	359	511	377	265	1921	393	285	2451	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	533	238	292	711	317	230	2229	692	334	2313	126
Arrive On Green	0.02	0.05	0.05	0.12	0.20	0.20	0.07	0.44	0.44	0.19	0.93	0.93
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4956	270
Grp Volume(v), veh/h	164	406	447	359	511	377	265	1921	393	285	1675	911
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1822
Q Serve(g_s), s	8.0	13.5	18.0	14.0	16.1	24.0	8.0	40.8	22.3	9.6	56.0	56.0
Cycle Q Clear(g_c), s	8.0	13.5	18.0	14.0	16.1	24.0	8.0	40.8	22.3	9.6	56.0	56.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	220	533	238	292	711	317	230	2229	692	334	1589	850
V/C Ratio(X)	0.75	0.76	1.88	1.23	0.72	1.19	1.15	0.86	0.57	0.85	1.05	1.07
Avail Cap(c_a), veh/h	220	533	238	292	711	317	230	2229	692	346	1589	850
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.35	0.35	0.35
Uniform Delay (d), s/veh	44.9	54.9	57.0	40.6	44.8	48.0	56.0	30.5	25.3	47.6	4.0	4.0
Incr Delay (d2), s/veh	11.3	5.5	409.5	129.8	3.5	112.2	105.8	4.7	3.4	7.1	30.7	40.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.9	34.7	12.5	7.4	19.3	6.9	17.3	8.9	4.1	8.3	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	60.4	466.5	170.4	48.4	160.2	161.8	35.2	28.7	54.7	34.7	44.8
LnGrp LOS	E	E	F	F	D	F	F	D	C	D	F	F
Approach Vol, veh/h		1017			1247			2579			2871	
Approach Delay, s/veh		238.2			117.3			47.2			39.9	
Approach LOS		F			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	58.4	20.0	24.0	14.0	62.0	14.0	30.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	52.0	14.0	18.0	8.0	56.0	8.0	24.0				
Max Q Clear Time (g_c+l1), s	11.6	42.8	16.0	20.0	10.0	58.0	10.0	26.0				
Green Ext Time (p_c), s	0.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			81.0									
HCM 6th LOS			F									

Timings
13: Broadway & County Line

2045 Total AM - Improved
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	143	218	227	175	268	209	362	2139	271	235	1492
Future Volume (vph)	143	218	227	175	268	209	362	2139	271	235	1492
Turn Type	pm+pt	NA	Free	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	1	5	2		1	6
Permitted Phases	4		Free	8		8			2		
Detector Phase	7	4		3	8	1	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0		14.0	24.0	17.0	23.0	65.0	65.0	17.0	59.0
Total Split (%)	11.7%	20.0%		11.7%	20.0%	14.2%	19.2%	54.2%	54.2%	14.2%	49.2%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

 Ø1	 Ø2 (R)	 Ø3	 Ø4
17 s	65 s	14 s	24 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
23 s	59 s	14 s	24 s

HCM 6th Signalized Intersection Summary

13: Broadway & County Line

2045 Total AM - Improved

11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	218	227	175	268	209	362	2139	271	235	1492	142
Future Volume (veh/h)	143	218	227	175	268	209	362	2139	271	235	1492	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	151	229	0	184	282	220	381	2252	285	247	1571	149
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	241	510		272	510	365	440	2568	797	301	2195	208
Arrive On Green	0.02	0.05	0.00	0.07	0.14	0.14	0.13	0.50	0.50	0.12	0.62	0.62
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4744	449
Grp Volume(v), veh/h	151	229	0	184	282	220	381	2252	285	247	1127	593
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1789
Q Serve(g_s), s	8.0	7.5	0.0	8.0	8.9	14.9	13.0	47.1	13.1	8.4	27.3	27.4
Cycle Q Clear(g_c), s	8.0	7.5	0.0	8.0	8.9	14.9	13.0	47.1	13.1	8.4	27.3	27.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	241	510		272	510	365	440	2568	797	301	1575	828
V/C Ratio(X)	0.63	0.45		0.68	0.55	0.60	0.87	0.88	0.36	0.82	0.72	0.72
Avail Cap(c_a), veh/h	241	533		272	533	376	490	2568	797	317	1575	828
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.96	0.96	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	43.9	52.6	0.0	44.1	47.8	41.3	51.4	26.5	18.1	52.2	17.7	17.7
Incr Delay (d2), s/veh	4.8	0.6	0.0	6.6	1.1	2.6	14.0	4.6	1.3	12.2	2.2	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.6	0.0	1.9	4.0	6.1	6.5	19.5	5.0	4.0	9.5	10.5
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	48.8	53.1	0.0	50.7	49.0	43.9	65.3	31.1	19.3	64.4	19.9	21.8
LnGrp LOS	D	D	A	D	D	D	E	C	B	E	B	C
Approach Vol, veh/h	619			686			2918			1967		
Approach Delay, s/veh	31.6			47.8			34.4			26.0		
Approach LOS	C			D			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	66.4	14.0	23.2	21.3	61.5	14.0	23.2				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	59.0	8.0	18.0	17.0	53.0	8.0	18.0				
Max Q Clear Time (g_c+l1), s	10.4	49.1	10.0	9.5	15.0	29.4	10.0	16.9				
Green Ext Time (p_c), s	0.1	9.0	0.0	0.8	0.3	13.9	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay	33.0											
HCM 6th LOS	C											
Notes												

Timings
13: Broadway & County Line

2045 Total AM - Improved

02/06/2024

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	143	218	227	175	268	209	362	2139	271	235	1492
Future Volume (vph)	143	218	227	175	268	209	362	2139	271	235	1492
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	1	5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	5	3	8	1	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	11.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	25.0	15.0	25.0	17.0	25.0	64.0	64.0	17.0	56.0
Total Split (%)	11.7%	20.0%	20.8%	12.5%	20.8%	14.2%	20.8%	53.3%	53.3%	14.2%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

 Ø1	 Ø2 (R)	 Ø3	 Ø4
17 s	64 s	15 s	24 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
25 s	56 s	14 s	25 s

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Total AM - Improved
02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	218	227	175	268	209	362	2139	271	235	1492	142
Future Volume (veh/h)	143	218	227	175	268	209	362	2139	271	235	1492	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	151	229	239	184	282	220	381	2252	285	247	1571	149
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	520	436	271	549	384	446	2508	778	303	2133	202
Arrive On Green	0.02	0.05	0.05	0.08	0.15	0.15	0.13	0.49	0.49	0.06	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4744	449
Grp Volume(v), veh/h	151	229	239	184	282	220	381	2252	285	247	1127	593
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1789
Q Serve(g_s), s	8.0	7.5	15.4	9.0	8.7	14.7	12.9	48.2	13.4	8.5	35.7	35.7
Cycle Q Clear(g_c), s	8.0	7.5	15.4	9.0	8.7	14.7	12.9	48.2	13.4	8.5	35.7	35.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	252	520	436	271	549	384	446	2508	778	303	1531	805
V/C Ratio(X)	0.60	0.44	0.55	0.68	0.51	0.57	0.85	0.90	0.37	0.82	0.74	0.74
Avail Cap(c_a), veh/h	252	533	443	271	563	390	547	2508	778	317	1531	805
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	43.4	52.3	41.3	42.2	46.6	40.0	51.1	27.8	18.9	55.5	35.5	35.6
Incr Delay (d2), s/veh	3.8	0.6	1.3	6.7	0.8	2.0	10.6	5.6	1.3	11.7	2.5	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.6	6.7	1.3	3.9	5.9	6.3	20.2	5.2	4.3	16.0	17.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	52.9	42.7	48.9	47.3	42.0	61.7	33.4	20.3	67.2	38.0	40.3
LnGrp LOS	D	D	D	D	D	D	E	C	C	E	D	D
Approach Vol, veh/h		619			686			2918			1967	
Approach Delay, s/veh		47.6			46.0			35.8			42.4	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.5	64.9	15.0	23.5	21.5	60.0	14.0	24.5				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	58.0	9.0	18.0	19.0	50.0	8.0	19.0				
Max Q Clear Time (g_c+I1), s	10.5	50.2	11.0	17.4	14.9	37.7	10.0	16.7				
Green Ext Time (p_c), s	0.0	7.2	0.0	0.2	0.6	8.7	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			40.2									
HCM 6th LOS			D									

Timings
13: Broadway & County Line

2045 Total PM - Improved
11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	156	386	425	341	485	358	252	1825	373	271	2328
Future Volume (vph)	156	386	425	341	485	358	252	1825	373	271	2328
Turn Type	pm+pt	NA	Free	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	1	5	2		1	6
Permitted Phases	4		Free	8		8			2		
Detector Phase	7	4		3	8	1	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0		11.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0		20.0	30.0	18.0	13.0	58.0	58.0	18.0	63.0
Total Split (%)	11.7%	20.0%		16.7%	25.0%	15.0%	10.8%	48.3%	48.3%	15.0%	52.5%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

				
Ø1	Ø2 (R)	Ø3	Ø4	
18 s	58 s	20 s	24 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
13 s	63 s	14 s	30 s	

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Total PM - Improved
11/10/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	386	425	341	485	358	252	1825	373	271	2328	128
Future Volume (veh/h)	156	386	425	341	485	358	252	1825	373	271	2328	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	406	0	359	511	377	265	1921	393	285	2451	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	533		304	711	470	202	2229	692	334	2354	128
Arrive On Green	0.02	0.05	0.00	0.12	0.20	0.20	0.06	0.44	0.44	0.19	0.95	0.95
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4956	270
Grp Volume(v), veh/h	164	406	0	359	511	377	265	1921	393	285	1675	911
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1822
Q Serve(g_s), s	8.0	13.5	0.0	14.0	16.1	24.0	7.0	40.8	22.3	9.6	57.0	57.0
Cycle Q Clear(g_c), s	8.0	13.5	0.0	14.0	16.1	24.0	7.0	40.8	22.3	9.6	57.0	57.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	220	533		304	711	470	202	2229	692	334	1617	865
V/C Ratio(X)	0.75	0.76		1.18	0.72	0.80	1.31	0.86	0.57	0.85	1.04	1.05
Avail Cap(c_a), veh/h	220	533		304	711	470	202	2229	692	346	1617	865
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.85	0.85	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.34	0.34	0.34
Uniform Delay (d), s/veh	44.9	54.9	0.0	41.3	44.8	38.9	56.5	30.5	25.3	47.6	3.0	3.0
Incr Delay (d2), s/veh	11.2	5.5	0.0	109.7	3.5	9.6	172.2	4.7	3.4	7.0	23.7	33.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.9	0.0	11.6	7.4	11.4	7.9	17.3	8.9	4.1	6.5	9.3
Unsig. Movement Delay, s/veh	0.00											
LnGrp Delay(d),s/veh	56.1	60.4	0.0	151.0	48.4	48.6	228.7	35.2	28.7	54.5	26.7	36.6
LnGrp LOS	E	E	A	F	D	D	F	D	C	D	F	F
Approach Vol, veh/h	1017			1247			2579			2871		
Approach Delay, s/veh	33.2			78.0			54.1			32.6		
Approach LOS	C			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	58.4	20.0	24.0	13.0	63.0	14.0	30.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	52.0	14.0	18.0	7.0	57.0	8.0	24.0				
Max Q Clear Time (g_c+l1), s	11.6	42.8	16.0	15.5	9.0	59.0	10.0	26.0				
Green Ext Time (p_c), s	0.0	7.9	0.0	0.6	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	47.2											
HCM 6th LOS	D											
Notes												

Timings
13: Broadway & County Line

2045 Total PM - Improved

02/06/2024

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	156	386	425	341	485	358	252	1825	373	271	2328
Future Volume (vph)	156	386	425	341	485	358	252	1825	373	271	2328
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	1	5	2		1	6
Permitted Phases	4		4	8		8			2		
Detector Phase	7	4	5	3	8	1	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	11.0	11.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	14.0	24.0	14.0	20.0	30.0	18.0	14.0	58.0	58.0	18.0	62.0
Total Split (%)	11.7%	20.0%	11.7%	16.7%	25.0%	15.0%	11.7%	48.3%	48.3%	15.0%	51.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 13: Broadway & County Line

				
Ø1	Ø2 (R)	Ø3	Ø4	
18 s	58 s	20 s	24 s	
				
Ø5	Ø6 (R)	Ø7	Ø8	
14 s	62 s	14 s	30 s	

HCM 6th Signalized Intersection Summary 13: Broadway & County Line

2045 Total PM - Improved
02/06/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	386	425	341	485	358	252	1825	373	271	2328	128
Future Volume (veh/h)	156	386	425	341	485	358	252	1825	373	271	2328	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	406	447	359	511	377	265	1921	393	285	2451	135
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	533	343	292	711	470	230	2229	692	334	2313	126
Arrive On Green	0.02	0.05	0.05	0.12	0.20	0.20	0.07	0.44	0.44	0.19	0.93	0.93
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	5106	1585	3456	4956	270
Grp Volume(v), veh/h	164	406	447	359	511	377	265	1921	393	285	1675	911
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1702	1585	1728	1702	1822
Q Serve(g_s), s	8.0	13.5	18.0	14.0	16.1	24.0	8.0	40.8	22.3	9.6	56.0	56.0
Cycle Q Clear(g_c), s	8.0	13.5	18.0	14.0	16.1	24.0	8.0	40.8	22.3	9.6	56.0	56.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	220	533	343	292	711	470	230	2229	692	334	1589	850
V/C Ratio(X)	0.75	0.76	1.30	1.23	0.72	0.80	1.15	0.86	0.57	0.85	1.05	1.07
Avail Cap(c_a), veh/h	220	533	343	292	711	470	230	2229	692	346	1589	850
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	0.34	0.34	0.34
Uniform Delay (d), s/veh	44.9	54.9	52.1	40.6	44.8	38.9	56.0	30.5	25.3	47.6	4.0	4.0
Incr Delay (d2), s/veh	11.6	5.6	153.3	129.8	3.5	9.6	105.8	4.7	3.4	7.0	30.6	40.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	6.9	25.1	12.5	7.4	11.4	6.9	17.3	8.9	4.1	8.3	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	60.6	205.4	170.4	48.4	48.6	161.8	35.2	28.7	54.5	34.6	44.6
LnGrp LOS	E	E	F	F	D	D	F	D	C	D	F	F
Approach Vol, veh/h		1017			1247			2579			2871	
Approach Delay, s/veh		123.6			83.6			47.2			39.7	
Approach LOS		F			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.6	58.4	20.0	24.0	14.0	62.0	14.0	30.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	12.0	52.0	14.0	18.0	8.0	56.0	8.0	24.0				
Max Q Clear Time (g_c+I1), s	11.6	42.8	16.0	20.0	10.0	58.0	10.0	26.0				
Green Ext Time (p_c), s	0.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			60.4									
HCM 6th LOS			E									

HCM 6th TWSC
14: Southpark Terrace & North Access

2028 Total AM
11/10/2023

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↖		↙	↖	↙
Traffic Vol, veh/h	51	0	98	2	0	2	114	136	17	23	157	66
Future Vol, veh/h	51	0	98	2	0	2	114	136	17	23	157	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	0	107	2	0	2	124	148	18	25	171	72
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	627	635	171	716	698	157	243	0	0	166	0	0
Stage 1	221	221	-	405	405	-	-	-	-	-	-	-
Stage 2	406	414	-	311	293	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	396	396	873	345	364	889	1323	-	-	1412	-	-
Stage 1	781	720	-	622	598	-	-	-	-	-	-	-
Stage 2	622	593	-	699	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	362	352	873	277	324	889	1323	-	-	1412	-	-
Mov Cap-2 Maneuver	437	422	-	361	393	-	-	-	-	-	-	-
Stage 1	708	707	-	564	542	-	-	-	-	-	-	-
Stage 2	562	537	-	603	658	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		12.1		3.4		0.7					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1323	-	-	651	513	1412	-	-				
HCM Lane V/C Ratio	0.094	-	-	0.249	0.008	0.018	-	-				
HCM Control Delay (s)	8	-	-	12.4	12.1	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	1	0	0.1	-	-				

HCM 6th TWSC
14: Southpark Terrace & North Access

2028 Total PM
11/10/2023

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖		↗	↖	↗
Traffic Vol, veh/h	44	0	141	16	0	22	145	183	2	2	213	56
Future Vol, veh/h	44	0	141	16	0	22	145	183	2	2	213	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	0	153	17	0	24	158	199	2	2	232	61
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	764	753	232	859	813	200	293	0	0	201	0	0
Stage 1	236	236	-	516	516	-	-	-	-	-	-	-
Stage 2	528	517	-	343	297	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	321	339	807	277	313	841	1269	-	-	1371	-	-
Stage 1	767	710	-	542	534	-	-	-	-	-	-	-
Stage 2	534	534	-	672	668	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	282	296	807	203	274	841	1269	-	-	1371	-	-
Mov Cap-2 Maneuver	365	380	-	285	347	-	-	-	-	-	-	-
Stage 1	671	709	-	474	467	-	-	-	-	-	-	-
Stage 2	454	467	-	544	667	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.4		13.6		3.6		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1269	-	-	627	462	1371	-	-				
HCM Lane V/C Ratio	0.124	-	-	0.321	0.089	0.002	-	-				
HCM Control Delay (s)	8.2	-	-	13.4	13.6	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	1.4	0.3	0	-	-				

HCM 6th TWSC
14: Southpark Terrace & North Access

2045 Total AM
11/10/2023

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	↗
Traffic Vol, veh/h	51	0	98	2	0	2	114	136	19	25	155	66
Future Vol, veh/h	51	0	98	2	0	2	114	136	19	25	155	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	0	107	2	0	2	124	148	21	27	168	72
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	630	639	168	719	701	159	240	0	0	169	0	0
Stage 1	222	222	-	407	407	-	-	-	-	-	-	-
Stage 2	408	417	-	312	294	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	394	394	876	344	363	886	1327	-	-	1409	-	-
Stage 1	780	720	-	621	597	-	-	-	-	-	-	-
Stage 2	620	591	-	699	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	360	351	876	277	323	886	1327	-	-	1409	-	-
Mov Cap-2 Maneuver	434	420	-	361	392	-	-	-	-	-	-	-
Stage 1	707	706	-	563	541	-	-	-	-	-	-	-
Stage 2	561	536	-	602	657	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.4		12.1		3.4		0.8					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1327	-	-	650	513	1409	-	-				
HCM Lane V/C Ratio	0.093	-	-	0.249	0.008	0.019	-	-				
HCM Control Delay (s)	8	-	-	12.4	12.1	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.3	-	-	1	0	0.1	-	-				

HCM 6th TWSC
14: Southpark Terrace & North Access

2045 Total PM
11/10/2023

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	0	141	18	0	23	145	182	2	2	213	56
Future Vol, veh/h	44	0	141	18	0	23	145	182	2	2	213	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	0	153	20	0	25	158	198	2	2	232	61
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	764	752	232	858	812	199	293	0	0	200	0	0
Stage 1	236	236	-	515	515	-	-	-	-	-	-	-
Stage 2	528	516	-	343	297	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	321	339	807	277	313	842	1269	-	-	1372	-	-
Stage 1	767	710	-	543	535	-	-	-	-	-	-	-
Stage 2	534	534	-	672	668	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	282	296	807	203	274	842	1269	-	-	1372	-	-
Mov Cap-2 Maneuver	365	380	-	285	347	-	-	-	-	-	-	-
Stage 1	671	709	-	475	468	-	-	-	-	-	-	-
Stage 2	454	467	-	544	667	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.4		13.8		3.6		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1269	-	-	627	453	1372	-	-				
HCM Lane V/C Ratio	0.124	-	-	0.321	0.098	0.002	-	-				
HCM Control Delay (s)	8.2	-	-	13.4	13.8	7.6	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	1.4	0.3	0	-	-				

HCM 6th TWSC
15: Southpark Terrace & Middle Access

2028 Total AM
11/10/2023

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	0	75	3	0	3	87	233	23	40	182	35
Future Vol, veh/h	31	0	75	3	0	3	87	233	23	40	182	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	0	82	3	0	3	95	253	25	43	198	38
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	741	752	198	800	778	266	236	0	0	278	0	0
Stage 1	284	284	-	456	456	-	-	-	-	-	-	-
Stage 2	457	468	-	344	322	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	332	339	843	303	328	773	1331	-	-	1285	-	-
Stage 1	723	676	-	584	568	-	-	-	-	-	-	-
Stage 2	583	561	-	671	651	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	305	304	843	252	295	773	1331	-	-	1285	-	-
Mov Cap-2 Maneuver	393	384	-	350	377	-	-	-	-	-	-	-
Stage 1	672	654	-	543	528	-	-	-	-	-	-	-
Stage 2	539	521	-	586	630	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12		12.6		2		1.2					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1331	-	-	632	482	1285	-	-				
HCM Lane V/C Ratio	0.071	-	-	0.182	0.014	0.034	-	-				
HCM Control Delay (s)	7.9	-	-	12	12.6	7.9	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile O(veh)	0.2	-	-	0.7	0	0.1	-	-				

HCM 6th TWSC
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Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖		↗	↖	↗
Traffic Vol, veh/h	29	0	122	22	0	38	122	263	3	3	334	33
Future Vol, veh/h	29	0	122	22	0	38	122	263	3	3	334	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	133	24	0	41	133	286	3	3	363	36
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	943	924	363	1008	959	288	399	0	0	289	0	0
Stage 1	369	369	-	554	554	-	-	-	-	-	-	-
Stage 2	574	555	-	454	405	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	243	269	682	219	257	751	1160	-	-	1273	-	-
Stage 1	651	621	-	517	514	-	-	-	-	-	-	-
Stage 2	504	513	-	586	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	209	238	682	161	227	751	1160	-	-	1273	-	-
Mov Cap-2 Maneuver	313	342	-	248	313	-	-	-	-	-	-	-
Stage 1	576	620	-	458	455	-	-	-	-	-	-	-
Stage 2	422	454	-	471	597	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	14.2		14.8		2.7		0.1					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1160	-	-	556	431	1273	-	-				
HCM Lane V/C Ratio	0.114	-	-	0.295	0.151	0.003	-	-				
HCM Control Delay (s)	8.5	-	-	14.2	14.8	7.8	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile O(veh)	0.4	-	-	1.2	0.5	0	-	-				

HCM 6th TWSC
15: Southpark Terrace & Middle Access

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Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	↕
Traffic Vol, veh/h	31	0	75	3	0	3	87	235	25	44	176	35
Future Vol, veh/h	31	0	75	3	0	3	87	235	25	44	176	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	0	82	3	0	3	95	255	27	48	191	38
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	747	759	191	806	784	269	229	0	0	282	0	0
Stage 1	287	287	-	459	459	-	-	-	-	-	-	-
Stage 2	460	472	-	347	325	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	329	336	851	300	325	770	1339	-	-	1280	-	-
Stage 1	720	674	-	582	566	-	-	-	-	-	-	-
Stage 2	581	559	-	669	649	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	301	301	851	249	291	770	1339	-	-	1280	-	-
Mov Cap-2 Maneuver	388	379	-	347	374	-	-	-	-	-	-	-
Stage 1	669	649	-	541	526	-	-	-	-	-	-	-
Stage 2	537	519	-	582	625	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12		12.6		2		1.4					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1339	-	-	631	478	1280	-	-				
HCM Lane V/C Ratio	0.071	-	-	0.183	0.014	0.037	-	-				
HCM Control Delay (s)	7.9	-	-	12	12.6	7.9	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0	0.1	-	-				

HCM 6th TWSC
15: Southpark Terrace & Middle Access

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Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙	↖		↙	↖	↗
Traffic Vol, veh/h	29	0	122	23	0	41	122	259	3	3	336	33
Future Vol, veh/h	29	0	122	23	0	41	122	259	3	3	336	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	0
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	133	25	0	45	133	282	3	3	365	36
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	943	922	365	1006	957	284	401	0	0	285	0	0
Stage 1	371	371	-	550	550	-	-	-	-	-	-	-
Stage 2	572	551	-	456	407	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	243	270	680	220	258	755	1158	-	-	1277	-	-
Stage 1	649	620	-	519	516	-	-	-	-	-	-	-
Stage 2	505	515	-	584	597	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	208	238	680	161	228	755	1158	-	-	1277	-	-
Mov Cap-2 Maneuver	312	343	-	248	314	-	-	-	-	-	-	-
Stage 1	574	619	-	459	457	-	-	-	-	-	-	-
Stage 2	421	456	-	469	596	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	14.2		14.8			2.7			0.1			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1158	-	-	554	435	1277	-	-				
HCM Lane V/C Ratio	0.115	-	-	0.296	0.16	0.003	-	-				
HCM Control Delay (s)	8.5	-	-	14.2	14.8	7.8	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	1.2	0.6	0	-	-				

HCM 6th TWSC
16: Southpark Terrace & South Access

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Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	299	285	0
Future Vol, veh/h	0	0	0	299	285	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	325	310	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	635	310	310	0	-	0
Stage 1	310	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	443	730	1250	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	443	730	1250	-	-	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1250	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th TWSC
16: Southpark Terrace & South Access

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Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	394	471	0
Future Vol, veh/h	0	0	0	394	471	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	428	512	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	940	512	512	0	-	0
Stage 1	512	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	293	562	1053	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	293	562	1053	-	-	-
Mov Cap-2 Maneuver	420	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1053	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th TWSC
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Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	301	279	0
Future Vol, veh/h	0	0	0	301	279	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	327	303	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	630	303	303	0	-	0
Stage 1	303	-	-	-	-	-
Stage 2	327	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	446	737	1258	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	446	737	1258	-	-	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1258	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th TWSC
16: Southpark Terrace & South Access

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Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	390	473	0
Future Vol, veh/h	0	0	0	390	473	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	424	514	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	938	514	514	0	-	0
Stage 1	514	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	293	560	1052	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	293	560	1052	-	-	-
Mov Cap-2 Maneuver	420	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1052	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

HCM 6th TWSC
17: Southpark Terrace & Residential Access

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Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	40	13	270	243	17
Future Vol, veh/h	54	40	13	270	243	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	0
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	43	14	293	264	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	585	264	282	0	-	0
Stage 1	264	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	473	775	1280	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	468	775	1280	-	-	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.8	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1280	-	633	-	-	
HCM Lane V/C Ratio	0.011	-	0.161	-	-	
HCM Control Delay (s)	7.8	-	11.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.6	-	-	

HCM 6th TWSC
17: Southpark Terrace & Residential Access

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Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	25	43	361	410	59
Future Vol, veh/h	35	25	43	361	410	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	0
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	27	47	392	446	64
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	932	446	510	0	-	0
Stage 1	446	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	296	612	1055	-	-	-
Stage 1	645	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	612	1055	-	-	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.8	0.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1055	-	476	-	-	
HCM Lane V/C Ratio	0.044	-	0.137	-	-	
HCM Control Delay (s)	8.6	-	13.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-	

HCM 6th TWSC
17: Southpark Terrace & Residential Access

2045 Total AM
11/10/2023

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	40	13	272	237	17
Future Vol, veh/h	54	40	13	272	237	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	0
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	43	14	296	258	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	582	258	276	0	-	0
Stage 1	258	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	475	781	1287	-	-	-
Stage 1	785	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	470	781	1287	-	-	-
Mov Cap-2 Maneuver	558	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.8	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1287	-	635	-	-	
HCM Lane V/C Ratio	0.011	-	0.161	-	-	
HCM Control Delay (s)	7.8	-	11.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.6	-	-	

HCM 6th TWSC
17: Southpark Terrace & Residential Access

2045 Total PM
11/10/2023

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	25	43	357	412	59
Future Vol, veh/h	35	25	43	357	412	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	0
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	27	47	388	448	64
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	930	448	512	0	-	0
Stage 1	448	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	297	611	1053	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	611	1053	-	-	-
Mov Cap-2 Maneuver	412	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.7	0.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1053	-	477	-	-	
HCM Lane V/C Ratio	0.044	-	0.137	-	-	
HCM Control Delay (s)	8.6	-	13.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	1106	4	9	709	9	7
Future Vol, veh/h	1106	4	9	709	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1286	5	10	824	10	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1291	0	1718	643
Stage 1	-	-	-	-	1286	-
Stage 2	-	-	-	-	432	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	533	-	*122	416
Stage 1	-	-	-	-	*223	-
Stage 2	-	-	-	-	*744	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	533	-	*119	416
Mov Cap-2 Maneuver	-	-	-	-	*209	-
Stage 1	-	-	-	-	*223	-
Stage 2	-	-	-	-	*730	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		19.5	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	267	-	-	533	-	
HCM Lane V/C Ratio	0.07	-	-	0.02	-	
HCM Control Delay (s)	19.5	-	-	11.9	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	836	12	23	1330	5	16
Future Vol, veh/h	836	12	23	1330	5	16
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	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	929	13	26	1478	6	18

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	942
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	724
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	724
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	468	-	-	724	-
HCM Lane V/C Ratio	0.05	-	-	0.035	-
HCM Control Delay (s)	13.1	-	-	10.2	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

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

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↘	
Traffic Vol, veh/h	1314	4	9	892	9	7
Future Vol, veh/h	1314	4	9	892	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1528	5	10	1037	10	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1533	0	2067	764
Stage 1	-	-	-	-	1528	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	430	-	47	346
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	430	-	46	346
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	536	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		24.8	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	200	-	-	430	-	
HCM Lane V/C Ratio	0.093	-	-	0.024	-	
HCM Control Delay (s)	24.8	-	-	13.6	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↘	
Traffic Vol, veh/h	1007	12	23	1554	5	16
Future Vol, veh/h	1007	12	23	1554	5	16
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	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1119	13	26	1727	6	18
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1132	0	2035	560
Stage 1	-	-	-	-	1119	-
Stage 2	-	-	-	-	916	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	613	-	49	472
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	350	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	613	-	47	472
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	335	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		15.7	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	360	-	-	613	-	
HCM Lane V/C Ratio	0.065	-	-	0.042	-	
HCM Control Delay (s)	15.7	-	-	11.1	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

HCM 6th TWSC
18: Peninsula Drive & Mineral Avenue

2028 Total AM
11/10/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	1480	4	9	1053	9	7
Future Vol, veh/h	1480	4	9	1053	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1609	4	10	1145	10	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1613	0	2202	805
Stage 1	-	-	-	-	1609	-
Stage 2	-	-	-	-	593	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	400	-	*54	325
Stage 1	-	-	-	-	*149	-
Stage 2	-	-	-	-	*597	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	400	-	*52	325
Mov Cap-2 Maneuver	-	-	-	-	*139	-
Stage 1	-	-	-	-	*149	-
Stage 2	-	-	-	-	*582	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		26.5	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	185	-	-	400	-	
HCM Lane V/C Ratio	0.094	-	-	0.024	-	
HCM Control Delay (s)	26.5	-	-	14.2	-	
HCM Lane LOS	D	-	-	B	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC
18: Peninsula Drive & Mineral Avenue

2028 Total PM
11/10/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	
Traffic Vol, veh/h	1220	12	23	1751	5	16
Future Vol, veh/h	1220	12	23	1751	5	16
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	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1326	13	25	1903	5	17
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1339	0	2328	663
Stage 1	-	-	-	-	1326	-
Stage 2	-	-	-	-	1002	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	511	-	*89	404
Stage 1	-	-	-	-	*212	-
Stage 2	-	-	-	-	*327	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	511	-	*85	404
Mov Cap-2 Maneuver	-	-	-	-	*181	-
Stage 1	-	-	-	-	*212	-
Stage 2	-	-	-	-	*311	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		17.4	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	312	-	-	511	-	
HCM Lane V/C Ratio	0.073	-	-	0.049	-	
HCM Control Delay (s)	17.4	-	-	12.4	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	1409	4	9	956	9	7
Future Vol, veh/h	1409	4	9	956	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1638	5	10	1112	10	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1643	0	2214	819
Stage 1	-	-	-	-	1638	-
Stage 2	-	-	-	-	576	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	390	-	*48	319
Stage 1	-	-	-	-	*144	-
Stage 2	-	-	-	-	*646	-
Platoon blocked, %	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	390	-	*47	319
Mov Cap-2 Maneuver	-	-	-	-	*135	-
Stage 1	-	-	-	-	*144	-
Stage 2	-	-	-	-	*629	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		27.2	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	181	-	-	390	-	
HCM Lane V/C Ratio	0.103	-	-	0.027	-	
HCM Control Delay (s)	27.2	-	-	14.5	-	
HCM Lane LOS	D	-	-	B	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	1083	12	23	1674	5	16
Future Vol, veh/h	1083	12	23	1674	5	16
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	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1203	13	26	1860	6	18
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1216	0	2185	602
Stage 1	-	-	-	-	1203	-
Stage 2	-	-	-	-	982	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	569	-	*143	443
Stage 1	-	-	-	-	*247	-
Stage 2	-	-	-	-	*351	-
Platoon blocked, %	-	-	-	-	1	
Mov Cap-1 Maneuver	-	-	569	-	*136	443
Mov Cap-2 Maneuver	-	-	-	-	*217	-
Stage 1	-	-	-	-	*247	-
Stage 2	-	-	-	-	*335	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		15.9	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	355	-	-	569	-	
HCM Lane V/C Ratio	0.066	-	-	0.045	-	
HCM Control Delay (s)	15.9	-	-	11.6	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC
18: Peninsula Drive & Mineral Avenue

2045 Total AM
11/10/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	1575	4	9	1117	9	7
Future Vol, veh/h	1575	4	9	1117	9	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1831	5	10	1299	10	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1836	0	2501	916
Stage 1	-	-	-	-	1831	-
Stage 2	-	-	-	-	670	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	328	-	*25	275
Stage 1	-	-	-	-	*113	-
Stage 2	-	-	-	-	*572	-
Platoon blocked, %	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	328	-	*24	275
Mov Cap-2 Maneuver	-	-	-	-	*105	-
Stage 1	-	-	-	-	*113	-
Stage 2	-	-	-	-	*555	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		33.7	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	144	-	-	328	-	
HCM Lane V/C Ratio	0.129	-	-	0.032	-	
HCM Control Delay (s)	33.7	-	-	16.3	-	
HCM Lane LOS	D	-	-	C	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	1296	12	23	1871	5	16
Future Vol, veh/h	1296	12	23	1871	5	16
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	0	-	0	-
Veh in Median Storage, #	0	-	-	0	2	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1456	13	26	2102	6	18
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1469	0	2559	728
Stage 1	-	-	-	-	1456	-
Stage 2	-	-	-	-	1103	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	455	-	*37	366
Stage 1	-	-	-	-	*181	-
Stage 2	-	-	-	-	*277	-
Platoon blocked, %	-	-		-	1	
Mov Cap-1 Maneuver	-	-	455	-	*35	366
Mov Cap-2 Maneuver	-	-	-	-	*144	-
Stage 1	-	-	-	-	*181	-
Stage 2	-	-	-	-	*262	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		19.7	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	268	-	-	455	-	
HCM Lane V/C Ratio	0.088	-	-	0.057	-	
HCM Control Delay (s)	19.7	-	-	13.4	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

APPENDIX F

Queue Analysis Worksheets

1: Mineral Avenue & Santa Fe Drive (US-85)

02/06/2024



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	953	797	611	271	1905	537	1818	126
v/c Ratio	0.82	0.50	0.37	0.17	0.63	0.56	0.60	0.08
Control Delay	52.5	1.1	38.5	0.2	22.0	21.0	21.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	1.1	38.5	0.2	22.0	21.0	21.3	0.1
Queue Length 50th (ft)	450	0	167	0	430	286	399	0
Queue Length 95th (ft)	492	0	187	0	546	455	510	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1392	1583	2000	1583	3011	954	3011	1583
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	0.68	0.50	0.31	0.17	0.63	0.56	0.60	0.08
Intersection Summary								

1: Mineral Avenue & Santa Fe Drive (US-85)

02/06/2024



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	764	710	1052	209	1489	455	1660	253
v/c Ratio	0.79	0.45	0.76	0.13	0.45	0.43	0.51	0.16
Control Delay	56.6	0.9	53.4	0.2	14.3	12.8	15.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	0.9	53.4	0.2	14.3	12.8	15.1	0.2
Queue Length 50th (ft)	366	0	347	0	252	170	294	0
Queue Length 95th (ft)	412	0	372	0	331	284	385	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1344	1583	1932	1583	3287	1050	3287	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.45	0.54	0.13	0.45	0.43	0.51	0.16
Intersection Summary								

Queues

2028 Total AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/15/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	1009	797	723	311	1905	637	1818	126
v/c Ratio	0.84	0.50	0.42	0.20	0.64	0.68	0.61	0.08
Control Delay	53.0	1.1	38.6	0.3	22.9	26.4	22.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	1.1	38.6	0.3	22.9	26.4	22.2	0.1
Queue Length 50th (ft)	475	0	197	0	448	407	416	0
Queue Length 95th (ft)	540	0	227	0	533	598	497	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1321	1583	1898	1583	2958	932	2958	1583
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	0.76	0.50	0.38	0.20	0.64	0.68	0.61	0.08
Intersection Summary								

Queues

2028 Total PM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/15/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	833	710	1202	249	1489	591	1660	253
v/c Ratio	0.77	0.45	0.78	0.16	0.48	0.60	0.53	0.16
Control Delay	52.5	0.9	51.1	0.2	16.8	20.0	17.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	0.9	51.1	0.2	16.8	20.0	17.8	0.2
Queue Length 50th (ft)	389	0	391	0	279	314	327	0
Queue Length 95th (ft)	442	0	423	0	350	482	407	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1226	1583	1762	1583	3129	990	3129	1583
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	0.68	0.45	0.68	0.16	0.48	0.60	0.53	0.16

Intersection Summary



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	1038	867	665	295	2073	585	1980	137
v/c Ratio	0.84	0.55	0.37	0.19	0.72	0.64	0.68	0.09
Control Delay	51.4	1.4	36.6	0.3	25.9	25.6	25.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	1.4	36.6	0.3	25.9	25.6	25.0	0.1
Queue Length 50th (ft)	486	0	176	0	528	360	489	0
Queue Length 95th (ft)	542	0	201	0	639	542	594	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1392	1583	2000	1583	2898	915	2898	1583
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	0.75	0.55	0.33	0.19	0.72	0.64	0.68	0.09
Intersection Summary								



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	831	773	1145	228	1621	496	1808	275
v/c Ratio	0.79	0.49	0.76	0.14	0.51	0.49	0.57	0.17
Control Delay	54.4	1.1	51.3	0.2	16.9	16.1	18.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.4	1.1	51.3	0.2	16.9	16.1	18.0	0.2
Queue Length 50th (ft)	395	0	374	0	304	220	359	0
Queue Length 95th (ft)	440	0	398	0	394	357	462	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1344	1583	1932	1583	3173	1009	3173	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.49	0.59	0.14	0.51	0.49	0.57	0.17
Intersection Summary								

Queues

2045 Total AM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/15/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	1094	867	778	335	2073	685	1980	137
v/c Ratio	0.88	0.55	0.43	0.21	0.72	0.76	0.69	0.09
Control Delay	54.1	1.4	37.6	0.3	26.1	31.2	25.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	1.4	37.6	0.3	26.1	31.2	25.1	0.1
Queue Length 50th (ft)	513	0	207	0	546	496	505	0
Queue Length 95th (ft)	602	0	245	0	609	686	566	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1321	1583	1898	1583	2882	906	2882	1583
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	0.83	0.55	0.41	0.21	0.72	0.76	0.69	0.09
Intersection Summary								

Queues

2045 Total PM

1: Mineral Avenue & Santa Fe Drive (US-85)

11/15/2023



Lane Group	EBT	EBR	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	901	773	1295	268	1621	631	1808	275
v/c Ratio	0.79	0.49	0.79	0.17	0.53	0.66	0.60	0.17
Control Delay	51.3	1.1	49.7	0.2	19.2	23.8	20.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	1.1	49.7	0.2	19.2	23.8	20.5	0.2
Queue Length 50th (ft)	417	0	418	0	335	379	395	0
Queue Length 95th (ft)	482	0	459	0	401	554	469	0
Internal Link Dist (ft)	479		1248		1970		855	
Turn Bay Length (ft)				275		600		
Base Capacity (vph)	1250	1583	1796	1583	3031	958	3031	1583
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	0.72	0.49	0.72	0.17	0.53	0.66	0.60	0.17

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	402	1181	16	8	799	235	71	92	196	48	260
v/c Ratio	0.73	0.48	0.01	0.03	0.47	0.27	0.27	0.26	0.78	0.13	0.50
Control Delay	17.3	11.0	0.0	10.7	33.9	15.8	41.8	37.4	66.4	38.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	11.0	0.0	10.7	33.9	15.8	41.8	37.4	66.4	38.2	8.0
Queue Length 50th (ft)	109	195	0	3	278	51	47	55	144	31	0
Queue Length 95th (ft)	211	364	0	m10	399	140	85	95	215	60	62
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	673	2436	1115	295	1709	886	338	459	324	465	590
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.48	0.01	0.03	0.47	0.27	0.21	0.20	0.60	0.10	0.44

Intersection Summary

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

2: Long Avenue/Jackass Hill Road & Mineral Avenue

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	254	809	34	17	1165	207	42	70	208	74	273
v/c Ratio	0.68	0.34	0.03	0.04	0.63	0.22	0.16	0.19	0.79	0.20	0.51
Control Delay	21.2	10.9	0.1	4.9	18.7	4.6	38.6	28.1	66.0	39.3	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	10.9	0.1	4.9	18.7	4.6	38.6	28.1	66.0	39.3	7.9
Queue Length 50th (ft)	64	118	0	3	396	33	27	31	153	48	0
Queue Length 95th (ft)	162	226	0	m6	511	m66	56	68	230	86	67
Internal Link Dist (ft)	1248				1532		565		257		
Turn Bay Length (ft)	200	250		50	450		100	100		75	
Base Capacity (vph)	457	2345	1077	417	1845	924	330	457	331	465	600
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.34	0.03	0.04	0.63	0.22	0.13	0.15	0.63	0.16	0.46

Intersection Summary

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

Queues

2028 Total AM

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	402	1353	16	11	967	244	71	97	206	48	260
v/c Ratio	0.79	0.56	0.01	0.04	0.59	0.28	0.27	0.27	0.82	0.13	0.50
Control Delay	28.0	12.0	0.0	11.4	30.0	11.7	42.0	36.7	70.5	38.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	12.0	0.0	11.4	30.0	11.7	42.0	36.7	70.5	38.5	8.1
Queue Length 50th (ft)	155	250	0	2	349	74	46	56	151	30	0
Queue Length 95th (ft)	270	428	0	m9	447	150	87	102	231	62	64
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	589	2429	1112	251	1632	861	315	429	301	434	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.56	0.01	0.04	0.59	0.28	0.23	0.23	0.68	0.11	0.46
Intersection Summary											
m Volume for 95th percentile queue is metered by upstream signal.											

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	254	1016	34	22	1354	218	42	75	220	74	273
v/c Ratio	0.77	0.45	0.03	0.06	0.74	0.24	0.16	0.20	0.83	0.20	0.55
Control Delay	38.6	12.9	0.1	4.3	21.1	4.2	39.1	27.5	71.3	39.7	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	12.9	0.1	4.3	21.1	4.2	39.1	27.5	71.3	39.7	13.3
Queue Length 50th (ft)	112	230	0	4	499	37	26	31	161	47	31
Queue Length 95th (ft)	208	288	0	m6	618	m49	58	72	#266	88	110
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	369	2276	1047	349	1828	923	308	428	307	434	541
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.45	0.03	0.06	0.74	0.24	0.14	0.18	0.72	0.17	0.50

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.

2: Long Avenue/Jackass Hill Road & Mineral Avenue

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	402	1263	16	8	854	235	71	92	196	48	260
v/c Ratio	0.75	0.52	0.01	0.03	0.51	0.27	0.28	0.26	0.79	0.13	0.51
Control Delay	19.6	11.3	0.0	12.3	28.2	12.3	42.3	37.7	67.7	38.6	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	11.3	0.0	12.3	28.2	12.3	42.3	37.7	67.7	38.6	8.1
Queue Length 50th (ft)	109	216	0	2	290	82	47	55	144	31	0
Queue Length 95th (ft)	227	393	0	m10	377	139	86	97	218	61	63
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	655	2443	1118	276	1690	878	326	444	313	450	579
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.52	0.01	0.03	0.51	0.27	0.22	0.21	0.63	0.11	0.45

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	254	868	34	17	1250	207	42	70	208	74	273
v/c Ratio	0.72	0.37	0.03	0.04	0.69	0.23	0.16	0.18	0.77	0.19	0.50
Control Delay	28.6	11.8	0.1	5.6	19.5	3.9	37.5	26.9	62.6	38.3	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	11.8	0.1	5.6	19.5	3.9	37.5	26.9	62.6	38.3	7.5
Queue Length 50th (ft)	89	130	0	3	445	25	27	30	153	48	0
Queue Length 95th (ft)	190	262	0	m6	#624	m59	54	65	222	83	65
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	443	2323	1067	393	1806	909	363	502	364	512	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.37	0.03	0.04	0.69	0.23	0.12	0.14	0.57	0.14	0.43

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.

Queues

2045 Total AM

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	402	1435	16	11	1022	244	71	97	206	48	260
v/c Ratio	0.79	0.59	0.01	0.05	0.65	0.29	0.27	0.27	0.82	0.13	0.50
Control Delay	31.6	12.6	0.0	10.7	26.0	4.4	42.0	36.7	70.5	38.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	12.6	0.0	10.7	26.0	4.4	42.0	36.7	70.5	38.5	8.1
Queue Length 50th (ft)	178	275	0	3	341	31	46	56	151	30	0
Queue Length 95th (ft)	292	470	0	m6	482	79	87	102	231	62	64
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	578	2429	1112	231	1574	839	315	429	301	434	568
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.59	0.01	0.05	0.65	0.29	0.23	0.23	0.68	0.11	0.46

Intersection Summary

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

Queues

2045 Total PM

2: Long Avenue/Jackass Hill Road & Mineral Avenue

11/10/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	254	1074	34	22	1440	218	42	75	220	74	273
v/c Ratio	0.82	0.47	0.03	0.07	0.78	0.23	0.16	0.21	0.86	0.20	0.58
Control Delay	47.6	12.6	0.1	4.2	22.8	3.8	40.4	28.8	76.0	40.8	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	12.6	0.1	4.2	22.8	3.8	40.4	28.8	76.0	40.8	17.0
Queue Length 50th (ft)	127	242	0	4	554	34	27	32	161	47	45
Queue Length 95th (ft)	#245	296	0	m5	m647	m40	59	75	#284	90	131
Internal Link Dist (ft)		1248			1532			565		257	
Turn Bay Length (ft)	200		250	50		450	100		100		75
Base Capacity (vph)	341	2301	1058	330	1852	932	286	399	285	403	502
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.47	0.03	0.07	0.78	0.23	0.15	0.19	0.77	0.18	0.54

Intersection Summary

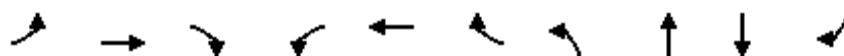
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

3: Southpark Lane/Windermere Street & Mineral Avenue

02/06/2024



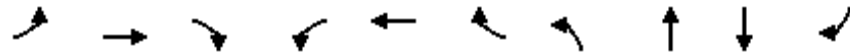
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	60	1096	249	63	675	30	132	73	86	92
v/c Ratio	0.13	0.56	0.26	0.22	0.34	0.03	0.65	0.31	0.52	0.34
Control Delay	10.1	25.0	11.2	20.0	27.7	1.6	64.9	21.6	62.4	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	25.0	11.2	20.0	27.7	1.6	64.9	21.6	62.4	5.8
Queue Length 50th (ft)	22	342	63	23	164	0	99	14	65	0
Queue Length 95th (ft)	m37	489	152	77	321	8	161	58	115	17
Internal Link Dist (ft)		809			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	457	1954	948	288	1962	938	265	294	270	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.56	0.26	0.22	0.34	0.03	0.50	0.25	0.32	0.26

Intersection Summary

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

3: Southpark Lane/Windermere Street & Mineral Avenue

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	57	884	104	82	1280	50	274	154	90	56
v/c Ratio	0.30	0.52	0.12	0.26	0.74	0.06	0.87	0.44	0.53	0.21
Control Delay	16.8	23.5	2.2	9.9	29.0	0.9	74.1	32.1	62.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	23.5	2.2	9.9	29.0	0.9	74.1	32.1	62.5	1.7
Queue Length 50th (ft)	19	291	8	24	506	0	205	67	68	0
Queue Length 95th (ft)	m25	375	m16	33	613	8	#341	134	118	0
Internal Link Dist (ft)		809			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	190	1711	835	316	1731	844	339	368	271	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.52	0.12	0.26	0.74	0.06	0.81	0.42	0.33	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

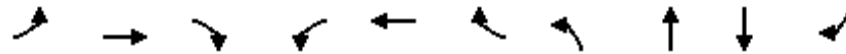
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total AM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	60	1276	249	63	850	34	132	73	91	92
v/c Ratio	0.16	0.65	0.27	0.27	0.44	0.04	0.65	0.31	0.54	0.34
Control Delay	16.3	32.1	16.4	9.9	15.3	0.4	64.9	21.6	62.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	32.1	16.4	9.9	15.3	0.4	64.9	21.6	62.6	5.6
Queue Length 50th (ft)	24	419	68	20	261	0	99	14	68	0
Queue Length 95th (ft)	m58	616	192	30	250	2	161	58	119	17
Internal Link Dist (ft)		798			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	373	1953	938	230	1954	935	265	294	270	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.65	0.27	0.27	0.44	0.04	0.50	0.25	0.34	0.26

Intersection Summary

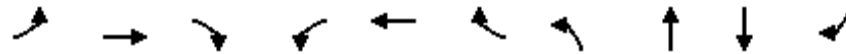
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total PM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	57	1121	104	82	1499	56	274	154	96	56
v/c Ratio	0.35	0.65	0.12	0.34	0.86	0.07	0.91	0.46	0.55	0.20
Control Delay	25.1	23.5	1.2	20.5	36.5	2.2	82.9	33.9	62.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	23.5	1.2	20.5	36.5	2.2	82.9	33.9	62.6	1.6
Queue Length 50th (ft)	12	385	2	24	424	0	209	69	72	0
Queue Length 95th (ft)	m37	494	m12	m71	#744	m6	#365	137	124	0
Internal Link Dist (ft)		798			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	161	1727	842	245	1753	852	309	340	271	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.65	0.12	0.33	0.86	0.07	0.89	0.45	0.35	0.16

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.

Queues

2028 Total AM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	60	1276	249	63	850	34	132	73	62	29	92
v/c Ratio	0.14	0.57	0.24	0.23	0.38	0.03	0.54	0.32	0.40	0.25	0.41
Control Delay	8.0	23.2	10.2	4.8	5.9	0.1	62.1	23.3	49.8	58.4	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	23.2	10.2	4.8	5.9	0.1	62.1	23.3	49.8	58.4	8.0
Queue Length 50th (ft)	24	451	72	4	153	0	51	14	41	22	0
Queue Length 95th (ft)	m20	541	147	9	91	m0	85	60	80	53	18
Internal Link Dist (ft)		1147			1792			556		521	
Turn Bay Length (ft)	175		150	200		200	125		125		
Base Capacity (vph)	433	2228	1057	277	2228	1047	257	347	155	279	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.57	0.24	0.23	0.38	0.03	0.51	0.21	0.40	0.10	0.26

Intersection Summary

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

Queues

2028 Total PM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	1121	104	82	1499	56	274	154	56	40	56
v/c Ratio	0.28	0.52	0.10	0.26	0.69	0.05	0.76	0.58	0.39	0.32	0.20
Control Delay	13.9	16.2	0.4	12.2	23.2	0.1	66.6	39.8	46.3	59.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	16.2	0.4	12.2	23.2	0.1	66.6	39.8	46.3	59.5	1.6
Queue Length 50th (ft)	9	353	1	23	400	0	107	72	35	30	0
Queue Length 95th (ft)	m21	451	m3	m52	495	m0	#161	139	69	65	0
Internal Link Dist (ft)		1147			1792			556		521	
Turn Bay Length (ft)	175		150	200		200	125		125		
Base Capacity (vph)	205	2141	1033	317	2158	1040	371	410	144	279	399
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.52	0.10	0.26	0.69	0.05	0.74	0.38	0.39	0.14	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

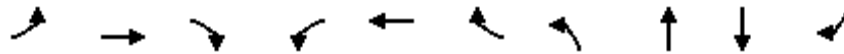
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Background AM

3: Southpark Lane/Windermere Street & Mineral Avenue

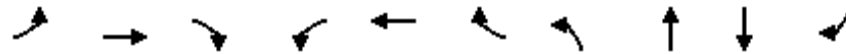
02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	60	1171	249	63	720	30	132	73	86	92
v/c Ratio	0.14	0.60	0.26	0.24	0.37	0.03	0.65	0.31	0.52	0.34
Control Delay	6.4	17.8	3.7	11.2	23.2	1.1	64.9	21.6	62.4	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	17.8	3.7	11.2	23.2	1.1	64.9	21.6	62.4	5.8
Queue Length 50th (ft)	8	353	46	26	241	0	99	14	65	0
Queue Length 95th (ft)	m17	488	32	43	329	8	161	58	115	17
Internal Link Dist (ft)		809			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	435	1954	943	265	1962	938	265	294	270	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.60	0.26	0.24	0.37	0.03	0.50	0.25	0.32	0.26

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	57	948	104	82	1374	50	274	154	90	56
v/c Ratio	0.34	0.55	0.12	0.28	0.79	0.06	0.88	0.45	0.53	0.21
Control Delay	22.0	23.6	2.1	10.3	31.6	0.8	77.2	33.0	62.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	23.6	2.1	10.3	31.6	0.8	77.2	33.0	62.5	1.7
Queue Length 50th (ft)	20	312	8	25	563	0	207	69	68	0
Queue Length 95th (ft)	m32	402	15	32	#677	m7	#353	136	118	0
Internal Link Dist (ft)		809			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	169	1723	840	296	1743	848	324	354	271	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.55	0.12	0.28	0.79	0.06	0.85	0.44	0.33	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

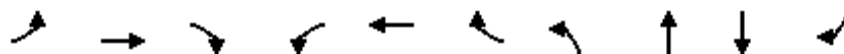
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	60	1351	249	63	895	34	132	73	91	92
v/c Ratio	0.17	0.69	0.27	0.30	0.46	0.04	0.65	0.31	0.54	0.34
Control Delay	8.7	26.0	9.3	10.2	11.1	0.5	64.9	21.6	62.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	26.0	9.3	10.2	11.1	0.5	64.9	21.6	62.6	5.6
Queue Length 50th (ft)	20	473	73	4	173	0	99	14	68	0
Queue Length 95th (ft)	m26	619	129	22	198	4	161	58	119	17
Internal Link Dist (ft)		798			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	354	1953	934	211	1954	935	265	294	270	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.69	0.27	0.30	0.46	0.04	0.50	0.25	0.34	0.26

Intersection Summary

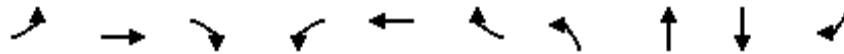
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	57	1184	104	82	1593	56	274	154	96	56
v/c Ratio	0.35	0.66	0.12	0.34	0.87	0.06	1.03	0.52	0.55	0.20
Control Delay	24.3	22.3	1.1	18.9	35.2	2.2	114.3	38.0	62.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	22.3	1.1	18.9	35.2	2.2	114.3	38.0	62.6	1.6
Queue Length 50th (ft)	11	397	0	23	416	0	~228	73	72	0
Queue Length 95th (ft)	m36	508	m11	m67	#787	m4	#400	143	124	0
Internal Link Dist (ft)		798			1792			556	521	
Turn Bay Length (ft)	175		150	200		200	125			
Base Capacity (vph)	161	1800	872	241	1825	882	265	297	271	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.66	0.12	0.34	0.87	0.06	1.03	0.52	0.35	0.16

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.

Queues

2045 Total AM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	60	1351	249	63	895	34	132	73	62	29	92
v/c Ratio	0.14	0.61	0.24	0.25	0.40	0.03	0.54	0.32	0.40	0.25	0.41
Control Delay	4.1	14.5	2.9	7.9	7.3	0.1	62.1	23.3	49.8	58.4	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	14.5	2.9	7.9	7.3	0.1	62.1	23.3	49.8	58.4	8.0
Queue Length 50th (ft)	7	415	47	7	55	0	51	14	41	22	0
Queue Length 95th (ft)	m9	321	5	26	85	m1	85	60	80	53	18
Internal Link Dist (ft)	1147			1792			556			521	
Turn Bay Length (ft)	175	150		200	200		125	125			
Base Capacity (vph)	414	2228	1054	255	2228	1047	257	347	155	279	353
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.61	0.24	0.25	0.40	0.03	0.51	0.21	0.40	0.10	0.26
Intersection Summary											
m Volume for 95th percentile queue is metered by upstream signal.											

Queues

2045 Total PM - Improved

3: Southpark Lane/Windermere Street & Mineral Avenue

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	57	1184	104	82	1593	56	274	154	56	40	56
v/c Ratio	0.30	0.55	0.10	0.27	0.73	0.05	0.81	0.59	0.38	0.31	0.20
Control Delay	18.3	16.6	0.4	12.3	25.1	0.1	71.7	40.8	46.2	58.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	16.6	0.4	12.3	25.1	0.1	71.7	40.8	46.2	58.7	1.5
Queue Length 50th (ft)	9	378	1	24	456	0	108	72	35	30	0
Queue Length 95th (ft)	m23	488	m5	m51	557	m0	#173	139	69	65	0
Internal Link Dist (ft)		1147			1792			556		521	
Turn Bay Length (ft)	175		150	200		200	125		125		
Base Capacity (vph)	187	2157	1039	301	2173	1046	343	397	146	279	399
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.55	0.10	0.27	0.73	0.05	0.80	0.39	0.38	0.14	0.14

Intersection Summary

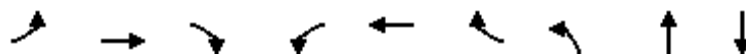
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

4: Mineral Avenue & Mineral Place

11/10/2023



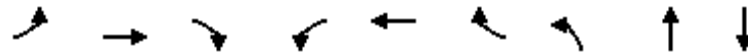
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	33	1248	95	65	942	55	81	61	17
v/c Ratio	0.07	0.49	0.08	0.19	0.36	0.05	0.57	0.29	0.11
Control Delay	2.9	19.0	5.7	2.9	4.5	0.8	66.0	19.2	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	19.0	5.7	2.9	4.5	0.8	66.0	19.2	36.5
Queue Length 50th (ft)	6	457	28	11	114	1	61	6	8
Queue Length 95th (ft)	m6	584	m38	6	104	1	109	46	30
Internal Link Dist (ft)		1792			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	474	2522	1151	358	2605	1186	254	340	283
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	0.49	0.08	0.18	0.36	0.05	0.32	0.18	0.06

Intersection Summary

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

4: Mineral Avenue & Mineral Place

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	16	1295	145	128	1461	28	150	123	137
v/c Ratio	0.07	0.59	0.14	0.44	0.59	0.02	0.82	0.35	0.50
Control Delay	8.3	13.4	5.8	12.3	7.1	0.1	80.7	10.2	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	13.4	5.8	12.3	7.1	0.1	80.7	10.2	25.6
Queue Length 50th (ft)	2	142	3	24	148	0	112	1	37
Queue Length 95th (ft)	m9	327	m51	m48	161	m0	#201	53	100
Internal Link Dist (ft)		1792			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	239	2202	1024	331	2487	1136	218	402	310
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	0.59	0.14	0.39	0.59	0.02	0.69	0.31	0.44

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.

Queues

2045 Total AM

4: Mineral Avenue & Mineral Place

11/13/2023

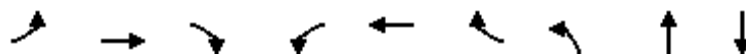
									
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	33	1327	95	65	1000	55	81	61	17
v/c Ratio	0.08	0.53	0.08	0.21	0.38	0.05	0.57	0.29	0.11
Control Delay	1.2	13.9	2.3	4.2	4.8	1.2	66.0	19.2	36.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	13.9	2.3	4.2	4.8	1.2	66.0	19.2	36.5
Queue Length 50th (ft)	0	496	15	2	114	2	61	6	8
Queue Length 95th (ft)	m1	614	m17	24	148	8	109	46	30
Internal Link Dist (ft)		1792			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	449	2522	1151	333	2605	1186	243	327	270
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	0.53	0.08	0.20	0.38	0.05	0.33	0.19	0.06
Intersection Summary									
m Volume for 95th percentile queue is metered by upstream signal.									

Queues

2045 Total PM

4: Mineral Avenue & Mineral Place

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	16	1379	145	128	1560	28	150	123	137
v/c Ratio	0.07	0.63	0.14	0.48	0.63	0.02	0.80	0.35	0.49
Control Delay	10.0	16.3	7.8	16.7	9.4	0.1	76.0	12.1	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	16.3	7.8	16.7	9.4	0.1	76.0	12.1	24.7
Queue Length 50th (ft)	3	196	11	25	181	0	112	8	37
Queue Length 95th (ft)	m10	388	m61	m67	214	m0	180	58	96
Internal Link Dist (ft)		1792			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	214	2188	1014	293	2466	1128	248	429	341
Starvation Cap Reductn	0	0	0	0	36	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	0.63	0.14	0.44	0.64	0.02	0.60	0.29	0.40

Intersection Summary

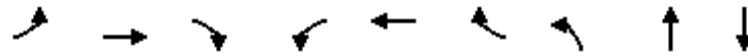
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total AM

5: Mineral Avenue & Elati Street

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	49	1191	98	154	935	60	92	143	74
v/c Ratio	0.11	0.50	0.09	0.43	0.37	0.05	0.61	0.48	0.48
Control Delay	1.0	3.3	0.2	11.0	10.0	3.5	67.2	13.4	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.0	3.3	0.2	11.0	10.0	3.5	67.2	13.4	35.8
Queue Length 50th (ft)	1	12	0	33	131	3	69	2	25
Queue Length 95th (ft)	m3	22	0	87	225	17	120	60	72
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	451	2377	1107	451	2497	1141	248	405	227
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	0.50	0.09	0.34	0.37	0.05	0.37	0.35	0.33

Intersection Summary

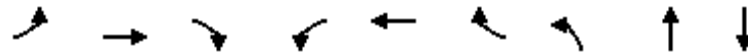
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total PM

5: Mineral Avenue & Elati Street

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	39	1293	119	267	1371	34	113	274	155
v/c Ratio	0.15	0.77	0.14	0.55	0.56	0.03	0.82	0.63	0.93
Control Delay	10.5	36.3	9.6	33.0	13.4	1.5	88.3	15.3	70.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	36.3	9.6	33.0	13.4	1.5	88.3	15.3	70.7
Queue Length 50th (ft)	16	541	28	138	348	0	86	25	38
Queue Length 95th (ft)	m24	355	39	256	290	m2	145	104	#162
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	260	1681	823	484	2452	1121	195	518	191
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	0.15	0.77	0.14	0.55	0.56	0.03	0.58	0.53	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

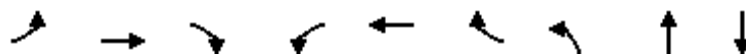
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

5: Mineral Avenue & Elati Street

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	49	1267	98	154	994	60	92	143	74
v/c Ratio	0.12	0.53	0.09	0.46	0.40	0.05	0.61	0.48	0.48
Control Delay	1.2	3.7	0.1	10.7	10.9	4.7	67.2	13.4	35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	3.7	0.1	10.7	10.9	4.7	67.2	13.4	35.8
Queue Length 50th (ft)	1	13	0	7	130	3	69	2	25
Queue Length 95th (ft)	m4	34	0	84	302	23	120	60	72
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	425	2371	1105	414	2500	1142	237	393	218
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	0.12	0.53	0.09	0.37	0.40	0.05	0.39	0.36	0.34

Intersection Summary

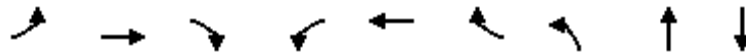
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

5: Mineral Avenue & Elati Street

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	39	1378	119	267	1461	34	113	274	155
v/c Ratio	0.16	0.81	0.14	0.58	0.59	0.03	0.83	0.63	0.96
Control Delay	9.9	34.1	7.8	34.6	14.9	1.8	91.3	14.9	79.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	34.1	7.8	34.6	14.9	1.8	91.3	14.9	79.5
Queue Length 50th (ft)	16	568	22	157	319	0	86	22	40
Queue Length 95th (ft)	m20	310	m31	268	363	m1	#159	102	#172
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	246	1710	835	458	2459	1125	178	500	179
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	0.16	0.81	0.14	0.58	0.59	0.03	0.63	0.55	0.87

Intersection Summary

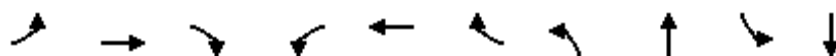
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

6: Southpark Terrace/Mineral Court & Mineral Avenue

02/06/2024



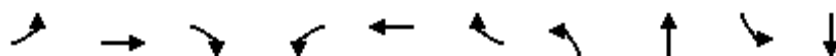
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	1120	39	86	821	13	26	29	44	24
v/c Ratio	0.01	0.41	0.03	0.21	0.28	0.01	0.25	0.20	0.42	0.17
Control Delay	6.7	15.7	5.3	2.3	1.2	0.0	56.3	20.8	63.5	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	15.7	5.3	2.3	1.2	0.0	56.3	20.8	63.5	29.9
Queue Length 50th (ft)	1	252	1	4	27	0	19	1	33	6
Queue Length 95th (ft)	m2	447	m19	10	36	0	48	30	71	32
Internal Link Dist (ft)		974			887			1849		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	577	2712	1232	451	2946	1331	241	301	240	306
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.41	0.03	0.19	0.28	0.01	0.11	0.10	0.18	0.08

Intersection Summary

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

6: Southpark Terrace/Mineral Court & Mineral Avenue

02/06/2024



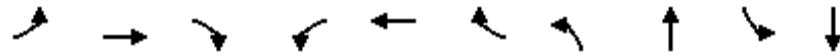
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	1052	41	86	1243	39	60	89	17	17
v/c Ratio	0.06	0.41	0.04	0.20	0.46	0.03	0.50	0.42	0.15	0.11
Control Delay	3.6	16.8	3.8	2.1	2.0	0.1	64.9	21.3	51.6	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	16.8	3.8	2.1	2.0	0.1	64.9	21.3	51.6	24.4
Queue Length 50th (ft)	4	356	5	4	31	0	45	11	12	1
Queue Length 95th (ft)	m7	434	m19	9	61	m0	88	60	35	24
Internal Link Dist (ft)		974			887			1849		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	373	2568	1170	437	2731	1240	254	359	238	308
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.41	0.04	0.20	0.46	0.03	0.24	0.25	0.07	0.06

Intersection Summary

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

6: Southpark Terrace/Mineral Court & Mineral Avenue

11/10/2023



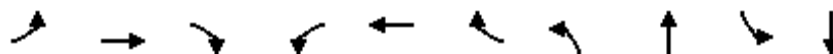
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	1308	72	176	1031	13	67	130	44	24
v/c Ratio	0.01	0.54	0.06	0.52	0.37	0.01	0.52	0.49	0.49	0.14
Control Delay	1.0	2.9	0.1	16.0	6.8	0.0	65.5	15.0	68.5	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.0	2.9	0.1	16.0	6.8	0.0	65.5	15.0	68.5	27.9
Queue Length 50th (ft)	0	27	0	35	145	0	50	1	33	6
Queue Length 95th (ft)	m0	56	0	118	206	m0	95	58	71	31
Internal Link Dist (ft)		974			887			260		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	435	2417	1124	429	2787	1264	230	371	162	292
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.54	0.06	0.41	0.37	0.01	0.29	0.35	0.27	0.08

Intersection Summary

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

6: Southpark Terrace/Mineral Court & Mineral Avenue

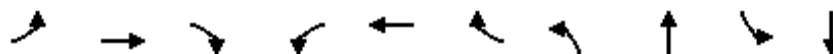
11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	1428	88	194	1617	39	88	174	17	17
v/c Ratio	0.09	0.63	0.08	0.58	0.61	0.03	0.59	0.55	0.23	0.09
Control Delay	5.8	12.9	1.7	27.5	5.9	0.3	66.2	16.4	54.4	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	12.9	1.7	27.5	5.9	0.3	66.2	16.4	54.4	22.6
Queue Length 50th (ft)	3	150	0	76	129	0	66	11	12	1
Queue Length 95th (ft)	m7	276	m8	m151	198	m1	117	76	35	23
Internal Link Dist (ft)		974			887			260		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	235	2250	1056	456	2661	1210	231	400	115	282
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.63	0.08	0.43	0.61	0.03	0.38	0.43	0.15	0.06

Intersection Summary

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



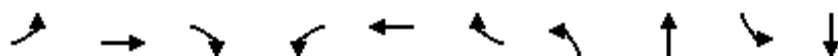
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	1197	39	86	878	13	26	29	44	24
v/c Ratio	0.01	0.44	0.03	0.23	0.30	0.01	0.25	0.20	0.42	0.17
Control Delay	2.0	16.4	2.2	2.7	1.2	0.0	56.3	20.8	63.5	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.0	16.4	2.2	2.7	1.2	0.0	56.3	20.8	63.5	29.9
Queue Length 50th (ft)	1	442	3	3	15	0	19	1	33	6
Queue Length 95th (ft)	m1	537	m8	13	46	m0	48	30	71	32
Internal Link Dist (ft)		974			887			1849		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	551	2712	1232	447	2946	1331	241	301	240	306
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.44	0.03	0.19	0.30	0.01	0.11	0.10	0.18	0.08

Intersection Summary

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

6: Southpark Terrace/Mineral Court & Mineral Avenue

02/06/2024



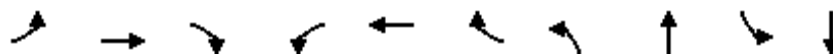
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	1129	41	86	1335	39	60	89	17	17
v/c Ratio	0.06	0.44	0.04	0.22	0.49	0.03	0.50	0.42	0.15	0.11
Control Delay	2.6	15.0	2.5	2.1	2.0	0.1	64.9	21.3	51.6	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	15.0	2.5	2.1	2.0	0.1	64.9	21.3	51.6	24.4
Queue Length 50th (ft)	2	378	4	4	32	0	45	11	12	1
Queue Length 95th (ft)	m3	468	m13	8	63	m0	88	60	35	24
Internal Link Dist (ft)		974			887			1849		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	342	2568	1170	432	2731	1240	278	385	260	335
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.44	0.04	0.20	0.49	0.03	0.22	0.23	0.07	0.05

Intersection Summary

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

6: Southpark Terrace/Mineral Court & Mineral Avenue

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	1385	72	176	1089	13	67	130	44	24
v/c Ratio	0.01	0.58	0.06	0.54	0.39	0.01	0.52	0.49	0.49	0.14
Control Delay	1.0	3.2	0.1	17.8	5.3	0.0	65.5	15.0	68.5	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.0	3.2	0.1	17.8	5.3	0.0	65.5	15.0	68.5	27.9
Queue Length 50th (ft)	0	52	0	36	105	0	50	1	33	6
Queue Length 95th (ft)	m0	67	0	134	207	m0	95	58	71	31
Internal Link Dist (ft)		974			887			260		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	413	2401	1117	406	2787	1264	218	359	154	278
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.58	0.06	0.43	0.39	0.01	0.31	0.36	0.29	0.09

Intersection Summary

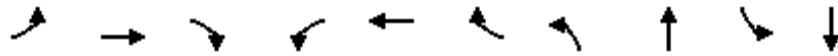
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

6: Southpark Terrace/Mineral Court & Mineral Avenue

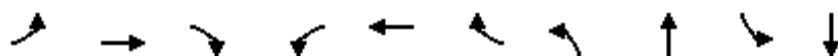
11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	1506	88	194	1708	39	88	174	17	17
v/c Ratio	0.10	0.66	0.08	0.64	0.64	0.03	0.59	0.56	0.23	0.09
Control Delay	4.3	8.2	0.7	33.7	4.3	0.1	66.7	16.5	54.7	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	8.2	0.7	33.7	4.3	0.1	66.7	16.5	54.7	22.8
Queue Length 50th (ft)	1	85	0	75	91	0	66	11	12	1
Queue Length 95th (ft)	m5	218	m3	m142	138	m0	117	76	35	23
Internal Link Dist (ft)		974			887			260		210
Turn Bay Length (ft)	125		75	125		125	50		50	
Base Capacity (vph)	212	2297	1075	363	2671	1215	208	376	103	255
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.66	0.08	0.53	0.64	0.03	0.42	0.46	0.17	0.07

Intersection Summary

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



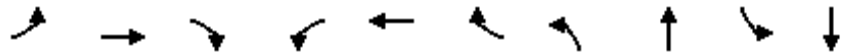
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	1023	75	57	841	58	57	80	64	19
v/c Ratio	0.02	0.38	0.06	0.13	0.30	0.05	0.45	0.38	0.52	0.11
Control Delay	1.5	7.0	2.3	3.2	7.1	3.1	61.1	19.6	66.1	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	7.0	2.3	3.2	7.3	3.1	61.1	19.6	66.1	29.9
Queue Length 50th (ft)	2	185	9	8	137	4	42	8	48	5
Queue Length 95th (ft)	m1	95	1	m19	250	m12	84	54	91	28
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	683	2667	1213	597	2822	1279	242	340	229	304
Starvation Cap Reductn	0	0	0	0	1110	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.38	0.06	0.10	0.49	0.05	0.24	0.24	0.28	0.06

Intersection Summary

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

7: Mineral Avenue & Mineral Avenue 150 W

02/06/2024



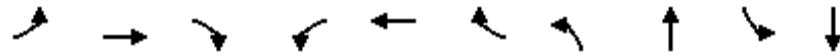
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	995	92	104	1048	169	30	169	212	43
v/c Ratio	0.10	0.51	0.10	0.30	0.49	0.17	0.10	0.35	0.88	0.11
Control Delay	6.5	9.3	1.8	5.2	11.6	4.3	33.6	8.1	76.7	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	9.3	1.8	5.2	12.0	4.3	33.6	8.1	76.7	14.1
Queue Length 50th (ft)	4	73	1	7	256	31	18	7	159	6
Queue Length 95th (ft)	16	157	8	m28	m357	m58	40	57	234	33
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	482	1953	910	464	2143	991	418	603	324	531
Starvation Cap Reductn	0	0	0	0	516	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.51	0.10	0.22	0.64	0.17	0.07	0.28	0.65	0.08

Intersection Summary

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

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



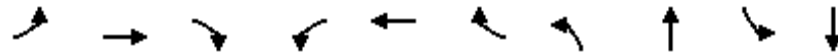
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	1315	75	57	1144	58	57	80	64	19
v/c Ratio	0.03	0.49	0.06	0.17	0.41	0.05	0.45	0.38	0.52	0.11
Control Delay	1.6	4.1	0.2	3.9	5.4	0.9	61.1	19.6	66.1	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	1.6	4.1	0.2	3.9	5.7	0.9	61.1	19.6	66.1	29.9
Queue Length 50th (ft)	0	59	0	9	108	0	42	8	48	5
Queue Length 95th (ft)	m0	52	0	m13	m166	m0	84	54	91	28
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	555	2667	1213	477	2822	1279	219	314	207	277
Starvation Cap Reductn	0	0	0	0	853	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.49	0.06	0.12	0.58	0.05	0.26	0.25	0.31	0.07

Intersection Summary

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

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



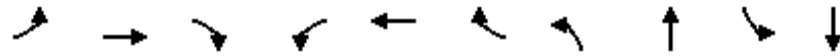
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1443	92	104	1513	169	30	169	212	43
v/c Ratio	0.17	0.73	0.10	0.47	0.69	0.17	0.10	0.36	0.93	0.11
Control Delay	13.9	27.7	10.1	6.6	13.2	4.7	37.3	9.3	90.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	27.7	10.1	6.6	16.5	4.7	37.3	9.3	90.2	16.4
Queue Length 50th (ft)	14	486	18	19	426	30	18	7	159	6
Queue Length 95th (ft)	m19	331	m29	m16	m361	m25	45	64	#302	37
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	364	1980	921	352	2183	1008	316	494	242	410
Starvation Cap Reductn	0	0	0	0	555	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.73	0.10	0.30	0.93	0.17	0.09	0.34	0.88	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

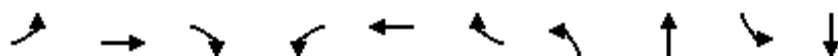
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	1092	75	57	899	58	57	80	64	19
v/c Ratio	0.02	0.41	0.06	0.14	0.32	0.05	0.45	0.38	0.52	0.11
Control Delay	0.9	1.9	0.1	2.1	5.8	2.5	61.1	19.6	66.1	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	0.9	1.9	0.1	2.1	6.0	2.5	61.1	19.6	66.1	29.9
Queue Length 50th (ft)	1	33	0	3	136	1	42	8	48	5
Queue Length 95th (ft)	m1	50	0	m11	m248	m11	84	54	91	28
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	655	2667	1213	572	2822	1279	242	340	229	304
Starvation Cap Reductn	0	0	0	0	1079	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.41	0.06	0.10	0.52	0.05	0.24	0.24	0.28	0.06

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1068	92	104	1123	169	30	169	212	43
v/c Ratio	0.11	0.55	0.10	0.33	0.52	0.17	0.10	0.34	0.87	0.11
Control Delay	6.9	9.6	1.9	5.6	12.3	4.4	33.3	8.0	75.5	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	9.6	1.9	5.6	12.7	4.4	33.3	8.0	75.5	14.0
Queue Length 50th (ft)	4	89	1	7	270	24	18	7	159	6
Queue Length 95th (ft)	m16	167	14	m28	m391	m53	40	56	231	32
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	458	1949	908	441	2140	989	441	627	343	558
Starvation Cap Reductn	0	0	0	0	510	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.55	0.10	0.24	0.69	0.17	0.07	0.27	0.62	0.08

Intersection Summary

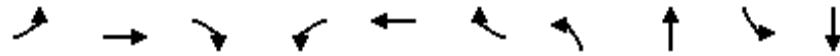
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	1383	75	57	1202	58	57	80	64	19
v/c Ratio	0.03	0.52	0.06	0.19	0.43	0.05	0.45	0.38	0.52	0.11
Control Delay	1.2	2.1	0.1	3.9	5.7	0.9	61.1	19.6	66.1	29.9
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	1.2	2.1	0.1	3.9	6.0	0.9	61.1	19.6	66.1	29.9
Queue Length 50th (ft)	0	30	0	9	128	0	42	8	48	5
Queue Length 95th (ft)	m1	52	m0	m12	m181	m0	84	54	91	28
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	535	2667	1213	458	2822	1279	208	301	196	263
Starvation Cap Reductn	0	0	0	0	835	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.52	0.06	0.12	0.60	0.05	0.27	0.27	0.33	0.07

Intersection Summary

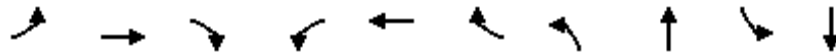
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

7: Mineral Avenue & Mineral Avenue 150 W

11/10/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1516	92	104	1589	169	30	169	212	43
v/c Ratio	0.18	0.76	0.10	0.50	0.72	0.17	0.10	0.36	0.96	0.11
Control Delay	13.5	30.3	10.8	8.7	14.0	4.6	38.9	9.8	99.6	17.1
Queue Delay	0.0	0.0	0.0	0.0	11.3	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	30.3	10.8	8.7	25.3	4.6	38.9	9.8	99.6	17.1
Queue Length 50th (ft)	16	495	22	17	471	31	19	7	163	6
Queue Length 95th (ft)	m21	395	m34	m14	m359	m23	46	65	#318	37
Internal Link Dist (ft)		887			470			227		91
Turn Bay Length (ft)	150		150	150		100	100		125	
Base Capacity (vph)	351	2003	931	342	2205	1017	294	470	223	383
Starvation Cap Reductn	0	0	0	0	613	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.76	0.10	0.30	1.00	0.17	0.10	0.36	0.95	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	377	475	108	133	333	67	351	1293	204	97	1004	346
v/c Ratio	0.77	0.74	0.07	0.42	0.71	0.18	0.83	0.71	0.23	0.45	0.72	0.45
Control Delay	46.4	52.6	0.1	37.5	58.5	1.0	50.8	36.7	11.7	20.0	35.5	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.4	52.6	0.1	37.5	58.5	1.0	50.8	36.7	11.7	20.0	35.5	11.1
Queue Length 50th (ft)	146	195	0	39	131	0	213	434	51	28	357	56
Queue Length 95th (ft)	192	247	0	64	179	0	#327	532	84	52	454	145
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	491	707	1583	317	530	399	465	1816	906	224	1395	768
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.67	0.07	0.42	0.63	0.17	0.75	0.71	0.23	0.43	0.72	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	439	515	171	203	532	77	298	1154	162	112	1268	520
v/c Ratio	1.08	0.73	0.11	0.63	0.95	0.19	0.96	0.67	0.19	0.45	0.86	0.67
Control Delay	98.2	47.5	0.1	44.2	77.8	1.0	77.4	32.5	9.3	17.5	39.1	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.2	47.5	0.1	44.2	77.8	1.0	77.4	32.5	9.3	17.5	39.1	21.8
Queue Length 50th (ft)	~167	204	0	61	217	0	209	276	31	34	462	201
Queue Length 95th (ft)	#257	270	0	92	#327	0	#370	327	61	59	561	330
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	406	707	1583	323	560	411	312	1735	858	260	1474	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.73	0.11	0.63	0.95	0.19	0.96	0.67	0.19	0.43	0.86	0.67

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.

Queues

2028 Total AM - Improved

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	559	501	186	133	359	67	457	1213	204	97	941	512
v/c Ratio	0.82	0.58	0.12	0.36	0.74	0.16	0.80	0.75	0.25	0.60	0.77	0.62
Control Delay	36.7	32.1	0.1	31.7	59.7	0.8	63.8	35.7	9.5	44.9	40.1	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	32.1	0.1	31.7	59.7	0.8	63.8	35.7	9.5	44.9	40.1	13.3
Queue Length 50th (ft)	97	159	0	36	141	0	195	474	56	52	343	110
Queue Length 95th (ft)	#189	181	0	58	193	0	#223	502	111	#99	428	166
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	679	914	1583	373	530	445	572	1619	828	162	1230	829
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.55	0.12	0.36	0.68	0.15	0.80	0.75	0.25	0.60	0.77	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

2028 Total PM - Improved

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	695	547	355	203	569	77	462	1027	162	112	1125	810
v/c Ratio	0.89	0.55	0.22	0.46	1.07	0.17	1.08	0.71	0.21	0.75	0.95	0.93
Control Delay	46.5	45.5	0.2	29.5	108.5	0.8	115.5	37.2	7.0	59.7	56.7	32.8
Queue Delay	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	46.1
Total Delay	46.5	45.5	0.2	29.5	119.0	0.8	115.5	37.2	7.0	59.7	56.7	78.9
Queue Length 50th (ft)	256	218	0	51	~257	0	~200	338	19	61	445	268
Queue Length 95th (ft)	#326	275	0	78	#373	0	#308	436	55	#126	#588	#505
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	778	1002	1583	443	530	445	429	1445	759	150	1179	870
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	28	0	0	0	0	0	0	232
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.55	0.22	0.46	1.13	0.17	1.08	0.71	0.21	0.75	0.95	1.27

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.

Queues

2045 Background AM

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	399	515	111	145	361	72	376	1407	222	106	1093	368
v/c Ratio	0.83	0.78	0.07	0.49	0.75	0.19	0.92	0.78	0.24	0.58	0.82	0.51
Control Delay	43.7	47.9	0.1	39.3	59.8	1.1	66.3	31.3	8.9	31.5	40.8	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	47.9	0.1	39.3	59.8	1.1	66.3	31.3	8.9	31.5	40.8	15.0
Queue Length 50th (ft)	159	216	0	43	142	0	269	513	49	32	416	90
Queue Length 95th (ft)	#183	273	0	69	194	0	#418	355	73	#80	#518	186
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	479	707	1583	297	530	399	433	1814	908	185	1332	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.73	0.07	0.49	0.68	0.18	0.87	0.78	0.24	0.57	0.82	0.51

Intersection Summary

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

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	469	560	181	220	577	84	318	1256	176	122	1380	557
v/c Ratio	1.08	0.76	0.11	0.65	0.98	0.20	1.02	0.75	0.21	0.58	0.98	0.73
Control Delay	95.7	49.8	0.1	42.8	82.4	1.1	94.3	33.3	9.6	26.3	54.5	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.4
Total Delay	95.7	49.8	0.1	42.8	82.4	1.1	96.2	33.3	9.6	26.3	54.5	25.3
Queue Length 50th (ft)	~180	227	0	64	236	0	~228	397	26	39	545	231
Queue Length 95th (ft)	#270	292	0	96	#355	0	#408	581	74	79	#709	377
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	435	737	1583	336	589	423	312	1670	834	221	1415	760
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	2	0	0	0	0	29
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.76	0.11	0.65	0.98	0.20	1.03	0.75	0.21	0.55	0.98	0.76

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.

Queues

2045 Total AM - Improved

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	580	541	189	145	387	72	482	1328	222	106	1030	534
v/c Ratio	0.87	0.62	0.12	0.39	0.78	0.17	0.89	0.81	0.27	0.71	0.83	0.64
Control Delay	50.0	38.1	0.1	32.3	61.4	0.8	70.5	37.1	10.1	56.7	42.8	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	38.1	0.1	32.3	61.4	0.8	70.5	37.1	10.1	56.7	42.8	13.8
Queue Length 50th (ft)	161	125	0	39	152	0	168	471	27	57	387	114
Queue Length 95th (ft)	#239	237	0	62	207	0	#278	620	146	#128	476	184
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	666	914	1583	370	530	445	543	1630	833	149	1244	834
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.59	0.12	0.39	0.73	0.16	0.89	0.81	0.27	0.71	0.83	0.64

Intersection Summary

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

Queues

2045 Total PM - Improved

8: Broadway & Mineral Avenue

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	725	592	365	220	614	84	483	1129	176	122	1237	846
v/c Ratio	1.01	0.63	0.23	0.47	1.10	0.18	1.06	0.77	0.23	0.81	1.05	1.00
Control Delay	66.2	48.6	0.2	29.6	113.9	0.9	107.3	37.9	8.1	68.9	79.2	49.4
Queue Delay	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	36.3
Total Delay	66.2	48.6	0.2	29.6	116.0	0.9	107.3	37.9	8.1	68.9	79.2	85.7
Queue Length 50th (ft)	~276	243	0	57	~283	0	~205	379	20	67	~548	~368
Queue Length 95th (ft)	#376	301	m0	85	#401	0	#314	479	66	#149	#686	#711
Internal Link Dist (ft)		470			810			879			699	
Turn Bay Length (ft)	150		150	75		75	250			250		350
Base Capacity (vph)	721	943	1583	473	560	456	457	1474	771	150	1179	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	44	0	0	0	0	0	0	257
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.63	0.23	0.47	1.19	0.18	1.06	0.77	0.23	0.81	1.05	1.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

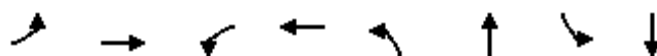
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

9: Broadway & Grant Way

02/06/2024



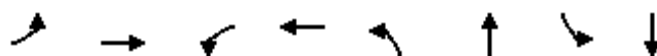
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	107	49	40	143	1910	52	1617
v/c Ratio	0.53	0.45	0.45	0.22	0.50	0.52	0.25	0.47
Control Delay	65.6	18.6	62.7	26.3	19.0	5.7	8.0	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	18.6	62.7	26.3	19.0	5.7	8.0	5.2
Queue Length 50th (ft)	50	9	37	9	38	76	4	81
Queue Length 95th (ft)	95	61	75	42	99	154	m10	110
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	249	373	216	329	420	3672	230	3441
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	0.29	0.23	0.12	0.34	0.52	0.23	0.47

Intersection Summary

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

9: Broadway & Grant Way

02/06/2024



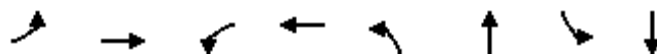
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	78	118	92	151	1893	43	2058
v/c Ratio	0.40	0.29	0.69	0.34	0.67	0.54	0.23	0.64
Control Delay	53.6	16.0	69.5	19.2	42.6	9.5	6.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	16.0	69.5	19.2	42.6	9.5	6.3	9.2
Queue Length 50th (ft)	49	8	88	17	89	159	5	155
Queue Length 95th (ft)	92	51	147	63	m153	209	m10	219
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	227	339	230	345	286	3502	191	3194
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	0.23	0.51	0.27	0.53	0.54	0.23	0.64

Intersection Summary

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

9: Broadway & Grant Way

11/10/2023



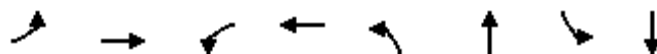
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	107	49	40	143	1937	52	1637
v/c Ratio	0.53	0.45	0.45	0.22	0.51	0.53	0.26	0.48
Control Delay	65.6	18.6	62.7	26.3	19.8	5.7	11.1	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	18.6	62.7	26.3	19.8	5.7	11.1	10.7
Queue Length 50th (ft)	50	9	37	9	42	81	2	328
Queue Length 95th (ft)	95	61	75	42	97	145	m17	457
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	249	373	216	329	415	3671	226	3435
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	0.29	0.23	0.12	0.34	0.53	0.23	0.48

Intersection Summary

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

9: Broadway & Grant Way

11/10/2023



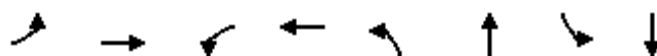
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	78	118	92	151	1929	43	2098
v/c Ratio	0.41	0.29	0.70	0.34	0.68	0.55	0.23	0.66
Control Delay	54.2	16.3	71.0	19.5	44.8	8.8	6.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	16.3	71.0	19.5	44.8	8.8	6.6	8.5
Queue Length 50th (ft)	49	8	88	17	90	146	5	150
Queue Length 95th (ft)	93	51	149	64	m146	176	m9	191
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	216	326	219	332	282	3517	185	3202
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	0.24	0.54	0.28	0.54	0.55	0.23	0.66

Intersection Summary

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

9: Broadway & Grant Way

02/06/2024



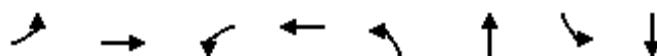
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	107	49	40	143	2071	52	1743
v/c Ratio	0.53	0.45	0.45	0.22	0.53	0.57	0.28	0.51
Control Delay	65.8	18.6	62.8	26.3	22.5	8.5	11.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	18.6	62.8	26.3	22.5	8.5	11.9	5.9
Queue Length 50th (ft)	50	9	37	9	55	175	5	98
Queue Length 95th (ft)	95	61	75	42	m112	192	m17	137
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	227	348	196	301	396	3665	223	3417
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	0.31	0.25	0.13	0.36	0.57	0.23	0.51

Intersection Summary

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

9: Broadway & Grant Way

02/06/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	78	118	92	151	2052	43	2226
v/c Ratio	0.40	0.29	0.68	0.33	0.68	0.59	0.26	0.70
Control Delay	53.0	15.8	68.3	19.0	42.1	12.7	10.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	15.8	68.3	19.0	42.1	12.7	10.7	11.1
Queue Length 50th (ft)	49	8	88	17	92	222	7	200
Queue Length 95th (ft)	91	50	145	62	m146	252	m11	m245
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	237	352	241	359	307	3497	168	3175
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	0.29	0.22	0.49	0.26	0.49	0.59	0.26	0.70

Intersection Summary

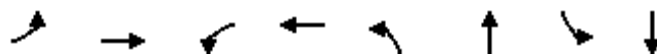
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

9: Broadway & Grant Way

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	107	49	40	143	2098	52	1763
v/c Ratio	0.53	0.45	0.45	0.22	0.54	0.57	0.29	0.52
Control Delay	65.8	18.6	62.8	26.3	23.0	8.2	16.6	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	18.6	62.8	26.3	23.0	8.2	16.6	10.4
Queue Length 50th (ft)	50	9	37	9	54	180	3	324
Queue Length 95th (ft)	95	61	75	42	m108	176	m18	m489
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	227	348	196	301	380	3665	205	3417
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	0.31	0.25	0.13	0.38	0.57	0.25	0.52

Intersection Summary

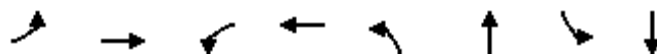
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

9: Broadway & Grant Way

11/10/2023

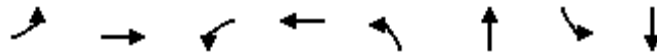


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	68	78	118	92	151	2088	43	2266
v/c Ratio	0.41	0.29	0.70	0.34	0.69	0.60	0.26	0.71
Control Delay	54.2	16.3	71.0	19.5	44.4	10.1	10.1	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	16.3	71.0	19.5	44.4	10.1	10.1	8.5
Queue Length 50th (ft)	49	8	88	17	93	183	5	163
Queue Length 95th (ft)	93	51	149	64	m136	199	m8	m201
Internal Link Dist (ft)		148		174		928		879
Turn Bay Length (ft)	125		50		175		175	
Base Capacity (vph)	216	326	219	332	279	3506	169	3202
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	0.24	0.54	0.28	0.54	0.60	0.25	0.71

Intersection Summary

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

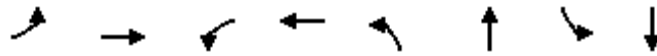
10: Southpark Terrace & Southpark Drive



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	124	9	268	58	269	63	273
v/c Ratio	0.06	0.16	0.02	0.34	0.13	0.34	0.14	0.34
Control Delay	15.4	14.1	14.8	16.8	16.4	18.1	16.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	14.1	14.8	16.8	16.4	18.1	16.6	17.7
Queue Length 50th (ft)	9	36	3	88	19	97	21	95
Queue Length 95th (ft)	25	70	12	146	44	156	47	155
Internal Link Dist (ft)		298		1364		687		559
Turn Bay Length (ft)	100		50		150		50	
Base Capacity (vph)	444	793	546	789	438	802	443	796
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	0.06	0.16	0.02	0.34	0.13	0.34	0.14	0.34
Intersection Summary								

10: Southpark Terrace & Southpark Drive

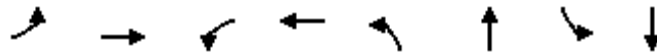
11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	226	43	279	38	385	65	429
v/c Ratio	0.14	0.35	0.11	0.39	0.09	0.41	0.15	0.45
Control Delay	21.2	21.6	20.6	8.7	12.2	15.1	12.8	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	21.6	20.6	8.7	12.2	15.1	12.8	15.8
Queue Length 50th (ft)	18	86	16	32	11	127	19	146
Queue Length 95th (ft)	40	133	37	76	25	177	39	200
Internal Link Dist (ft)		298		1364		687		559
Turn Bay Length (ft)	100		50		150		50	
Base Capacity (vph)	333	652	378	712	405	947	441	947
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	0.14	0.35	0.11	0.39	0.09	0.41	0.15	0.45
Intersection Summary								

10: Southpark Terrace & Southpark Drive

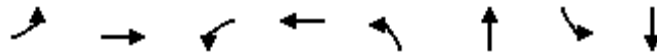
11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	124	9	268	58	269	63	273
v/c Ratio	0.06	0.16	0.02	0.34	0.13	0.34	0.14	0.34
Control Delay	15.4	14.1	14.8	16.8	16.4	18.1	16.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	14.1	14.8	16.8	16.4	18.1	16.6	17.7
Queue Length 50th (ft)	9	36	3	88	19	97	21	95
Queue Length 95th (ft)	25	70	12	146	44	156	47	155
Internal Link Dist (ft)		298		1364		687		559
Turn Bay Length (ft)	100		50		150		50	
Base Capacity (vph)	444	793	546	789	438	802	443	796
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	0.06	0.16	0.02	0.34	0.13	0.34	0.14	0.34
Intersection Summary								

10: Southpark Terrace & Southpark Drive

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	226	43	279	38	385	65	429
v/c Ratio	0.14	0.35	0.11	0.39	0.09	0.41	0.15	0.45
Control Delay	21.2	21.6	20.6	8.7	12.2	15.1	12.8	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	21.6	20.6	8.7	12.2	15.1	12.8	15.8
Queue Length 50th (ft)	18	86	16	32	11	127	19	146
Queue Length 95th (ft)	40	133	37	76	25	177	39	200
Internal Link Dist (ft)		298		1364		687		559
Turn Bay Length (ft)	100		50		150		50	
Base Capacity (vph)	333	652	378	712	405	947	441	947
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	0.14	0.35	0.11	0.39	0.09	0.41	0.15	0.45
Intersection Summary								

Queues
11: Broadway & Southpark Drive

2028 Background AM

02/06/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	92	100	19	32	185	2154	29	1613
v/c Ratio	0.17	0.34	0.64	0.08	0.10	0.61	0.60	0.18	0.50
Control Delay	47.2	14.5	67.7	44.9	0.7	33.3	3.9	8.5	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	14.5	67.7	44.9	0.7	33.3	3.9	8.5	11.1
Queue Length 50th (ft)	20	5	75	13	0	74	87	4	110
Queue Length 95th (ft)	46	51	127	35	0	m131	110	m16	194
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	254	363	237	341	401	441	3614	163	3204
Starvation Cap Reductn	0	0	0	0	0	0	44	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	0.25	0.42	0.06	0.08	0.42	0.60	0.18	0.50

Intersection Summary

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

Queues
11: Broadway & Southpark Drive

2028 Background PM

02/06/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	69	178	200	33	48	81	2098	24	2190
v/c Ratio	0.23	0.42	0.90	0.08	0.12	0.49	0.67	0.17	0.73
Control Delay	37.8	22.1	82.8	34.3	2.5	36.2	6.7	14.5	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	37.8	22.1	82.8	34.3	2.5	36.2	6.7	14.5	23.1
Queue Length 50th (ft)	44	59	150	20	0	32	127	8	310
Queue Length 95th (ft)	80	118	#243	45	10	m54	157	m14	335
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	388	519	286	527	507	169	3124	145	2993
Starvation Cap Reductn	0	0	0	0	0	0	2	0	0
Spillback Cap Reductn	0	2	0	0	0	0	0	0	152
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.34	0.70	0.06	0.09	0.48	0.67	0.17	0.77

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.

Queues

2028 Total AM

11: Broadway & Southpark Drive

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	137	100	19	32	225	2175	29	1633
v/c Ratio	0.18	0.43	0.74	0.08	0.10	0.68	0.61	0.19	0.54
Control Delay	46.3	12.7	79.5	43.6	0.6	42.1	3.7	8.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	12.7	79.5	43.6	0.6	42.1	3.7	8.2	5.4
Queue Length 50th (ft)	23	5	75	13	0	113	72	2	68
Queue Length 95th (ft)	52	60	131	34	0	m167	114	m7	84
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	254	399	190	341	401	443	3575	155	3029
Starvation Cap Reductn	0	0	0	0	0	0	57	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	0.13	0.34	0.53	0.06	0.08	0.51	0.62	0.19	0.54

Intersection Summary

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

Queues

2028 Total PM

11: Broadway & Southpark Drive

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	218	200	33	48	129	2131	24	2232
v/c Ratio	0.22	0.48	0.93	0.07	0.11	0.69	0.70	0.17	0.82
Control Delay	36.3	25.6	90.8	33.0	2.4	49.8	8.5	16.0	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	36.3	25.6	90.8	33.0	2.4	49.8	8.5	16.0	29.7
Queue Length 50th (ft)	44	83	149	19	0	72	152	9	497
Queue Length 95th (ft)	82	154	#270	45	10	m99	202	m15	428
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	388	519	253	527	507	196	3042	142	2735
Starvation Cap Reductn	0	0	0	0	0	0	12	0	0
Spillback Cap Reductn	0	3	0	0	0	0	0	0	209
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.42	0.79	0.06	0.09	0.66	0.70	0.17	0.88

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.

Queues
11: Broadway & Southpark Drive

2045 Background AM

02/06/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	92	100	19	32	185	2322	29	1742
v/c Ratio	0.17	0.34	0.64	0.08	0.10	0.63	0.64	0.20	0.55
Control Delay	47.2	14.5	67.7	44.9	0.7	35.0	5.7	12.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	14.5	67.7	44.9	0.7	35.0	5.7	12.0	19.6
Queue Length 50th (ft)	20	5	75	13	0	91	115	9	259
Queue Length 95th (ft)	46	51	127	35	0	m128	197	m23	300
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	254	363	237	341	401	421	3616	148	3160
Starvation Cap Reductn	0	0	0	0	0	0	53	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	0.25	0.42	0.06	0.08	0.44	0.65	0.20	0.55

Intersection Summary

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

Queues
11: Broadway & Southpark Drive

2045 Background PM

02/06/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	69	178	200	33	48	81	2265	24	2372
v/c Ratio	0.23	0.42	0.90	0.08	0.12	0.50	0.73	0.17	0.79
Control Delay	37.8	22.5	82.8	34.3	2.5	34.1	7.5	13.7	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	37.8	22.5	82.8	34.3	2.5	34.1	7.5	13.7	23.7
Queue Length 50th (ft)	44	61	150	20	0	30	152	0	511
Queue Length 95th (ft)	80	119	#243	45	10	m43	198	m12	327
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	388	518	286	527	507	163	3123	145	3003
Starvation Cap Reductn	0	0	0	0	0	0	8	0	0
Spillback Cap Reductn	0	4	0	0	0	0	0	0	294
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.35	0.70	0.06	0.09	0.50	0.73	0.17	0.88

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.

Queues

2045 Total AM

11: Broadway & Southpark Drive

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	137	100	19	32	225	2344	29	1762
v/c Ratio	0.18	0.43	0.74	0.08	0.10	0.71	0.66	0.20	0.59
Control Delay	46.3	12.7	79.5	43.6	0.6	42.7	6.4	12.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	12.7	79.5	43.6	0.6	42.7	6.5	12.5	7.1
Queue Length 50th (ft)	23	5	75	13	0	132	126	2	95
Queue Length 95th (ft)	52	60	131	34	0	m169	209	m16	125
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	254	399	190	341	401	424	3578	144	3007
Starvation Cap Reductn	0	0	0	0	0	0	66	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	0.13	0.34	0.53	0.06	0.08	0.53	0.67	0.20	0.59

Intersection Summary

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

Queues

2045 Total PM

11: Broadway & Southpark Drive

11/10/2023



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	218	200	33	48	129	2298	24	2413
v/c Ratio	0.22	0.49	0.94	0.07	0.11	0.70	0.75	0.17	0.88
Control Delay	37.0	26.7	93.2	33.8	2.5	46.9	8.8	14.8	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
Total Delay	37.0	26.7	93.2	33.8	2.5	46.9	8.8	14.8	42.2
Queue Length 50th (ft)	43	84	147	19	0	72	164	9	536
Queue Length 95th (ft)	84	160	#282	46	10	m86	227	m13	472
Internal Link Dist (ft)		1364		460			638		928
Turn Bay Length (ft)			100		100	125		200	
Base Capacity (vph)	365	491	237	496	482	194	3057	139	2751
Starvation Cap Reductn	0	0	0	0	0	0	16	0	0
Spillback Cap Reductn	0	6	0	0	0	0	0	0	372
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.45	0.84	0.07	0.10	0.66	0.76	0.17	1.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

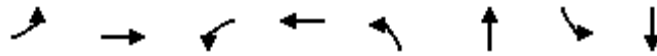
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Background AM

02/06/2024

12: County Line & Southpark Terrace



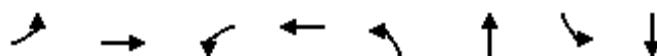
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	81	474	100	501	9	46	29	37
v/c Ratio	0.12	0.20	0.14	0.20	0.06	0.36	0.18	0.19
Control Delay	5.0	9.0	2.2	2.5	41.2	26.6	44.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	9.0	2.2	2.5	41.2	26.6	44.6	20.0
Queue Length 50th (ft)	15	75	4	12	6	4	19	3
Queue Length 95th (ft)	34	120	m16	31	20	41	45	37
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	794	2394	814	2466	183	355	185	349
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	0.10	0.20	0.12	0.20	0.05	0.13	0.16	0.11

Intersection Summary

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

12: County Line & Southpark Terrace

02/06/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	682	45	682	27	95	104	128
v/c Ratio	0.18	0.31	0.09	0.34	0.16	0.53	0.42	0.40
Control Delay	7.5	12.8	3.3	5.4	39.3	23.3	44.8	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	12.8	3.3	5.4	39.3	23.3	44.8	14.5
Queue Length 50th (ft)	19	129	3	22	17	5	69	8
Queue Length 95th (ft)	42	196	m6	m218	41	57	114	64
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	541	2166	533	2034	179	378	264	477
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	0.16	0.31	0.08	0.34	0.15	0.25	0.39	0.27

Intersection Summary

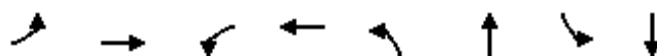
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total AM

12: County Line & Southpark Terrace

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	153	449	100	581	9	46	130	108
v/c Ratio	0.27	0.22	0.16	0.29	0.06	0.36	0.51	0.30
Control Delay	8.1	12.8	3.2	3.0	36.7	26.6	47.4	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	12.8	3.2	3.0	36.7	26.6	47.4	11.3
Queue Length 50th (ft)	36	82	9	13	6	4	87	3
Queue Length 95th (ft)	70	130	m18	27	19	41	138	55
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	671	2082	674	1992	163	303	284	452
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	0.23	0.22	0.15	0.29	0.06	0.15	0.46	0.24

Intersection Summary

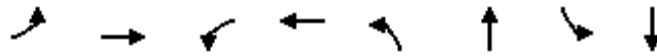
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total PM

12: County Line & Southpark Terrace

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	626	45	788	27	95	258	241
v/c Ratio	0.48	0.32	0.09	0.46	0.19	0.53	0.74	0.47
Control Delay	13.5	16.3	3.4	5.0	36.5	23.3	51.5	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	16.3	3.4	5.0	36.5	23.3	51.5	9.6
Queue Length 50th (ft)	58	137	4	23	16	5	174	7
Queue Length 95th (ft)	105	201	m5	m142	38	57	247	77
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	494	1959	475	1713	142	315	359	594
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	0.41	0.32	0.09	0.46	0.19	0.30	0.72	0.41

Intersection Summary

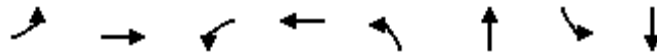
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Background AM

02/06/2024

12: County Line & Southpark Terrace



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	81	512	100	537	9	46	29	37
v/c Ratio	0.12	0.21	0.15	0.22	0.06	0.36	0.18	0.19
Control Delay	5.0	9.1	2.5	3.0	41.2	26.6	44.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	9.1	2.5	3.0	41.2	26.6	44.6	20.0
Queue Length 50th (ft)	15	82	7	18	6	4	19	3
Queue Length 95th (ft)	34	130	m17	36	20	41	45	37
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	770	2397	781	2469	183	355	185	349
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	0.11	0.21	0.13	0.22	0.05	0.13	0.16	0.11

Intersection Summary

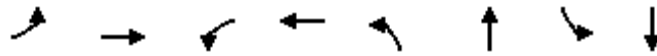
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Background PM

02/06/2024

12: County Line & Southpark Terrace



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	742	45	733	27	95	104	128
v/c Ratio	0.18	0.34	0.10	0.35	0.16	0.53	0.46	0.41
Control Delay	7.1	12.5	2.5	4.4	40.4	23.3	47.2	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	12.5	2.5	4.4	40.4	23.3	47.2	15.2
Queue Length 50th (ft)	18	141	3	23	17	5	70	8
Queue Length 95th (ft)	40	207	m4	m26	42	57	116	65
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	522	2194	509	2065	179	378	236	452
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	0.17	0.34	0.09	0.35	0.15	0.25	0.44	0.28

Intersection Summary

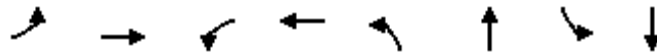
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM

12: County Line & Southpark Terrace

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	153	487	100	617	9	46	130	108
v/c Ratio	0.28	0.23	0.16	0.31	0.06	0.36	0.52	0.31
Control Delay	8.0	12.7	2.8	3.2	37.2	26.6	48.4	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	12.7	2.8	3.2	37.2	26.6	48.4	11.5
Queue Length 50th (ft)	36	90	7	18	6	4	87	3
Queue Length 95th (ft)	68	138	m16	27	19	41	140	56
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	655	2097	654	2004	163	303	272	440
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	0.23	0.23	0.15	0.31	0.06	0.15	0.48	0.25

Intersection Summary

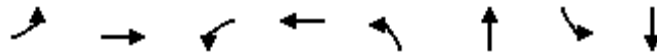
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total PM

12: County Line & Southpark Terrace

11/13/2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	202	686	45	839	27	95	258	241
v/c Ratio	0.51	0.35	0.10	0.48	0.19	0.53	0.76	0.48
Control Delay	13.7	16.2	3.3	5.5	37.0	23.3	53.9	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	16.2	3.3	5.5	37.0	23.3	53.9	9.8
Queue Length 50th (ft)	57	150	4	26	16	5	176	7
Queue Length 95th (ft)	102	218	m5	m172	38	57	250	78
Internal Link Dist (ft)		39		1320		231		687
Turn Bay Length (ft)	400		125		300		175	
Base Capacity (vph)	467	1979	448	1731	142	315	346	582
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	0.35	0.10	0.48	0.19	0.30	0.75	0.41

Intersection Summary

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

Queues

2028 Background AM

02/06/2024

13: Broadway & County Line



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	138	181	178	169	227	202	308	2017	262	227	1530
v/c Ratio	0.60	0.46	0.53	0.67	0.57	0.57	0.70	0.76	0.29	0.67	0.62
Control Delay	49.6	52.2	25.9	54.6	55.8	12.9	59.0	25.7	9.0	70.1	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	52.2	25.9	54.6	55.8	12.9	59.0	25.7	9.0	70.1	21.8
Queue Length 50th (ft)	93	72	15	113	89	0	118	445	50	96	345
Queue Length 95th (ft)	158	111	118	171	126	68	165	534	107	#145	215
Internal Link Dist (ft)		1320			644			231			638
Turn Bay Length (ft)	325		100	425			175		100	225	
Base Capacity (vph)	230	530	388	251	530	409	490	2652	890	348	2483
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.34	0.46	0.67	0.43	0.49	0.63	0.76	0.29	0.65	0.62

Intersection Summary

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

Queues
13: Broadway & County Line

2028 Background PM

02/06/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	152	337	360	331	428	346	188	1695	360	262	2317	
v/c Ratio	0.66	0.70	0.84	1.00	0.57	0.71	0.81	0.79	0.45	0.70	0.99	
Control Delay	44.9	54.0	43.0	86.6	45.4	27.8	81.7	34.1	10.0	64.9	41.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	
Total Delay	44.9	54.0	43.0	86.6	45.4	27.8	81.7	34.1	10.0	64.9	42.4	
Queue Length 50th (ft)	88	130	137	209	154	110	76	427	57	110	~280	
Queue Length 95th (ft)	154	183	#248	#363	208	221	#150	491	139	m150	#760	
Internal Link Dist (ft)	1320				644				231			
Turn Bay Length (ft)	325		100	425			175		100	225		
Base Capacity (vph)	231	530	445	330	796	504	231	2140	808	400	2336	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	5	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.66	0.64	0.81	1.00	0.54	0.69	0.81	0.79	0.45	0.66	0.99	

Intersection Summary

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

Queues

2028 Total AM - Improved

13: Broadway & County Line

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	138	214	223	169	262	202	354	2078	262	227	1593
v/c Ratio	0.62	0.55	0.42	0.68	0.63	0.38	0.72	0.80	0.30	0.65	0.67
Control Delay	53.7	58.1	29.8	54.4	57.1	13.9	57.8	27.6	9.3	72.5	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	58.1	29.8	54.4	57.1	13.9	57.8	27.6	9.3	72.5	12.4
Queue Length 50th (ft)	93	83	100	112	103	39	136	477	51	96	100
Queue Length 95th (ft)	148	120	160	172	143	100	184	570	110	140	139
Internal Link Dist (ft)	1320				644				231		638
Turn Bay Length (ft)	325			100	425			175	100	225	
Base Capacity (vph)	221	530	562	247	560	529	552	2610	878	358	2380
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.40	0.40	0.68	0.47	0.38	0.64	0.80	0.30	0.63	0.67

Intersection Summary

Queues

2028 Total PM - Improved

13: Broadway & County Line

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	152	377	415	331	473	346	248	1777	360	262	2391
v/c Ratio	0.71	0.77	0.82	1.15	0.71	0.58	0.77	0.79	0.46	0.74	1.05
Control Delay	49.0	56.5	50.7	135.3	51.8	28.2	69.6	32.6	16.2	65.6	62.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	56.5	50.7	135.3	51.8	28.2	69.6	32.6	16.2	65.6	62.7
Queue Length 50th (ft)	82	129	273	~228	180	162	98	437	115	111	~749
Queue Length 95th (ft)	m#141	m192	m#362	#416	238	260	#160	502	201	m136	#826
Internal Link Dist (ft)		1320			644			231			638
Turn Bay Length (ft)	325		100	425			175		100	225	
Base Capacity (vph)	215	530	507	287	707	603	325	2239	777	372	2277
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.71	0.82	1.15	0.67	0.57	0.76	0.79	0.46	0.70	1.05

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.

13: Broadway & County Line



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	151	197	194	184	247	220	336	2191	285	247	1656
v/c Ratio	0.67	0.48	0.55	0.74	0.60	0.61	0.72	0.84	0.32	0.70	0.68
Control Delay	53.5	52.2	25.5	59.4	56.3	16.4	59.0	29.1	10.0	69.7	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	52.2	25.5	59.4	56.3	16.4	59.0	29.1	10.0	69.7	22.4
Queue Length 50th (ft)	104	79	26	123	97	14	129	527	61	105	358
Queue Length 95th (ft)	168	118	128	186	136	89	178	612	123	#164	171
Internal Link Dist (ft)		1320			644			231			638
Turn Bay Length (ft)	325		100	425			175		100	225	
Base Capacity (vph)	226	530	402	249	530	407	518	2617	880	354	2426
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.37	0.48	0.74	0.47	0.54	0.65	0.84	0.32	0.70	0.68

Intersection Summary

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

Queues
13: Broadway & County Line

2045 Background PM

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	164	366	393	359	466	377	205	1839	393	285	2511
v/c Ratio	0.69	0.69	0.98	1.13	0.63	0.85	1.02	0.86	0.51	0.79	1.06
Control Delay	46.7	53.5	73.2	123.9	47.8	46.1	125.7	37.0	15.2	68.3	64.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Total Delay	46.7	53.5	73.2	123.9	47.8	46.1	125.7	37.0	15.2	68.3	65.5
Queue Length 50th (ft)	97	142	190	~241	174	179	~87	469	109	120	~765
Queue Length 95th (ft)	#179	199	#375	#430	232	#347	#167	538	202	m154	#860
Internal Link Dist (ft)		1320			644			231			638
Turn Bay Length (ft)	325		100	425			175		100	225	
Base Capacity (vph)	238	530	399	318	737	445	200	2132	775	371	2359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	8
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.69	0.98	1.13	0.63	0.85	1.02	0.86	0.51	0.77	1.07

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.

Queues

2045 Total AM - Improved

13: Broadway & County Line

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	151	229	239	184	282	220	381	2252	285	247	1720
v/c Ratio	0.69	0.56	0.43	0.74	0.65	0.41	0.75	0.88	0.33	0.69	0.74
Control Delay	56.2	56.4	31.6	58.6	57.0	15.5	58.3	31.7	10.4	68.8	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	56.4	31.6	58.6	57.0	15.5	58.3	31.7	10.4	68.8	16.8
Queue Length 50th (ft)	99	88	114	121	111	49	146	565	63	105	84
Queue Length 95th (ft)	159	126	178	184	152	117	198	654	126	#161	288
Internal Link Dist (ft)		1320			644			231			638
Turn Bay Length (ft)	325		100	425			175		100	225	
Base Capacity (vph)	220	530	573	247	560	538	557	2573	868	359	2323
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.43	0.42	0.74	0.50	0.41	0.68	0.88	0.33	0.69	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

2045 Total PM - Improved

13: Broadway & County Line

02/06/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	164	406	447	359	511	377	265	1921	393	285	2586
v/c Ratio	0.80	0.81	0.93	1.29	0.75	0.63	1.04	0.86	0.51	0.82	1.10
Control Delay	60.3	60.2	62.3	184.3	53.3	30.7	122.2	35.4	17.2	70.5	77.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	1.6
Total Delay	60.3	60.2	62.3	184.3	53.3	30.7	122.2	35.4	17.2	70.5	79.5
Queue Length 50th (ft)	96	145	316	~287	196	189	~125	486	132	121	~827
Queue Length 95th (ft)	m#179	m206	m#465	#483	258	298	#213	557	225	m140	#902
Internal Link Dist (ft)		1320			644			231			638
Turn Bay Length (ft)	325		100	425			175		100	225	
Base Capacity (vph)	204	530	482	279	707	598	254	2236	778	348	2359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	8
Spillback Cap Reductn	0	0	0	0	0	0	0	15	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.77	0.93	1.29	0.72	0.63	1.04	0.86	0.51	0.82	1.10

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.

APPENDIX G

Signal Warrant Analysis Worksheets

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2028 Total)

Manual on Uniform Traffic Control Devices (2009 Edition)

INTERSECTION NAME: Mineral Avenue & Mineral Place

COUNT DATE:

MAJOR STREET: Mineral Avenue

OF APPROACH LANI 2

MINOR STREET: Mineral Place

OF APPROACH LANI 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

			MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3
					MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES →					600	150		900	75			
06:00 AM	TO	07:00 AM	0	0								
07:00 AM	TO	08:00 AM										
08:00 AM	TO	09:00 AM										
09:00 AM	TO	10:00 AM	2,365	138	Y			Y	Y	Y	Y	Y
10:00 AM	TO	11:00 AM	2,129	124	Y			Y	Y	Y	Y	Y
11:00 AM	TO	12:00 PM										
12:00 PM	TO	01:00 PM										
01:00 PM	TO	02:00 PM										
02:00 PM	TO	03:00 PM										
03:00 PM	TO	04:00 PM										
04:00 PM	TO	05:00 PM	2,827	251	Y	Y	Y	Y	Y	Y	Y	Y
05:00 PM	TO	06:00 PM	2,544	226	Y	Y	Y	Y	Y	Y	Y	Y
06:00 PM	TO	07:00 PM										
07:00 PM	TO	08:00 PM	0	0								
08:00 PM	TO	09:00 PM	0	0								
09:00 PM	TO	10:00 PM	0	0								
			9,865	739	2			4			4	4
					8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			4 HRS NEEDED SATISFIED	1 HR NEEDED SATISFIED

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2028 Total)

Manual on Uniform Traffic Control Devices (2009 Edition)

INTERSECTION NAME: Mineral Avenue & Elati Street

COUNT DATE:

MAJOR STREET: Mineral Avenue

OF APPROACH LANI 2

MINOR STREET: Elati Street

OF APPROACH LANI 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

				MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3	
						MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET			
THRESHOLD VALUES						600	150		900	75				
06:00 AM	TO	07:00 AM	0	0										
07:00 AM	TO	08:00 AM												
08:00 AM	TO	09:00 AM												
09:00 AM	TO	10:00 AM	2,388	225	Y	Y	Y	Y	Y	Y	Y	Y	Y	
10:00 AM	TO	11:00 AM	2,149	203	Y	Y	Y	Y	Y	Y	Y	Y	Y	
11:00 AM	TO	12:00 PM												
12:00 PM	TO	01:00 PM												
01:00 PM	TO	02:00 PM												
02:00 PM	TO	03:00 PM												
03:00 PM	TO	04:00 PM												
04:00 PM	TO	05:00 PM	2,936	364	Y	Y	Y	Y	Y	Y	Y	Y	Y	
05:00 PM	TO	06:00 PM	2,642	328	Y	Y	Y	Y	Y	Y	Y	Y	Y	
06:00 PM	TO	07:00 PM												
07:00 PM	TO	08:00 PM	0	0										
08:00 PM	TO	09:00 PM	0	0										
09:00 PM	TO	10:00 PM	0	0										
					10,116	1,119	4			4			4	4
					8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			4 HRS NEEDED SATISFIED	1 HR NEEDED SATISFIED		

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2028 Total)

Manual on Uniform Traffic Control Devices (2009 Edition)

INTERSECTION NAME: Southpark Terrace & Southpark Drive

COUNT DATE:

MAJOR STREET: Southpark Terrace

OF APPROACH LANI 1

MINOR STREET: Southpark Drive

OF APPROACH LANI 1

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

				MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3	
						MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET			
THRESHOLD VALUES						500	150		750	75				
06:00 AM	TO	07:00 AM	0	0										
07:00 AM	TO	08:00 AM	575	182	Y	Y	Y		Y					
08:00 AM	TO	09:00 AM	586	214	Y	Y	Y		Y					
09:00 AM	TO	10:00 AM	473	154		Y			Y					
10:00 AM	TO	11:00 AM	482	167		Y			Y					
11:00 AM	TO	12:00 PM	0	0										
12:00 PM	TO	01:00 PM	0	0										
01:00 PM	TO	02:00 PM	669	145	Y				Y					
02:00 PM	TO	03:00 PM	758	208	Y	Y	Y	Y	Y	Y	Y			
03:00 PM	TO	04:00 PM	822	183	Y	Y	Y	Y	Y	Y	Y			
04:00 PM	TO	05:00 PM	749	227	Y	Y	Y		Y		Y			
05:00 PM	TO	06:00 PM	572	121	Y				Y					
06:00 PM	TO	07:00 PM	0	0										
07:00 PM	TO	08:00 PM	0	0										
08:00 PM	TO	09:00 PM	0	0										
09:00 PM	TO	10:00 PM	0	0										
					5,688	1,601	5			2			3	0
					8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			4 HRS NEEDED NOT SATISFIED	1 HR NEEDED NOT SATISFIED		

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

APPENDIX H

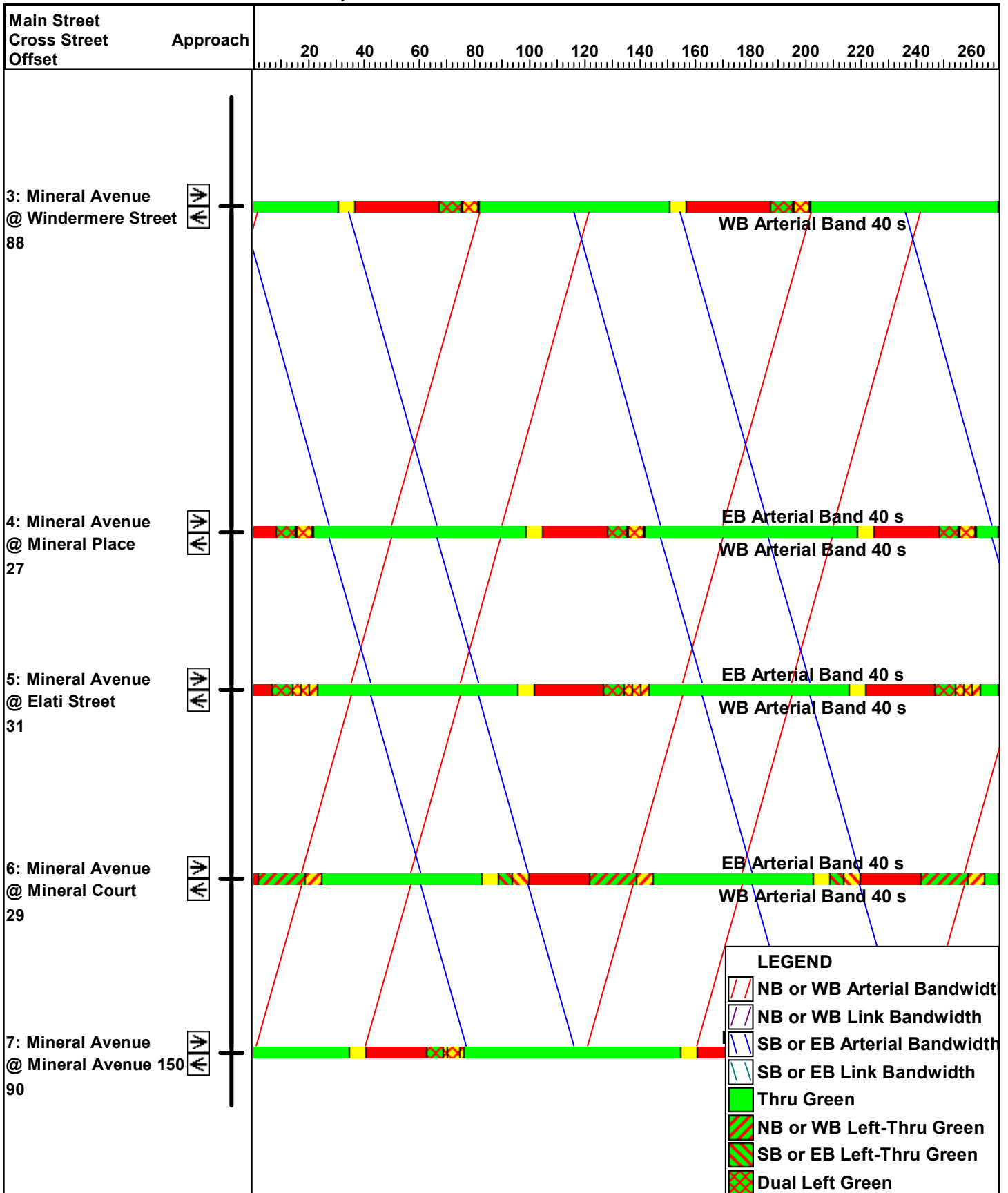
Signal Progression Analysis

Time-Space Diagram - Mineral Avenue

2028 Total AM

Arterial Bandwidths, 90th Percentile Green Times

11/14/2023

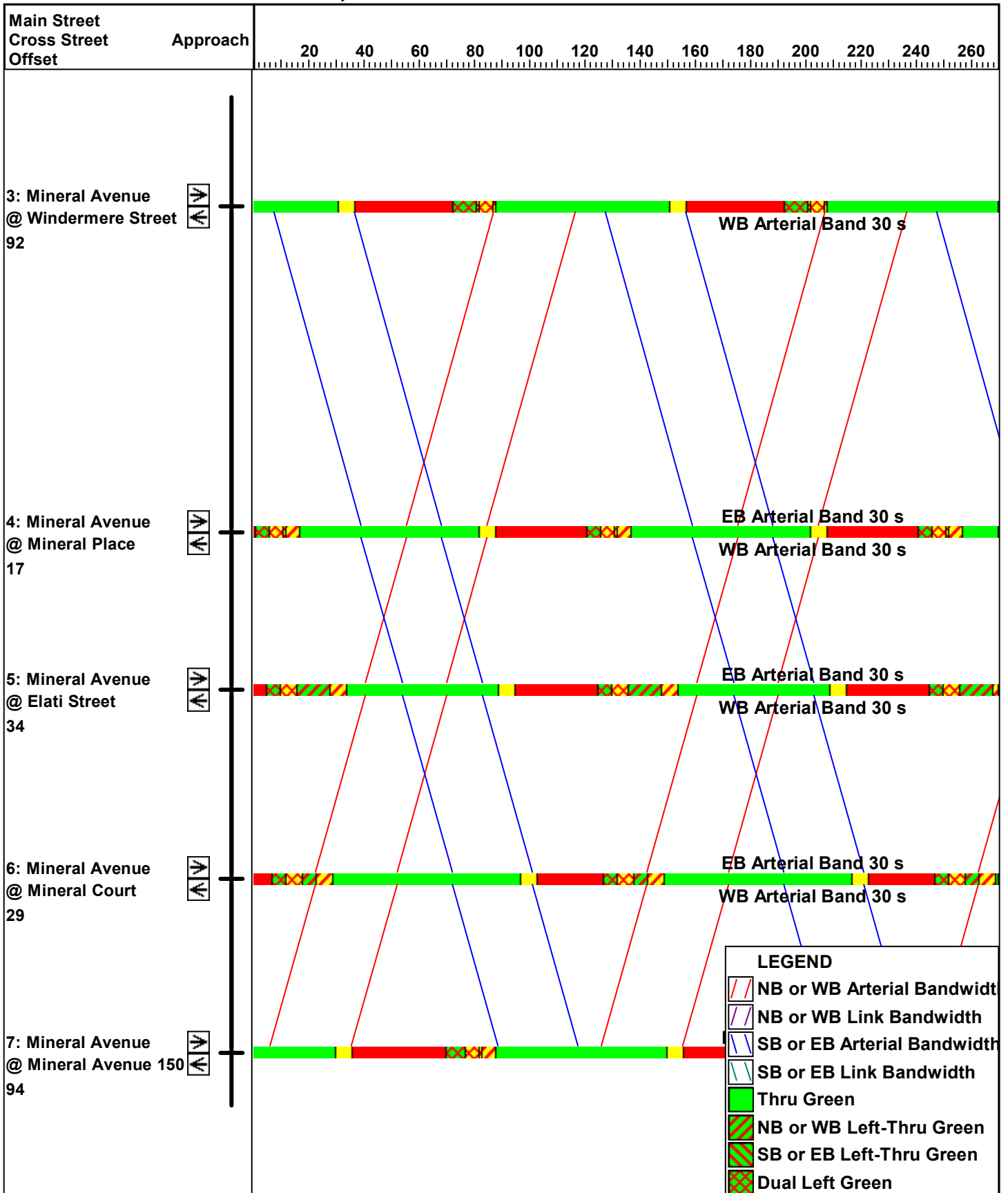


Time-Space Diagram - Mineral Avenue

2028 Total PM

Arterial Bandwidths, 90th Percentile Green Times

11/14/2023

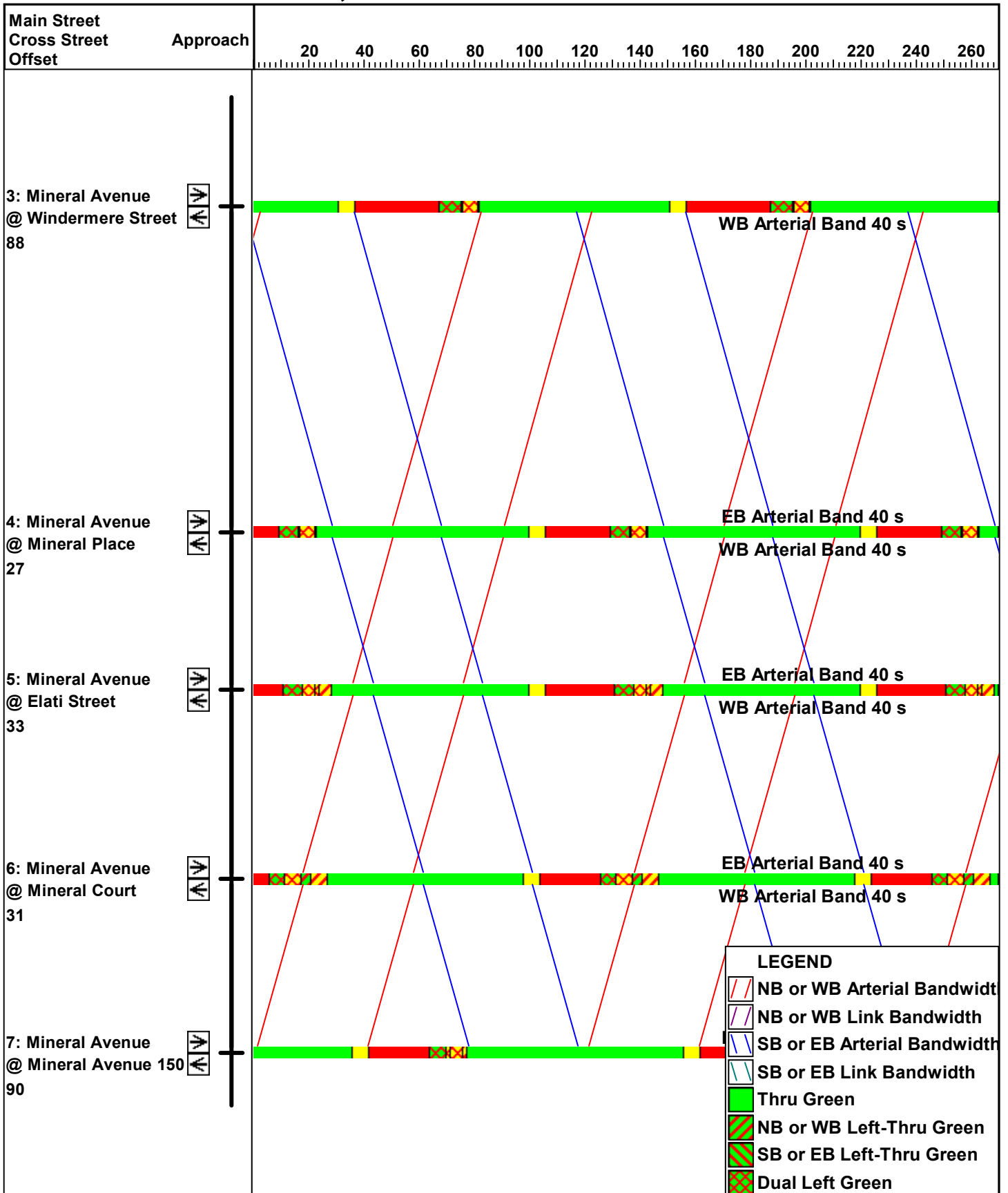


Time-Space Diagram - Mineral Avenue

2045 Total AM

Arterial Bandwidths, 90th Percentile Green Times

11/14/2023

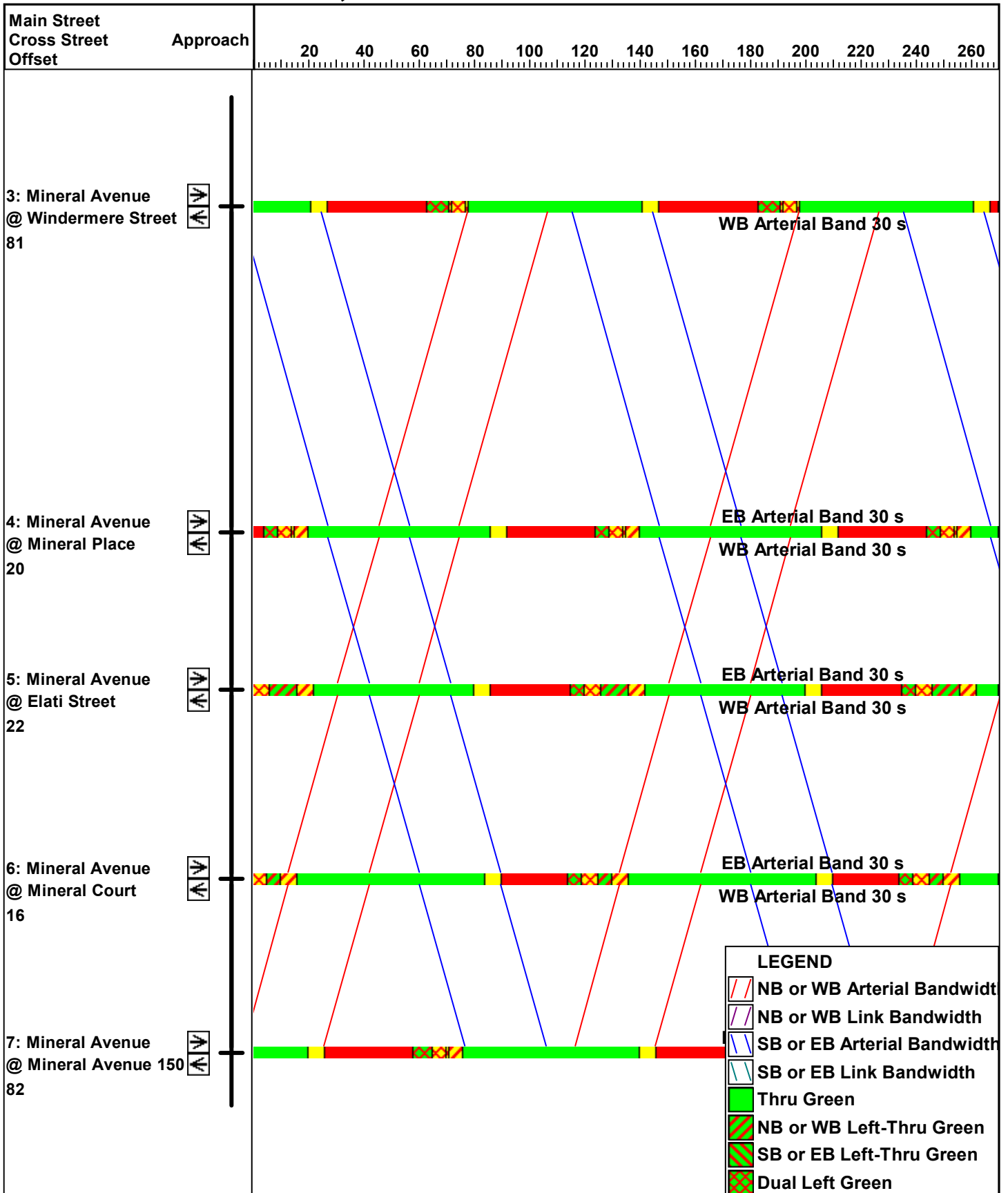


Time-Space Diagram - Mineral Avenue

2045 Total PM

Arterial Bandwidths, 90th Percentile Green Times

11/14/2023





APPENDIX I

Alternative Intersection Analysis Worksheets

Timings

2028 Total AM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1211	92	67	827	53	166	9	8	3
Future Volume (vph)	32	1211	92	67	827	53	166	9	8	3
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	72.0	72.0	14.0	75.0	75.0	34.0	34.0	34.0	34.0
Total Split (%)	9.2%	60.0%	60.0%	11.7%	62.5%	62.5%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 83 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place

								
Ø1	Ø2 (R)		Ø4			Ø5	Ø6 (R)	Ø8
11 s	75 s		34 s			14 s	72 s	34 s

HCM 6th Signalized Intersection Summary

4: Mineral Avenue & Mineral Place

2028 Total AM_Elati Street 3/4

11/13/2023

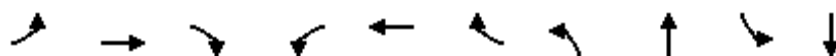
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1211	92	67	827	53	166	9	54	8	3	6
Future Volume (veh/h)	32	1211	92	67	827	53	166	9	54	8	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1248	95	69	853	55	171	9	56	8	3	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	513	2408	1074	331	2442	1089	258	30	188	114	47	64
Arrive On Green	0.03	0.68	0.68	0.05	0.91	0.91	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1406	224	1395	515	350	472
Grp Volume(v), veh/h	33	1248	95	69	853	55	171	0	65	17	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1406	0	1619	1337	0	0
Q Serve(g_s), s	0.7	20.9	2.5	1.4	3.6	0.4	9.2	0.0	4.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	20.9	2.5	1.4	3.6	0.4	13.6	0.0	4.3	4.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	0.47		0.35
Lane Grp Cap(c), veh/h	513	2408	1074	331	2442	1089	258	0	219	225	0	0
V/C Ratio(X)	0.06	0.52	0.09	0.21	0.35	0.05	0.66	0.00	0.30	0.08	0.00	0.00
Avail Cap(c_a), veh/h	538	2408	1074	383	2442	1089	396	0	378	372	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.3	9.6	6.6	7.2	1.8	1.6	50.5	0.0	46.8	45.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.2	0.3	0.4	0.1	2.9	0.0	0.8	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.4	0.8	0.5	1.0	0.1	5.2	0.0	1.8	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	10.4	6.8	7.5	2.2	1.7	53.4	0.0	47.5	45.5	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		1376			977			236			17	
Approach Delay, s/veh		10.0			2.5			51.8			45.5	
Approach LOS		B			A			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	88.5		22.2	10.5	87.3		22.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	69.0		28.0	8.0	66.0		28.0				
Max Q Clear Time (g_c+l1), s	2.7	5.6		15.6	3.4	22.9		6.4				
Green Ext Time (p_c), s	0.0	7.0		0.7	0.0	12.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				11.2								
HCM 6th LOS				B								

Timings

2028 Total PM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	15	1191	133	123	1238	26	245	0	57	0
Future Volume (vph)	15	1191	133	123	1238	26	245	0	57	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	61.0	61.0	16.0	66.0	66.0	43.0	43.0	43.0	43.0
Total Split (%)	9.2%	50.8%	50.8%	13.3%	55.0%	55.0%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place



HCM 6th Signalized Intersection Summary

2028 Total PM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1191	133	123	1238	26	245	0	118	57	0	69
Future Volume (veh/h)	15	1191	133	123	1238	26	245	0	118	57	0	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	1295	145	134	1346	28	266	0	128	62	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	1925	859	252	2041	910	352	0	410	168	16	169
Arrive On Green	0.02	0.54	0.54	0.03	0.38	0.38	0.26	0.00	0.26	0.26	0.00	0.26
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1325	0	1585	481	60	654
Grp Volume(v), veh/h	16	1295	145	134	1346	28	266	0	128	137	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1325	0	1585	1195	0	0
Q Serve(g_s), s	0.5	31.5	5.5	3.9	37.5	1.3	13.1	0.0	7.8	7.1	0.0	0.0
Cycle Q Clear(g_c), s	0.5	31.5	5.5	3.9	37.5	1.3	28.0	0.0	7.8	14.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.45		0.55
Lane Grp Cap(c), veh/h	194	1925	859	252	2041	910	352	0	410	352	0	0
V/C Ratio(X)	0.08	0.67	0.17	0.53	0.66	0.03	0.76	0.00	0.31	0.39	0.00	0.00
Avail Cap(c_a), veh/h	238	1925	859	312	2041	910	418	0	489	423	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.7	19.8	13.9	17.7	27.2	16.1	44.6	0.0	35.9	39.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	1.9	0.4	1.7	1.7	0.1	6.4	0.0	0.4	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.1	2.1	1.7	17.2	0.5	8.3	0.0	3.1	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	21.7	14.3	19.4	28.9	16.2	51.0	0.0	36.3	40.1	0.0	0.0
LnGrp LOS	B	C	B	B	C	B	D	A	D	D	A	A
Approach Vol, veh/h	1456				1508				394		137	
Approach Delay, s/veh	20.9				27.8				46.3		40.1	
Approach LOS	C				C				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	74.9		37.0	12.0	71.0		37.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	60.0		37.0	10.0	55.0		37.0				
Max Q Clear Time (g_c+I1), s	2.5	39.5		30.0	5.9	33.5		16.9				
Green Ext Time (p_c), s	0.0	10.6		1.0	0.1	10.8		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	27.5											
HCM 6th LOS	C											

Timings

2045 Total AM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1287	92	67	883	53	166	9	8	3
Future Volume (vph)	32	1287	92	67	883	53	166	9	8	3
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	74.0	74.0	12.0	75.0	75.0	34.0	34.0	34.0	34.0
Total Split (%)	9.2%	61.7%	61.7%	10.0%	62.5%	62.5%	28.3%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 83 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place

								
Ø1	Ø2 (R)					Ø4		
11 s	75 s					34 s		
								
Ø5	Ø6 (R)					Ø8		
12 s	74 s					34 s		

HCM 6th Signalized Intersection Summary

2045 Total AM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1287	92	67	883	53	166	9	54	8	3	6
Future Volume (veh/h)	32	1287	92	67	883	53	166	9	54	8	3	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1327	95	69	910	55	171	9	56	8	3	6
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	413	2408	1074	310	2442	1089	258	30	188	114	47	64
Arrive On Green	0.03	0.68	0.68	0.03	0.46	0.46	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1406	224	1395	515	350	472
Grp Volume(v), veh/h	33	1327	95	69	910	55	171	0	65	17	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1406	0	1619	1337	0	0
Q Serve(g_s), s	0.7	23.1	2.5	1.4	20.0	2.3	9.2	0.0	4.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	23.1	2.5	1.4	20.0	2.3	13.6	0.0	4.3	4.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	0.47		0.35
Lane Grp Cap(c), veh/h	413	2408	1074	310	2442	1089	258	0	219	225	0	0
V/C Ratio(X)	0.08	0.55	0.09	0.22	0.37	0.05	0.66	0.00	0.30	0.08	0.00	0.00
Avail Cap(c_a), veh/h	437	2408	1074	332	2442	1089	396	0	378	372	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.9	10.0	6.6	7.9	15.5	10.7	50.5	0.0	46.8	45.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.9	0.2	0.4	0.4	0.1	2.9	0.0	0.8	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	8.7	0.8	0.5	9.0	0.8	5.2	0.0	1.8	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.0	10.9	6.8	8.3	16.0	10.8	53.4	0.0	47.5	45.5	0.0	0.0
LnGrp LOS	A	B	A	A	B	B	D	A	D	D	A	A
Approach Vol, veh/h	1455				1034				236			
Approach Delay, s/veh	10.5				15.2				51.8			
Approach LOS	B				B				D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	88.5		22.2	10.5	87.3		22.2				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	69.0		28.0	6.0	68.0		28.0				
Max Q Clear Time (g_c+l1), s	2.7	22.0		15.6	3.4	25.1		6.4				
Green Ext Time (p_c), s	0.0	8.4		0.7	0.0	14.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	16.0											
HCM 6th LOS	B											

Timings

2045 Total PM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	15	1269	133	123	1329	26	245	0	57	0
Future Volume (vph)	15	1269	133	123	1329	26	245	0	57	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	62.0	62.0	16.0	67.0	67.0	42.0	42.0	42.0	42.0
Total Split (%)	9.2%	51.7%	51.7%	13.3%	55.8%	55.8%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 4: Mineral Avenue & Mineral Place



HCM 6th Signalized Intersection Summary

2045 Total PM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1269	133	123	1329	26	245	0	118	57	0	69
Future Volume (veh/h)	15	1269	133	123	1329	26	245	0	118	57	0	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	1379	145	134	1445	28	266	0	128	62	0	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	1927	860	235	2043	911	351	0	409	167	16	169
Arrive On Green	0.02	0.54	0.54	0.03	0.39	0.39	0.26	0.00	0.26	0.26	0.00	0.26
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1325	0	1585	480	60	654
Grp Volume(v), veh/h	16	1379	145	134	1445	28	266	0	128	137	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1325	0	1585	1195	0	0
Q Serve(g_s), s	0.5	34.8	5.5	3.9	41.2	1.3	13.1	0.0	7.8	7.1	0.0	0.0
Cycle Q Clear(g_c), s	0.5	34.8	5.5	3.9	41.2	1.3	28.1	0.0	7.8	15.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.45		0.55
Lane Grp Cap(c), veh/h	174	1927	860	235	2043	911	351	0	409	352	0	0
V/C Ratio(X)	0.09	0.72	0.17	0.57	0.71	0.03	0.76	0.00	0.31	0.39	0.00	0.00
Avail Cap(c_a), veh/h	217	1927	860	295	2043	911	407	0	476	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.8	20.5	13.8	19.5	28.4	16.1	44.7	0.0	36.0	39.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.3	0.4	2.2	2.1	0.1	6.9	0.0	0.4	0.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	14.6	2.1	1.7	19.1	0.5	8.4	0.0	3.1	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	22.8	14.3	21.7	30.4	16.1	51.6	0.0	36.4	40.1	0.0	0.0
LnGrp LOS	B	C	B	C	C	B	D	A	D	D	A	A
Approach Vol, veh/h		1540			1607			394			137	
Approach Delay, s/veh		22.0			29.5			46.6			40.1	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	75.0		36.9	12.0	71.1		36.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	61.0		36.0	10.0	56.0		36.0				
Max Q Clear Time (g_c+l1), s	2.5	43.2		30.1	5.9	36.8		17.0				
Green Ext Time (p_c), s	0.0	10.5		0.9	0.1	10.9		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			28.6									
HCM 6th LOS			C									

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	32	1211	92	63	993	53	0	0	59	0	0	17
Future Vol, veh/h	32	1211	92	63	993	53	0	0	59	0	0	17
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	150	-	150	150	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1248	95	65	1024	55	0	0	61	0	0	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1079	0	0	1343	0	0	-	-	624	-	-	512
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*1001	-	-	509	-	-	0	0	428	0	0	*669
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-	-	-	-	-	-	1
Mov Cap-1 Maneuver	*1001	-	-	509	-	-	-	-	428	-	-	*669
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.7			14.8			10.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	428 * 1001	-	-	-	509	-	-	669				
HCM Lane V/C Ratio	0.142	0.033	-	-	0.128	-	-	0.026				
HCM Control Delay (s)	14.8	8.7	-	-	13.1	-	-	10.5				
HCM Lane LOS	B	A	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.4	-	-	0.1				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1191	133	118	1482	26	0	0	114	0	0	126
Future Vol, veh/h	15	1191	133	118	1482	26	0	0	114	0	0	126
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	150	-	150	150	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1295	145	128	1611	28	0	0	124	0	0	137
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1639	0	0	1440	0	0	-	-	648	-	-	806
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*673	-	-	467	-	-	0	0	413	0	0	*450
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-						1
Mov Cap-1 Maneuver	*673	-	-	467	-	-	-	-	413	-	-	*450
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.1			17.4			16.5		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	413	* 673	-	-	467	-	-	450				
HCM Lane V/C Ratio	0.3	0.024	-	-	0.275	-	-	0.304				
HCM Control Delay (s)	17.4	10.5	-	-	15.6	-	-	16.5				
HCM Lane LOS	C	B	-	-	C	-	-	C				
HCM 95th %tile Q(veh)	1.2	0.1	-	-	1.1	-	-	1.3				
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	32	1287	92	63	1049	53	0	0	59	0	0	17
Future Vol, veh/h	32	1287	92	63	1049	53	0	0	59	0	0	17
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	150	-	150	150	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	1327	95	65	1081	55	0	0	61	0	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1136	0	0	1422	0	0	-	-	664	-	-	541
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*946	-	-	475	-	-	0	0	403	0	0	*633
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-						1
Mov Cap-1 Maneuver	*946	-	-	475	-	-	-	-	403	-	-	*633
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.7			15.5			10.8		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	* 946	-	-	475	-	-	633
HCM Lane V/C Ratio	0.151	0.035	-	-	0.137	-	-	0.028
HCM Control Delay (s)	15.5	8.9	-	-	13.8	-	-	10.8
HCM Lane LOS	C	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.5	-	-	0.1

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

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	1269	133	118	1573	26	0	0	114	0	0	126
Future Vol, veh/h	15	1269	133	118	1573	26	0	0	114	0	0	126
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	150	-	150	150	-	100	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	1379	145	128	1710	28	0	0	124	0	0	137
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1738	0	0	1524	0	0	-	-	690	-	-	855
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*634	-	-	434	-	-	0	0	388	0	0	*424
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	-	-	-						1
Mov Cap-1 Maneuver	*634	-	-	434	-	-	-	-	388	-	-	*424
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.2			18.6			17.5		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	388	* 634	-	-	434	-	-	424				
HCM Lane V/C Ratio	0.319	0.026	-	-	0.296	-	-	0.323				
HCM Control Delay (s)	18.6	10.8	-	-	16.7	-	-	17.5				
HCM Lane LOS	C	B	-	-	C	-	-	C				
HCM 95th %tile Q(veh)	1.4	0.1	-	-	1.2	-	-	1.4				
Notes												
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon												

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	1143	94	148	898	58	0	0	135	0	0	71
Future Vol, veh/h	50	1143	94	148	898	58	0	0	135	0	0	71
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	150	-	150	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	1191	98	154	935	60	0	0	141	0	0	74
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	995	0	0	1289	0	0	-	-	596	-	-	468
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*1078	-	-	923	-	-	0	0	*618	0	0	*720
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	*1078	-	-	923	-	-	-	-	*618	-	-	*720
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.3			12.5			10.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	618 * 1078			-	-	923	-	-	720			
HCM Lane V/C Ratio	0.228	0.048	-	-	0.167	-	-	0.103				
HCM Control Delay (s)	12.5	8.5	-	-	9.7	-	-	10.6				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.9	0.2	-	-	0.6	-	-	0.3				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	1215	112	251	1289	32	0	0	253	0	0	146
Future Vol, veh/h	42	1215	112	251	1289	32	0	0	253	0	0	146
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	150	-	150	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	1293	119	267	1371	34	0	0	269	0	0	155
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1405	0	0	1412	0	0	-	-	647	-	-	686
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*790	-	-	842	-	-	0	0	*580	0	0	*528
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	*790	-	-	842	-	-	-	-	*580	-	-	*528
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.8			16.5			14.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	580	* 790	-	-	842	-	-	528				
HCM Lane V/C Ratio	0.464	0.057	-	-	0.317	-	-	0.294				
HCM Control Delay (s)	16.5	9.8	-	-	11.2	-	-	14.6				
HCM Lane LOS	C	A	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	2.4	0.2	-	-	1.4	-	-	1.2				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	1216	94	148	954	58	0	0	135	0	0	71
Future Vol, veh/h	50	1216	94	148	954	58	0	0	135	0	0	71
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	150	-	150	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	1267	98	154	994	60	0	0	141	0	0	74
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	1054	0	0	1365	0	0	-	-	634	-	-	497
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*1024	-	-	*868	-	-	0	0	*580	0	0	*685
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	*1024	-	-	*868	-	-	-	-	*580	-	-	*685
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.3		1.3			13.2			10.9			
HCM LOS						B			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	580 * 1024			-	-	* 868	-	-	685			
HCM Lane V/C Ratio	0.242	0.051	-	-	0.178	-	-	0.108				
HCM Control Delay (s)	13.2	8.7	-	-	10	-	-	10.9				
HCM Lane LOS	B	A	-	-	B	-	-	B				
HCM 95th %tile Q(veh)	0.9	0.2	-	-	0.6	-	-	0.4				
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	42	1295	112	251	1373	32	0	0	253	0	0	146
Future Vol, veh/h	42	1295	112	251	1373	32	0	0	253	0	0	146
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	150	-	150	150	-	150	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	1378	119	267	1461	34	0	0	269	0	0	155
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1495	0	0	1497	0	0	-	-	689	-	-	731
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	*751	-	-	*790	-	-	0	0	*528	0	0	*502
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	1	-	-	1	-	-			1			1
Mov Cap-1 Maneuver	*751	-	-	*790	-	-	-	-	*528	-	-	*502
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			1.8			18.7			15.4		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	528	* 751	-	-	* 790	-	-	502				
HCM Lane V/C Ratio	0.51	0.059	-	-	0.338	-	-	0.309				
HCM Control Delay (s)	18.7	10.1	-	-	11.9	-	-	15.4				
HCM Lane LOS	C	B	-	-	B	-	-	C				
HCM 95th %tile Q(veh)	2.9	0.2	-	-	1.5	-	-	1.3				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined					*: All major volume in platoon			

Timings
5: Mineral Avenue & Elati Street

2028 Total AM_Mineral Place 3/4

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	1143	94	148	898	58	167	3	28	5
Future Volume (vph)	47	1143	94	148	898	58	167	3	28	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	65.0	65.0	20.0	74.0	74.0	35.0	35.0	35.0	35.0
Total Split (%)	9.2%	54.2%	54.2%	16.7%	61.7%	61.7%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

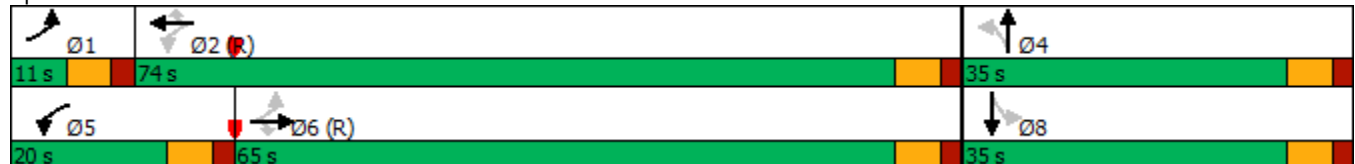
Actuated Cycle Length: 120

Offset: 104 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street



HCM 6th Signalized Intersection Summary
5: Mineral Avenue & Elati Street

2028 Total AM_Mineral Place 3/4

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	47	1143	94	148	898	58	167	3	134	28	5	38
Future Volume (veh/h)	47	1143	94	148	898	58	167	3	134	28	5	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	1191	98	154	935	60	174	3	140	29	5	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	470	2198	980	333	2259	1008	262	6	281	98	30	102
Arrive On Green	0.03	0.62	0.62	0.10	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1361	33	1557	313	165	563
Grp Volume(v), veh/h	49	1191	98	154	935	60	174	0	143	74	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1361	0	1590	1041	0	0
Q Serve(g_s), s	1.2	23.1	3.0	3.9	0.0	0.0	7.1	0.0	9.7	2.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	23.1	3.0	3.9	0.0	0.0	18.8	0.0	9.7	11.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.39		0.54
Lane Grp Cap(c), veh/h	470	2198	980	333	2259	1008	262	0	287	230	0	0
V/C Ratio(X)	0.10	0.54	0.10	0.46	0.41	0.06	0.66	0.00	0.50	0.32	0.00	0.00
Avail Cap(c_a), veh/h	484	2198	980	450	2259	1008	345	0	384	318	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	13.1	9.3	10.0	0.0	0.0	48.9	0.0	44.3	44.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.0	0.2	0.9	0.5	0.1	2.9	0.0	1.3	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.7	1.0	1.3	0.2	0.0	5.3	0.0	3.9	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.6	14.1	9.5	10.9	0.5	0.1	51.8	0.0	45.6	44.9	0.0	0.0
LnGrp LOS	A	B	A	B	A	A	D	A	D	D	A	A
Approach Vol, veh/h	1338				1149				317		74	
Approach Delay, s/veh	13.5				1.9				49.0		44.9	
Approach LOS	B				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	82.3		27.7	12.1	80.2		27.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	68.0		29.0	14.0	59.0		29.0				
Max Q Clear Time (g_c+l1), s	3.2	2.0		20.8	5.9	25.1		13.7				
Green Ext Time (p_c), s	0.0	8.0		0.9	0.2	10.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	13.6											
HCM 6th LOS	B											

Timings
5: Mineral Avenue & Elati Street

2028 Total PM_Mineral Place 3/4

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	37	1215	112	251	1289	32	244	5	33	5
Future Volume (vph)	37	1215	112	251	1289	32	244	5	33	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	57.0	57.0	24.0	70.0	70.0	39.0	39.0	39.0	39.0
Total Split (%)	9.2%	47.5%	47.5%	20.0%	58.3%	58.3%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	Max	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

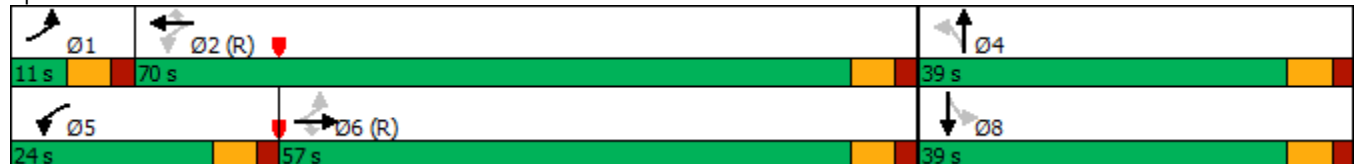
Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street



HCM 6th Signalized Intersection Summary

5: Mineral Avenue & Elati Street

2028 Total PM_Mineral Place 3/4

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1215	112	251	1289	32	244	5	253	33	5	108
Future Volume (veh/h)	37	1215	112	251	1289	32	244	5	253	33	5	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1293	119	267	1371	34	260	5	269	35	5	115
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	1510	674	364	1936	863	274	8	429	77	30	202
Arrive On Green	0.03	0.43	0.43	0.15	0.54	0.54	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1272	29	1560	148	108	736
Grp Volume(v), veh/h	39	1293	119	267	1371	34	260	0	274	155	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1272	0	1589	992	0	0
Q Serve(g_s), s	1.5	39.5	5.6	10.3	34.3	1.2	10.9	0.0	18.1	4.0	0.0	0.0
Cycle Q Clear(g_c), s	1.5	39.5	5.6	10.3	34.3	1.2	33.0	0.0	18.1	22.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.23		0.74
Lane Grp Cap(c), veh/h	213	1510	674	364	1936	863	274	0	437	309	0	0
V/C Ratio(X)	0.18	0.86	0.18	0.73	0.71	0.04	0.95	0.00	0.63	0.50	0.00	0.00
Avail Cap(c_a), veh/h	233	1510	674	364	1936	863	274	0	437	309	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.0	31.2	21.4	27.4	20.3	12.7	49.3	0.0	38.1	37.8	0.0	0.0
Incr Delay (d2), s/veh	0.4	6.4	0.6	9.6	1.7	0.1	40.8	0.0	2.8	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	17.9	2.2	4.3	14.2	0.4	11.0	0.0	7.4	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	37.6	22.0	37.0	21.9	12.8	90.1	0.0	40.9	39.0	0.0	0.0
LnGrp LOS	C	D	C	D	C	B	F	A	D	D	A	A
Approach Vol, veh/h	1451			1672			534			155		
Approach Delay, s/veh	35.9			24.2			64.9			39.0		
Approach LOS	D			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	71.4		39.0	24.0	57.0		39.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	64.0		33.0	18.0	51.0		33.0				
Max Q Clear Time (g_c+l1), s	3.5	36.3		35.0	12.3	41.5		24.1				
Green Ext Time (p_c), s	0.0	12.7		0.0	0.4	6.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay	34.9											
HCM 6th LOS	C											

Timings 5: Mineral Avenue & Elati Street

2045 Total AM_Mineral Place 3/4

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	47	1216	94	148	954	58	167	3	28	5
Future Volume (vph)	47	1216	94	148	954	58	167	3	28	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	11.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	68.0	68.0	19.0	76.0	76.0	33.0	33.0	33.0	33.0
Total Split (%)	9.2%	56.7%	56.7%	15.8%	63.3%	63.3%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

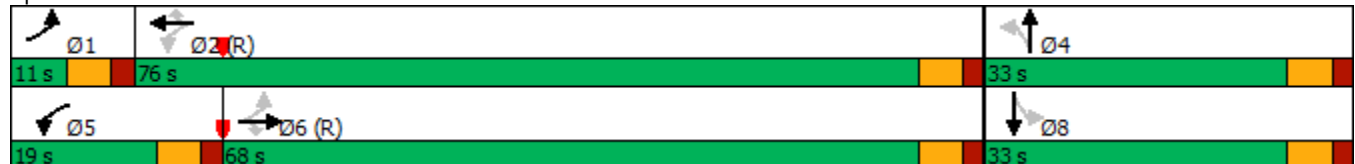
Actuated Cycle Length: 120

Offset: 104 (87%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street



HCM 6th Signalized Intersection Summary

5: Mineral Avenue & Elati Street

2045 Total AM_Mineral Place 3/4

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	1216	94	148	954	58	167	3	134	28	5	38
Future Volume (veh/h)	47	1216	94	148	954	58	167	3	134	28	5	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	1267	98	154	994	60	174	3	140	29	5	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	2202	982	313	2263	1009	261	6	280	98	30	101
Arrive On Green	0.03	0.62	0.62	0.10	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1361	33	1557	311	166	561
Grp Volume(v), veh/h	49	1267	98	154	994	60	174	0	143	74	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1361	0	1590	1038	0	0
Q Serve(g_s), s	1.2	25.3	3.0	3.9	0.0	0.0	7.1	0.0	9.7	2.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	25.3	3.0	3.9	0.0	0.0	18.8	0.0	9.7	11.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.39		0.54
Lane Grp Cap(c), veh/h	451	2202	982	313	2263	1009	261	0	286	228	0	0
V/C Ratio(X)	0.11	0.58	0.10	0.49	0.44	0.06	0.67	0.00	0.50	0.32	0.00	0.00
Avail Cap(c_a), veh/h	466	2202	982	416	2263	1009	323	0	358	294	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	13.5	9.3	10.8	0.0	0.0	49.0	0.0	44.4	44.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.1	0.2	1.1	0.6	0.1	3.7	0.0	1.4	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	10.0	1.1	1.4	0.2	0.0	5.4	0.0	4.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.5	14.6	9.5	11.9	0.6	0.1	52.7	0.0	45.7	45.0	0.0	0.0
LnGrp LOS	A	B	A	B	A	A	D	A	D	D	A	A
Approach Vol, veh/h	1414				1208				317		74	
Approach Delay, s/veh	14.0				2.0				49.6		45.0	
Approach LOS	B				A				D		D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	82.4		27.6	12.1	80.3		27.6				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	70.0		27.0	13.0	62.0		27.0				
Max Q Clear Time (g_c+l1), s	3.2	2.0		20.8	5.9	27.3		13.7				
Green Ext Time (p_c), s	0.0	9.8		0.7	0.2	12.9		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	13.7											
HCM 6th LOS	B											

Timings
5: Mineral Avenue & Elati Street

2045 Total PM_Mineral Place 3/4

11/13/2023

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	37	1295	112	251	1373	32	244	5	33	5
Future Volume (vph)	37	1295	112	251	1373	32	244	5	33	5
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	1	6		5	2			4		8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	5	2	2	4	4	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	11.0	58.0	58.0	24.0	71.0	71.0	38.0	38.0	38.0	38.0
Total Split (%)	9.2%	48.3%	48.3%	20.0%	59.2%	59.2%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	Max	C-Max	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 120

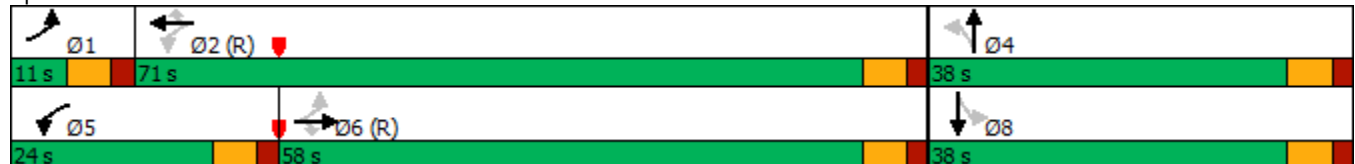
Actuated Cycle Length: 120

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 5: Mineral Avenue & Elati Street

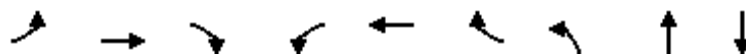


HCM 6th Signalized Intersection Summary
5: Mineral Avenue & Elati Street

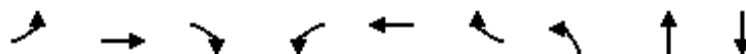
2045 Total PM_Mineral Place 3/4

11/13/2023

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1295	112	251	1373	32	244	5	253	33	5	108
Future Volume (veh/h)	37	1295	112	251	1373	32	244	5	253	33	5	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1378	119	267	1461	34	260	5	269	35	5	115
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	1540	687	353	1965	877	260	8	416	74	29	191
Arrive On Green	0.03	0.43	0.43	0.15	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1272	29	1560	140	110	718
Grp Volume(v), veh/h	39	1378	119	267	1461	34	260	0	274	155	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1272	0	1589	967	0	0
Q Serve(g_s), s	1.4	43.1	5.5	11.2	37.4	1.2	9.5	0.0	18.3	4.1	0.0	0.0
Cycle Q Clear(g_c), s	1.4	43.1	5.5	11.2	37.4	1.2	32.0	0.0	18.3	22.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	0.23		0.74
Lane Grp Cap(c), veh/h	199	1540	687	353	1965	877	260	0	424	295	0	0
V/C Ratio(X)	0.20	0.89	0.17	0.76	0.74	0.04	1.00	0.00	0.65	0.53	0.00	0.00
Avail Cap(c_a), veh/h	219	1540	687	353	1965	877	260	0	424	295	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.1	31.5	20.8	30.4	20.4	12.3	50.2	0.0	39.0	38.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	8.4	0.5	10.5	1.9	0.1	55.6	0.0	3.4	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	19.8	2.2	4.3	15.4	0.4	11.9	0.0	7.5	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.6	39.9	21.4	40.9	22.3	12.3	105.8	0.0	42.4	40.5	0.0	0.0
LnGrp LOS	C	D	C	D	C	B	F	A	D	D	A	A
Approach Vol, veh/h	1536			1762			534			155		
Approach Delay, s/veh	38.0			24.9			73.3			40.5		
Approach LOS	D			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	72.4		38.0	24.0	58.0		38.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	65.0		32.0	18.0	52.0		32.0				
Max Q Clear Time (g_c+l1), s	3.4	39.4		34.0	13.2	45.1		24.5				
Green Ext Time (p_c), s	0.0	13.2		0.0	0.3	5.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay				37.0								
HCM 6th LOS				D								



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	33	1248	95	69	853	55	171	65	17
v/c Ratio	0.07	0.55	0.09	0.23	0.36	0.05	0.74	0.21	0.06
Control Delay	6.2	14.4	3.5	8.9	11.8	3.2	65.8	14.1	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	14.4	3.5	8.9	11.8	3.2	65.8	14.1	29.7
Queue Length 50th (ft)	6	273	4	12	145	0	127	6	7
Queue Length 95th (ft)	19	410	29	47	288	18	192	43	27
Internal Link Dist (ft)		1549			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	450	2285	1051	315	2384	1093	324	421	372
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	0.55	0.09	0.22	0.36	0.05	0.53	0.15	0.05
Intersection Summary									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	16	1295	145	134	1346	28	266	128	137
v/c Ratio	0.07	0.70	0.17	0.55	0.62	0.03	0.87	0.27	0.33
Control Delay	10.7	25.5	8.7	26.6	17.8	0.8	69.8	9.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	25.5	8.7	26.6	17.8	0.8	69.8	9.0	16.5
Queue Length 50th (ft)	4	390	24	36	235	0	196	9	33
Queue Length 95th (ft)	14	534	66	125	392	m0	287	54	82
Internal Link Dist (ft)		1549			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	216	1855	868	260	2157	996	372	565	485
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	0.70	0.17	0.52	0.62	0.03	0.72	0.23	0.28

Intersection Summary

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

Queues

2045 Total AM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023

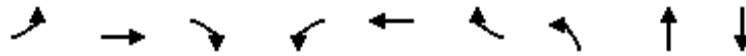
									
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	33	1327	95	69	910	55	171	65	17
v/c Ratio	0.08	0.58	0.09	0.25	0.38	0.05	0.74	0.21	0.06
Control Delay	6.2	14.7	3.3	10.6	14.2	5.1	65.8	14.1	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	14.7	3.3	10.6	14.2	5.1	65.8	14.1	29.7
Queue Length 50th (ft)	6	300	4	12	158	0	127	6	7
Queue Length 95th (ft)	19	432	28	62	397	31	192	43	27
Internal Link Dist (ft)		1549			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	423	2297	1056	274	2384	1093	324	421	372
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	0.58	0.09	0.25	0.38	0.05	0.53	0.15	0.05
Intersection Summary									

Queues

2045 Total PM_Elati Street 3/4

4: Mineral Avenue & Mineral Place

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	16	1379	145	134	1445	28	266	128	137
v/c Ratio	0.08	0.74	0.17	0.60	0.67	0.03	0.88	0.27	0.33
Control Delay	10.8	26.8	8.5	30.7	20.8	1.3	70.3	10.0	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	26.8	8.5	30.7	20.8	1.3	70.3	10.0	16.7
Queue Length 50th (ft)	4	438	24	46	283	0	195	12	33
Queue Length 95th (ft)	14	580	65	m131	480	m0	#307	58	83
Internal Link Dist (ft)		1549			785			373	199
Turn Bay Length (ft)	150		150	150		100			
Base Capacity (vph)	190	1857	869	238	2163	999	362	549	474
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	0.74	0.17	0.56	0.67	0.03	0.73	0.23	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

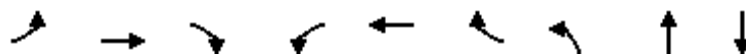
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2028 Total AM_Mineral Place 3/4

5: Mineral Avenue & Elati Street

11/13/2023



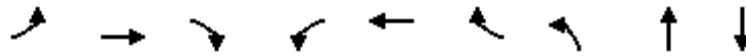
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	49	1191	98	154	935	60	174	143	74
v/c Ratio	0.12	0.56	0.10	0.47	0.41	0.06	0.74	0.37	0.27
Control Delay	7.0	16.8	1.2	15.5	10.1	0.8	65.5	9.4	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	16.8	1.2	15.5	10.1	0.8	65.5	9.4	23.1
Queue Length 50th (ft)	9	268	0	29	150	0	129	2	23
Queue Length 95th (ft)	26	431	12	97	183	7	193	54	62
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	402	2138	1010	393	2296	1055	331	490	379
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	0.12	0.56	0.10	0.39	0.41	0.06	0.53	0.29	0.20
Intersection Summary									

Queues

2028 Total PM_Mineral Place 3/4

5: Mineral Avenue & Elati Street

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	39	1293	119	267	1371	34	260	274	155
v/c Ratio	0.19	0.86	0.16	0.73	0.65	0.04	0.93	0.48	0.38
Control Delay	12.7	38.4	3.0	51.5	14.2	0.2	81.0	11.2	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	38.4	3.0	51.5	14.2	0.2	81.0	11.2	13.7
Queue Length 50th (ft)	11	469	0	151	425	0	191	30	23
Queue Length 95th (ft)	25	569	27	#297	236	m1	#341	105	81
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	201	1504	750	367	2098	971	307	597	429
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	0.19	0.86	0.16	0.73	0.65	0.04	0.85	0.46	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

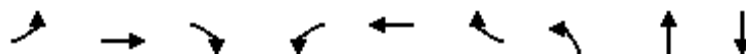
m Volume for 95th percentile queue is metered by upstream signal.

Queues

2045 Total AM_Mineral Place 3/4

5: Mineral Avenue & Elati Street

11/13/2023



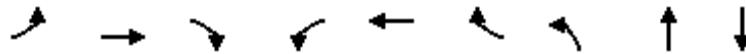
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	49	1267	98	154	994	60	174	143	74
v/c Ratio	0.13	0.59	0.10	0.50	0.43	0.06	0.76	0.37	0.27
Control Delay	6.9	17.1	1.1	17.2	10.3	0.9	67.5	9.7	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	17.1	1.1	17.2	10.3	0.9	67.5	9.7	23.6
Queue Length 50th (ft)	9	295	0	29	157	0	129	2	23
Queue Length 95th (ft)	25	455	12	109	205	7	198	55	63
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	380	2148	1014	361	2307	1060	308	466	355
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	0.13	0.59	0.10	0.43	0.43	0.06	0.56	0.31	0.21
Intersection Summary									

Queues

2045 Total PM_Mineral Place 3/4

5: Mineral Avenue & Elati Street

11/13/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	39	1378	119	267	1461	34	260	274	155
v/c Ratio	0.22	0.90	0.16	0.75	0.69	0.03	0.94	0.49	0.39
Control Delay	13.1	40.8	2.9	53.3	16.3	0.9	83.6	12.1	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	40.8	2.9	53.3	16.3	0.9	83.6	12.1	14.9
Queue Length 50th (ft)	11	511	0	170	366	0	193	34	26
Queue Length 95th (ft)	24	#624	26	#295	323	m1	#349	112	85
Internal Link Dist (ft)		785			974			159	319
Turn Bay Length (ft)	150		150	150		150			
Base Capacity (vph)	181	1533	763	357	2105	975	297	582	413
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	0.22	0.90	0.16	0.75	0.69	0.03	0.88	0.47	0.38

Intersection Summary

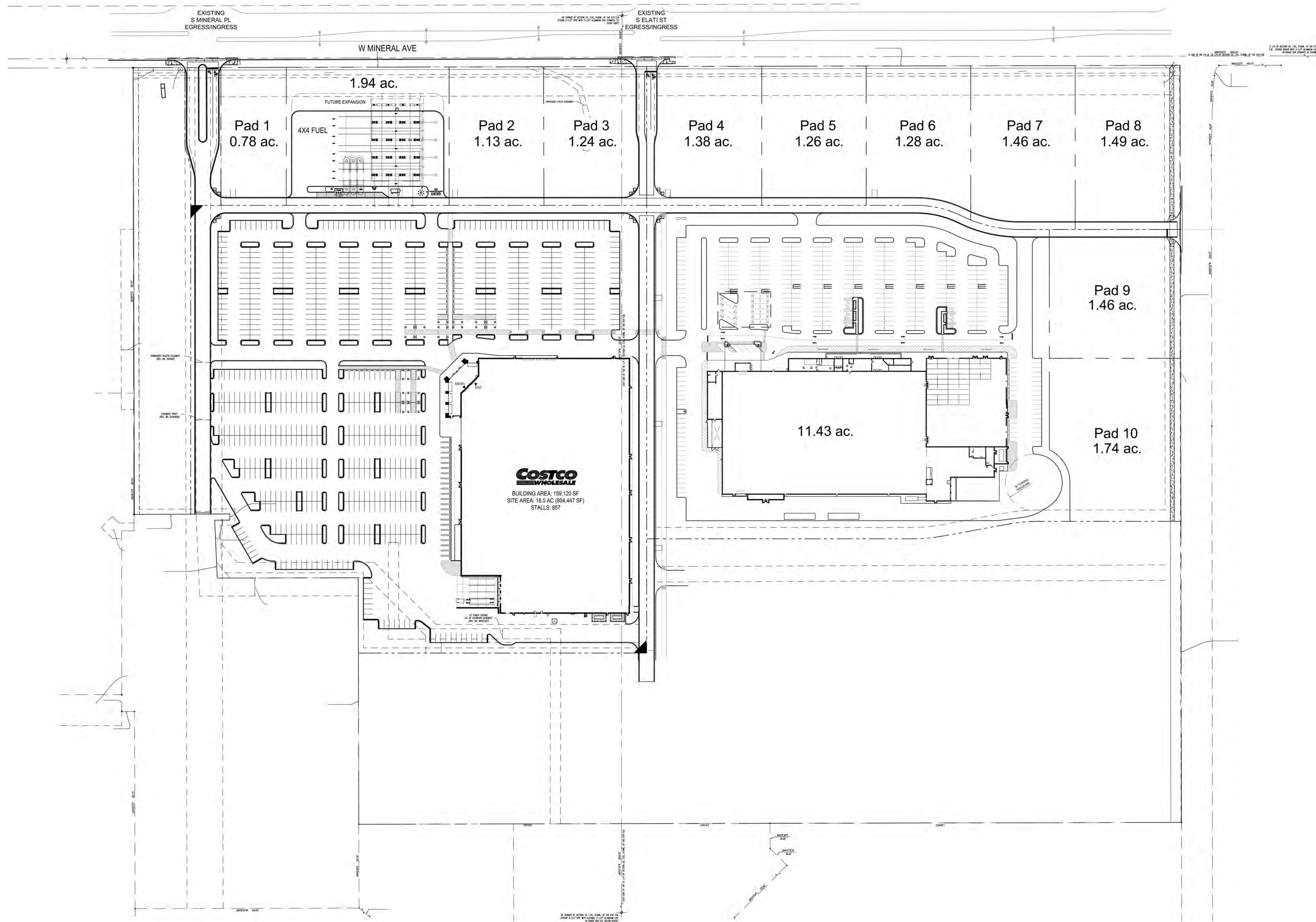
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

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

APPENDIX J

Conceptual Site Plan



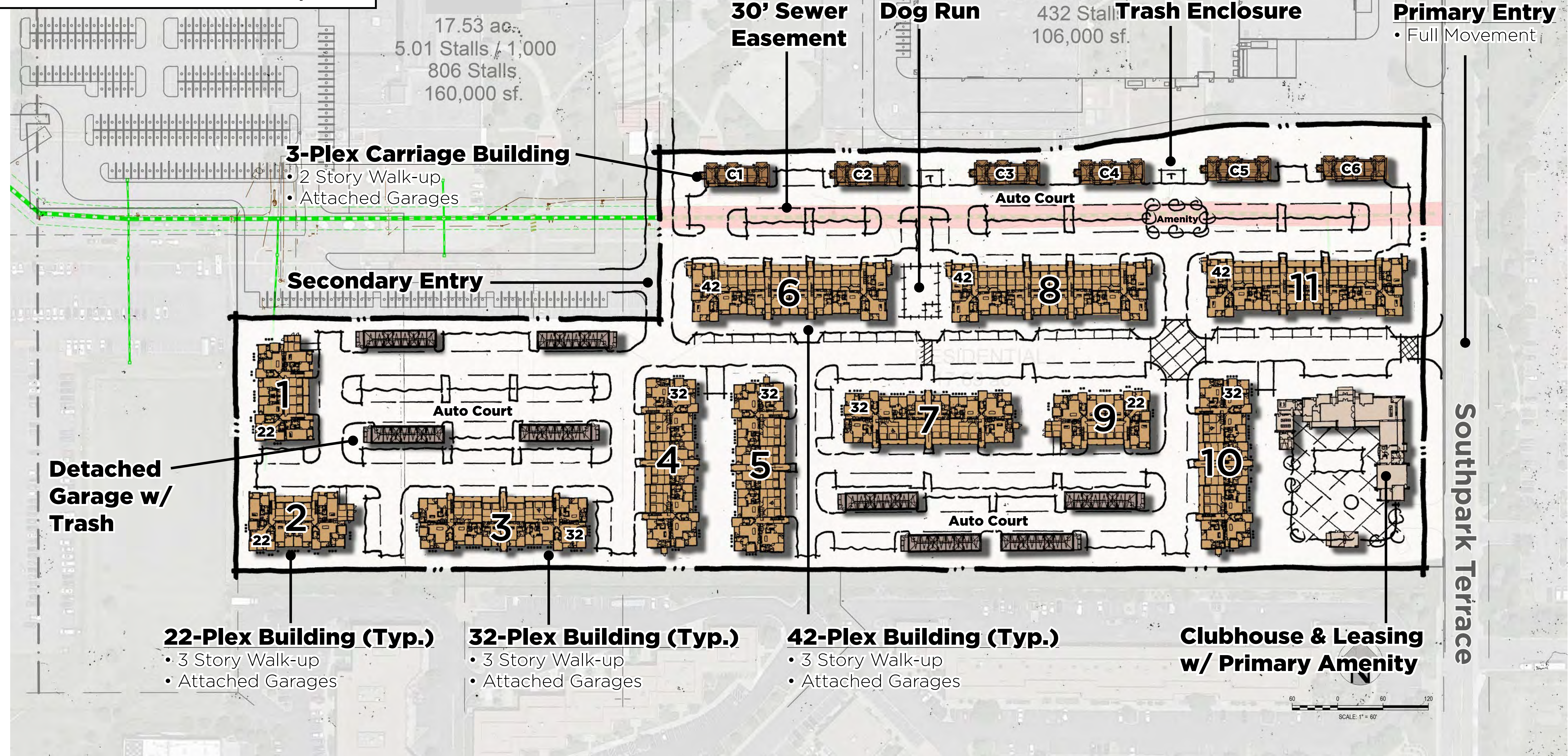
A

Mineral Conceptual Site Plan

1.24.24

STACKlot

Site Acreage	17.4	Ac
# of Units	370	Du
Density	21.3	Du/Ac
Parking Ratio	1.98	Sp/Du



WEST MINERAL APARTMENTS

Littleton, CO

7.24.2023

KA# 222112