

Transportation Impact Study

Coal Creek Village Louisville, Colorado



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Transportation Impact Study for Coal Creek Village

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1.0 Project Description

Coal Creek Village is a proposed residential development in Louisville, located southwest of the intersection of South Boulder Road and Colorado State Highway 42, as shown in **Figure 1**. The conceptual site plan for the development is shown in **Figure 2**. A full-size copy of the site plan is included in **Appendix B**. The existing commercial parcels north and east of Cannon Circle are not part of the development.

The existing building located at the northwest corner of the property was demolished in 2022. A coffee shop was also in operation during Year 2022. However, the coffee shop was converted to an Empanada Shop that is in operation to date. Two proposed buildings on the north side of the property, adjacent to South Boulder Road, will be mixed use with commercial space on the ground floor and residential above. The development is proposing the following land uses:

Table 1: Coal Creek Village Land Use

Land Use Category	Qty	Units
Single Family Houses	92	Dwelling Units
Low-Rise Multifamily Housing	48	Dwelling Units
Residential portion of mixed-use buildings	48	Dwelling Units
Commercial area of mixed-use buildings	13,510	square feet
Coffee Shop	400	square feet

Figure 1: Vicinity Map

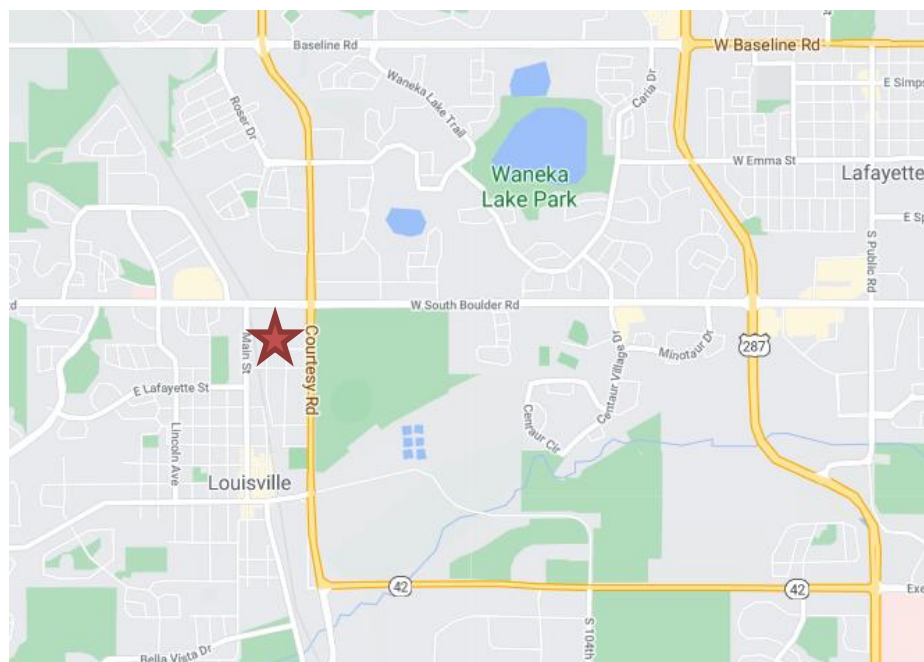
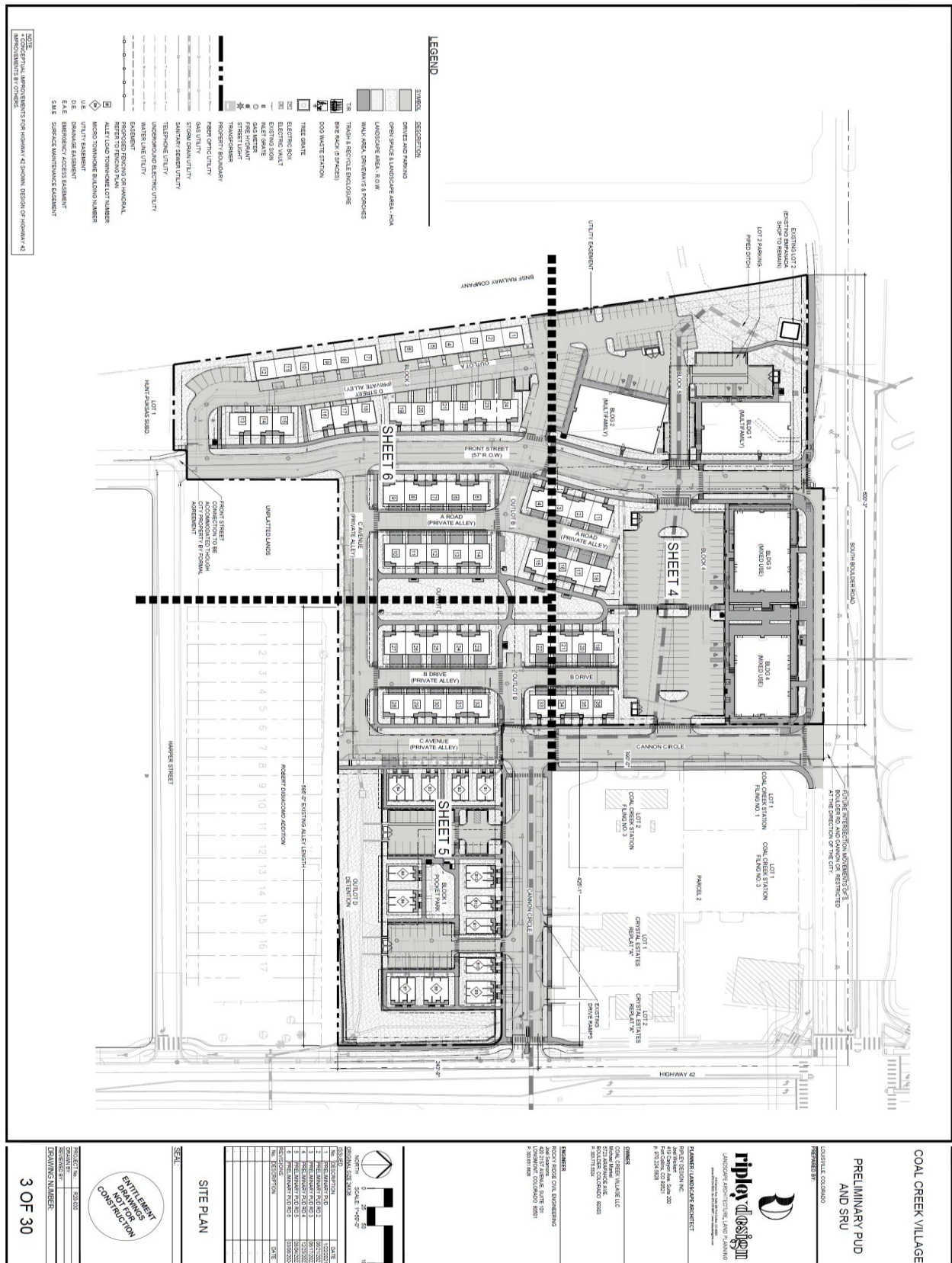


Figure 2: Conceptual Site Plan



1.1 Previous Capitol Improvements and Studies

The City of Louisville has made changes to the configuration of the South Boulder Road and Front Street intersection. The City of Louisville restricted northbound and southbound left turns in Summer 2022.

The City of Louisville completed *Future 42*⁹, a SH 42 corridor study, in December 2022. The study recommend improvements to the intersection of South Boulder Road and SH 42 as well as the SH 42 corridor that may impact construction of walk/detention pond/retaining wall at southwest corner of Cannon Circle. Refer to an excerpt in **Appendix F**.

The *City of Louisville Transportation Master Plan*¹⁰ identifies recommended improvements for the South Boulder Road corridor. Key considerations were bus rapid transit, improvements to bus stops and frequency of transit service, eliminating right-turn lanes, and providing underpasses and at-grade pedestrian crossings. Refer to an excerpt in **Appendix G**.

The City of Louisville also prepared a *South Boulder Road Corridor Evaluation*¹¹. This analysis determined that signalization is not appropriate at Cannon Circle due to spacing constraints to the SH 42 traffic signal. Therefore, pedestrian and signage improvements at the Canon Circle intersection were recommended. Additionally, the Commercial Driveway extension to the north was suggested as alternative roadway connection.

1.2 Project Access Locations

The new Coal Creek Village is proposing to have four access locations. Three of the four accesses exist, and the fourth access will need to be constructed. Two accesses will have direct connectivity to South Boulder Road, one access will have direct connectivity to State Highway 42, and the fourth access will have direct connectivity to Harper Street. The four accesses are listed below, refer to the site plan in **Figure 2**.

1. Front Street and South Boulder Road
2. Cannon Circle and South Boulder Road
3. Cannon Circle and State Highway 42
4. Front Street and Harper Street

1.3 Intersection Analysis Locations

In addition to the four proposed site accesses, this report also studies one additional off-site intersection:

1. State Highway 42 & South Boulder Road

2.0 Existing Conditions

2.1 Description of Existing Transportation System

Colorado State Highway 42: SH 42 is a north/south major arterial street that is classified as an NR-A roadway by CDOT's *Online Transportation Information System*¹ (OTIS). Within the City of Louisville, the local street name is Courtesy Road. It is a four-lane street with auxiliary lanes north of South Boulder Road and narrows to a two-lane street with auxiliary lanes south of the development site. The posted speed limit is 45 mph in both directions in the vicinity of the site. There is a southbound bike lane on the segment of the highway adjacent to this development.

South Boulder Road: South Boulder Road is a four-lane east/west major arterial street with auxiliary lanes at some intersections. It is owned and operated by the City of Louisville. The speed limit is 35 mph in both directions in the vicinity of the site. There are bike lanes on both sides of the road.

Front Street: Front Street is a two-lane north/south local residential street. As a residential street within the City of Louisville, its speed limit is 25 mph.

Within the development, Front Street will be a dedicated public street replacing the south driveway and connecting to the existing street to the south.

Cannon Circle: Cannon Circle is a local street that loops around the west and south sides of the commercial properties at the southwest corner of SH 42 and South Boulder Road. A portion of the street has not been constructed. The north-south segment extends 290 feet south from South Boulder Road. The east-west segment extends 200 feet west from SH 42.

South Boulder Road and Front Street Intersection: This intersection serves a private driveway to an apartment complex to the north and a commercial driveway to the south. In the Summer of 2022, the City of Louisville made changes to the configuration of the South Boulder Road and Front Street intersection. The City of Louisville restricted northbound and southbound left turns.

South Boulder Road and Cannon Circle intersection: This full-movement intersection currently serves a commercial driveway to the north and Cannon Circle to the south. This intersection has two auxiliary turn lanes: westbound left and eastbound left.

South Boulder Road and SH 42 intersection: This is a full-movement, signalized intersection. The intersection is owned by CDOT and maintained by the City of

¹ Colorado Department of Transportation, Online Transportation Information System.

Louisville. There are double left-turn lanes on all four legs of the intersection. There are westbound and southbound right-turn lanes.

SH 42 and Cannon Circle intersection: This is a full-movement “T” intersection. This intersection has a single auxiliary turn lane: northbound left. Southbound SH 42 is two lanes wide through the intersection. Northbound SH 42 has a single through lane approaching the intersection, then widens to two lanes departing the intersection. The intersection has one auxiliary turn lane: northbound left. Per the Future 42 Plan, the TIS assumes that eastbound left turns out of Cannon Circle are restricted. This assumption is referenced in the revised TIS.

2.2 Traffic Data Collection

Existing Traffic Volumes: Weekday morning peak hour turning movement counts were collected on Thursday, November 3, 2022, from 7:00 – 9:00am. Weekday evening peak hour turning movement counts were collected on Tuesday, November 08, 2022, from, 4:00 – 6:00 pm. Saturday mid-day peak hour turning movement counts were collected on Saturday, November 5, 2022. Counts were collected at the following intersection only:

- South Boulder Road and SH 42

The November 2022 count data was extrapolated and prorated to other adjacent intersections’ previous traffic counts. Traffic counts from the previous 2021 TIS were compared to the counts taken in 2022. The previous 2021 TIS collected weekday morning and evening peak hour turning movement counts on Thursday, August 13, 2020. Saturday mid-day peak hour turning movement counts were collected on Saturday, August 15, 2020, as well. The weekday turning movement counts were collected from 7:00 to 9:00 am and 4:00 to 6:00 pm. The Saturday turning movement counts were collected from 11:00 am to 1:00 pm. The weather was clear. Counts were collected at the following intersections:

- South Boulder Road and Front Street
- South Boulder Road and Cannon Circle
- South Boulder Road and SH 42
- SH 42 and Cannon Circle

A traffic growth rate can be calculated by comparing the 2020 and 2022 traffic volumes at the South Boulder Road and SH 42 intersection. The growth rate can then be applied to the 2020 traffic volumes at the other three intersections where traffic counts were not taken during the 2022 traffic collection. This allows estimated Year 2022 traffic volumes at the intersections where traffic counts were not collected.

This calculated growth rate was applied to through traffic on South Boulder Road and SH 42 only. It was assumed that turns into and out of the commercial and residential

driveways remained the same. This assumption was made due to those properties being fully developed with no practical changes in development and growth between 2020 and 2022.

The adjusted existing Year 2022 traffic volumes are shown in **Figure 3**. The Year 2022 and Year 2020 traffic counts are included in **Appendix C**.

2.3 Future Infrastructure Improvements in Study Area

South Boulder Road Access Plan: The City of Louisville completed a *South Boulder Road Corridor Evaluation*¹¹. The resulting recommendations determined that signalization is not appropriate at Cannon Circle due to spacing constraints to the SH 42 traffic signal. Therefore, pedestrian and signage improvements at the Canon Circle intersection were recommended. Refer to an excerpt in **Appendix G**.

Figure 3: Year 2022 Existing Adjuted Traffic



1 9/12/7 6/5/3 1,026/1,219/1,038 3/5/12 2/1/3 738/1,254/978 1/7/10 2/12/25	2 23/31/50 0/1/1 18/36/23 10/11/7 1,000/1,131/968 1/14/26 3/2/3 8/29/3 26/26/36 698/1,208/956 6/11/10 1/10/9 0/3/1 6/7/12
--	---

LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements 

3.0 Future Traffic Projections

3.1 Traffic Adjustments

The existing traffic counts are used to determine the background traffic volumes with some adjustments. When the development's street system is constructed, it is expected that some of the existing adjacent properties will use the development streets rather than their historical routing. Other existing traffic patterns will also change, as described below.

- Front Street and South Boulder Road intersection Traffic Adjustments: The City of Louisville has made changes to the configuration of the South Boulder Road and Front Street intersection. The City of Louisville restricted northbound and southbound left turns in Summer 2022. Additionally, eastbound left turns have been removed as well.

For this analysis, the modified traffic pattern was applied to the existing traffic counts to reflect the access restrictions. All southbound left turns, northbound left, and eastbound left turns from the traffic counts at the Front Street and South Boulder Road intersection were re-routed through nearby intersections so that they complied with the restrictions at the Front St and S Boulder Rd intersection.

Traffic adjustments made for the restrictions at the Front St and S Boulder Rd intersection and are shown in **Figure 4**. These traffic adjustments were applied to the Year 2022 traffic counts.

An automotive repair shop was located on the northwest corner of the Front St and S Boulder Rd intersection. This property had most recently been an automotive repair shop. However, that business has closed. The automotive shop was in operation when the traffic counts were taken. Therefore, the traffic counts include the traffic generated by the automotive shop that is no longer in operation. This land parcel remains empty in Year 2024.

- **Cannon Circle & S Boulder Rd:** This intersection does not have any movement restrictions. However, future northbound left and southbound left and through restrictions at this intersection were assumed based on anticipated failing LOS on the north and south legs (see **Table 5** and **Table 8**). These restrictions were only applied to short-term Year 2029 total and long-term Year 2050 total traffic conditions. The northbound and southbound left and through traffic volumes at this intersection were re-routed through nearby intersections. **Figure 5**, shows the traffic adjustments made at this intersection.

- Cannon Circle & SH 42: This intersection does not currently have any movement restrictions. However, future northbound left and eastbound left restrictions at this intersection were assumed based on discussions with the City staff. This intersection will be converted to a right-in right-out (RIRO) in the future. These restrictions were only applied to long-term background and total traffic conditions. The existing northbound left and eastbound left traffic volumes were re-routed through nearby intersections. **Figure 6**, shows the traffic adjustments made at this intersection. These restrictions were made due to the anticipated delays that eastbound left and northbound right turns will create. Removing eastbound left turns out of the intersection will help prevent vehicle queues from reaching and blocking the access/driveway for the businesses located northwest of the intersection.
- Existing residential properties south of Coal Creek Village: When Front Street is constructed through the Coal Creek Village development it will provide a more direct route to South Boulder Road for some of the residential properties south of the development. The number of single-family homes assumed to use Front Street to and from the various directions are:
 - South Boulder Road from the west – 26 single family homes
 - South Boulder Road to the east – 15 single family homes (A right turn onto South Boulder Road will be easier than a left turn onto SH 42.)
 - SH 42 to the north – 15 single family homes (A right turn onto South Boulder Road will be easier than a left turn onto SH 42.)

Table 2 below shows the intersection control assumptions that were made based on conversations with City staff.

Table 2: Intersection Control Assumptions

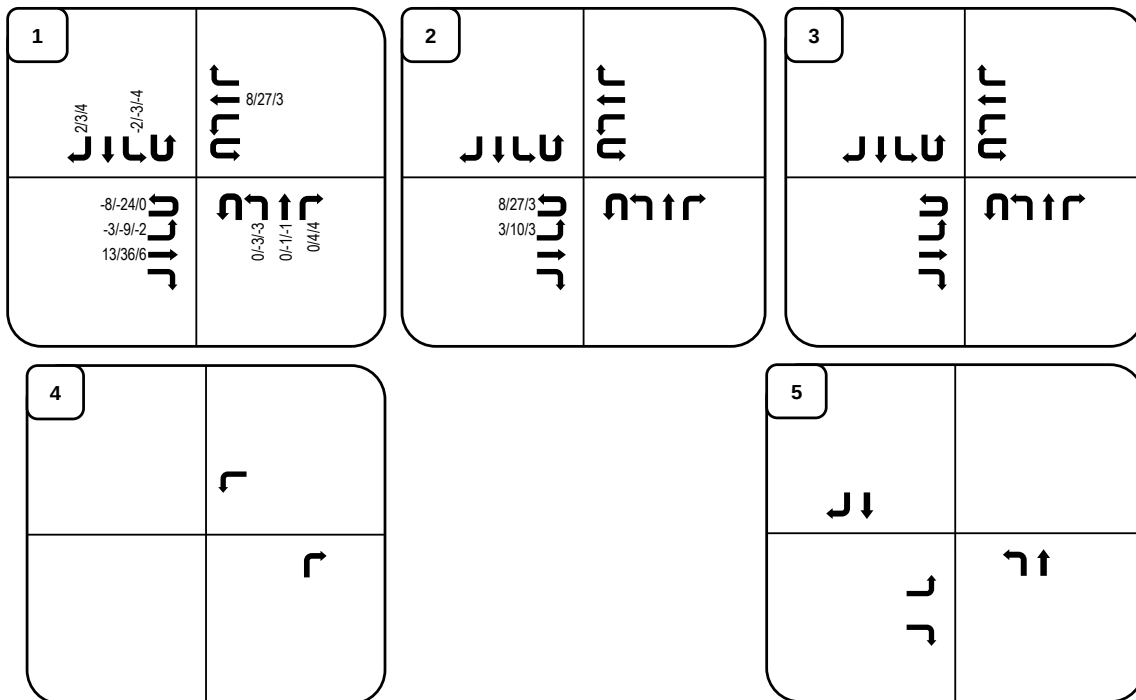
#	Intersection	Year 2022 Existing	Year 2024 BG	Year 2045 BG	Year 2024 Total	Year 2045 Total
#1	Front St & S. Boulder Rd	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement	3/4 Movement
#2	Cannon Circle & S. Boulder Rd	Full Movement	Full Movement	Full Movement	3/4 Movement	3/4 Movement
#2	Courtesy Rd & S. Boulder Rd	Existing Conditions	Existing Conditions	Future 42 Layout	Existing Conditions	Future 42 Layout
#4	Front St. & Harper St.	Full Movement ¹	Full Movement ¹	Full Movement ¹	Full Movement ²	Full Movement ²
#5	Cannon Circle & Courtesy Rd. (SH 42)	Full Movement	Full Movement	RIRO ³	Full Movement	RIRO ³

Notes: ¹Not Stop Controlled (Free Flowing)

²Westbound Stop Controlled

³RIRO = Right-In-Right-Out

Figure 4: Front St & S Boulder Rd Traffic Adjustments



LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

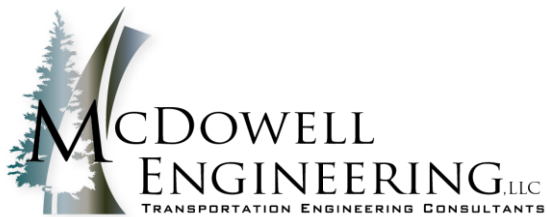
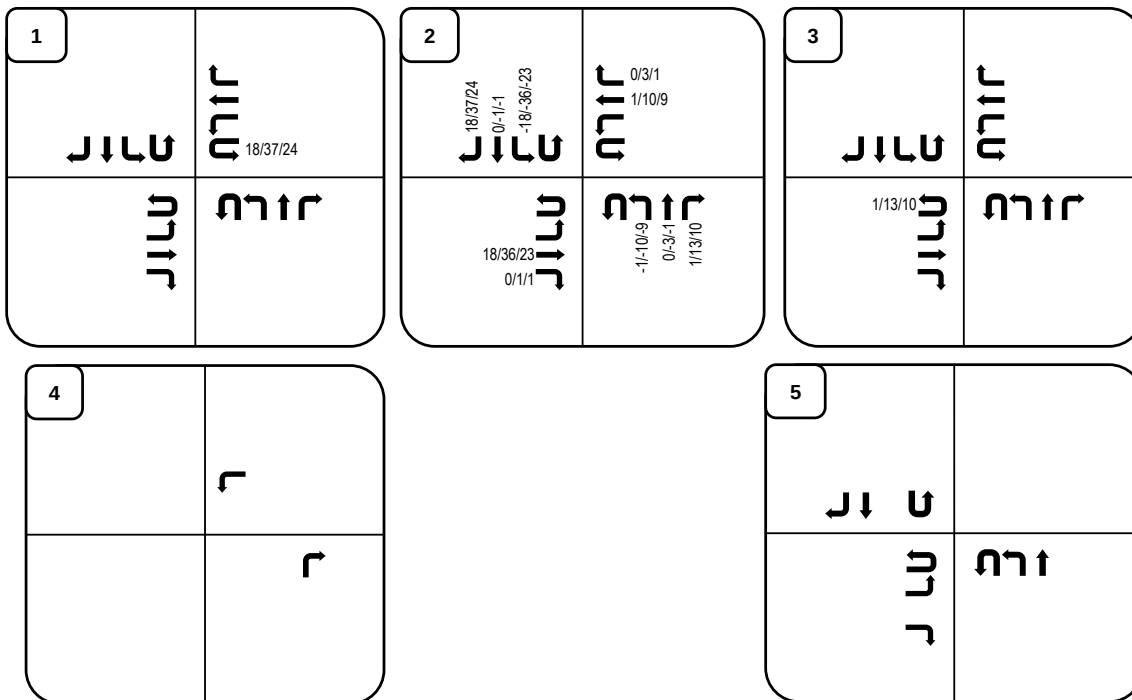
Turning Movements

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5/6/2024

Figure 5: Cannon Circle & S Boulder Rd Traffic Adjustments



LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements

Project Number

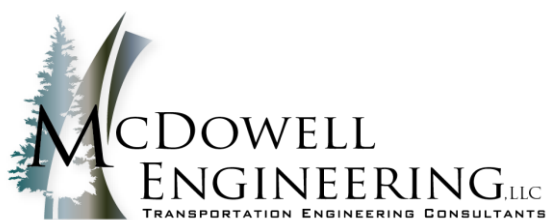
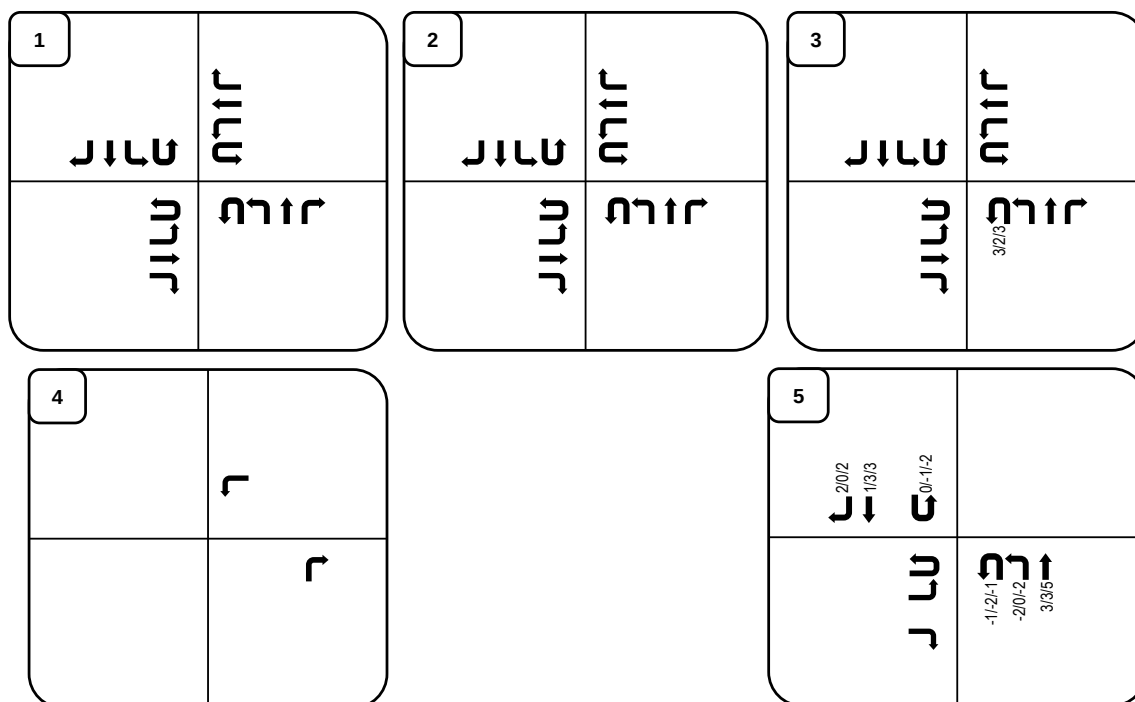
Prepared By

M1475

EP

5/6/2024

Figure 6: Cannon Circle & SH 42 Traffic Adjustments



LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements

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Project Number

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5/6/2024

3.2 Background Traffic Growth

Long-term background growth was based upon the 20-year factor for SH 42 as published in the CDOT's *OTIS*². The 20-year factor is 1.23 which equates to an annual growth rate of 1.04% per year.

Growth factors for South Boulder Road and Main Street were derived from the traffic volume projections for 2020 and 2050 published by the *Denver Regional Council of Governments*² (DRCOG).

Table 3: Traffic Growth Rates

Road Segment	2020 Projected ADT	2050 Projected ADT	Growth Rate Per Year
S Boulder Rd – West of SH 42	29,000	44,000	1.40%
S Boulder Rd – East of SH 42	25,000	36,000	1.22%
SH 42 – North of South Boulder Road	19,000	27,000	1.18%
SH 42 – South of South Boulder Road	12,000	16,000	0.96%

All properties served by the driveways on the north side of South Boulder Road are assumed to be built out. Therefore, no growth rate was applied to them.

3.3 Background Traffic

The total background traffic is the combination of the 2022 existing traffic volumes times the growth rate per year plus the background traffic adjustments. The resulting projected Year 2029 and Year 2050 background traffic volumes can be seen in **Figure 7** and **Figure 8**, respectively.

² Denver Regional Council of Governments, 2020 & 2050 Model Assigned All-Day Volumes. August 2022.

Figure 7: Year 2029 Background Traffic



1 9/12/7 813/1,382/1,078 1/7/10 6/5/3 1,131/1,344/1,144 3/5/12 2/1/3 2/12/25	2 23/31/50 0/1/1 18/36/23 8/29/3 26/26/36 769/1,331/1,054 6/11/10 10/11/7 1,102/1,247/1,067 1/14/26 3/2/3 1/10/9 0/3/1 6/7/12	3 385/333/278 584/603/410 149/197/107 3/6/4 0/0/0 294/514/308 416/692/477 150/152/99 151/147/100 690/638/532 270/292/282 0/0/0 0/4/1 182/161/95 461/708/373 219/279/200
4 10/12/12 10/12/12	5 0/1/1 808/1,168/942 0/1/2 0/0/0 3/1/5 1/2/1 2/0/2 724/1,129/836	

LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements 

Figure 8: Year 2050 Background Traffic



1 9/12/7 6/5/3 1,514/1,799/1,532 3/5/12 2/1/3 1,089/1,851/1,443 1/7/10 2/12/25	2 23/31/50 0/1/1 18/36/23 10/11/7 1,476/1,669/1,429 1/14/26 3/2/3 8/29/3 26/26/36 1,030/1,783/1,411 6/11/10 1/10/9 0/3/1 6/7/12
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LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements 

3.4 Background Traffic Level of Service

Using *Highway Capacity Manual*³ (HCM) methodology, Synchro Version 10 software was used to determine the delay and Level of Service (LOS.) HCM LOS is defined by the following criteria:

Table 4: HCM Level of Service Criteria

LOS	Expected Delay to Minor Street Traffic	Average Signal Delay (Seconds/Vehicle)	Average Stop-Controlled Delay (Seconds/Vehicle)
A	Little or no delay.	0-10	0-10
B	Short traffic delays.	>10-20	>10-15
C	Average traffic delays.	>20-35	>15-25
D	Long traffic delays.	>35-55	>25-35
E	Very long traffic delays.	>55-80	>35-50
F	When volume exceeds the capacity of the lane extreme delays will be encountered with queuing that may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improving the intersection.	>80	>50

Table 5 shows the resulting LOS as determined by HCM analysis. The Synchro reports for the background level of service analysis can be found in **Appendix E**.

³ Highway Capacity Manual, 6th Edition. Transportation Research Board, 2016.

Table 5: Background Traffic Level of Service

#	Int.	Traffic Control	Approach	Year 2022 Existing Level of Service (Delay in Seconds)			Year 2029 Background Level of Service (Delay in Seconds)			Year 2050 Background Level of Service (Delay in Seconds)		
				AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
1	Front Street & S. Boulder Road	3/4 Mvmnt.	Overall	A (0.1)	A (0.1)	A (0.3)	A (0.1)	A (0.1)	A (0.2)	A (0.1)	A (0.1)	A (0.2)
			EB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
			WB	A (0.1)	A (0.1)	A (0.2)	A (0.1)	A (0.1)	A (0.2)	A (0.0)	A (0.1)	A (0.2)
			NB	B (11.0)	B (14.5)	B (12.7)	B (11.4)	C (15.6)	B (13.4)	B (13.1)	C (20.9)	C (16.7)
			SB	B (12.8)	B (14.2)	B (12.8)	B (13.5)	C (15.3)	C (16.5)	C (16.8)	C (20.3)	C (16.9)
2	Cannon Circle & S. Boulder Road	NB/SB Stop	Overall	A (0.9)	A (9.1)	A (2.6)	A (1.0)	C (18.7)	A (3.6)	A (2.7)	C (18.7)	D (26.3)
			EB	A (0.6)	A (0.9)	A (0.4)	A (0.6)	A (0.9)	A (0.4)	A (0.7)	A (1.6)	A (0.4)
			WB	A (0.0)	A (0.2)	A (0.3)	A (0.0)	A (0.2)	A (0.3)	A (0.0)	A (0.2)	A (0.3)
			NB	C (16.0)	F (270.3)	F (59.7)	C (17.9)	F (540.9)	F (86.0)	D (30.6)	F (5037.0)	F (543.3)
			SB	E (43.9)	F (619.3)	F (76.3)	F (61.6)	F (1210.0)	F (136.5)	F (307.2)	F (NA)	F (994.1)
3	Courtesy Road (SH 42) & S. Boulder Road	Signal	Overall	D (43.7)	E (73.3)	D (40.1)	C (35.0)	F (84.4)	D (42.1)	F (81.0)	F (118.2)	D (50.8)
			EB	D (42.8)	F (86.1)	D (44.9)	D (45.0)	F (105.0)	D (47.1)	D (49.7)	F (164.6)	E (56.3)
			WB	D (40.8)	D (40.9)	D (41.0)	D (42.5)	D (42.5)	D (42.2)	E (55.1)	D (53.4)	D (49.2)
			NB	D (37.5)	E (71.9)	D (37.3)	D (38.9)	F (82.8)	D (39.6)	F (143.5)	F (98.8)	D (44.9)
			SB	D (51.9)	F (90.2)	D (36.3)	E (58.3)	F (101.2)	D (38.7)	F (84.1)	F (142.2)	D (51.4)
4	Front Street & Harper Street	WB Stop	Overall	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
			WB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
			NB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
5	Cannon Circle & Courtesy Road (SH 42)	EB Stop	Overall	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	-	-	-
			EB	B (11.1)	B (13.0)	B (11.8)	B (11.4)	B (13.6)	B (12.2)	-	-	-
			NB	A (0.1)	A (0.0)	A (0.0)	A (0.1)	A (0.0)	A (0.0)	-	-	-
			SB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	-	-	-
5	Cannon Circle & Courtesy Road (SH 42)	RIRO	Overall	-	-	-	-	-	-	A (0.0)	A (0.0)	A (0.0)
			EB	-	-	-	-	-	-	B (12.5)	C (15.8)	B (13.7)
			NB	-	-	-	-	-	-	A (0.0)	A (0.0)	A (0.0)
			SB	-	-	-	-	-	-	A (0.0)	A (0.0)	A (0.0)

As can be seen in **Table 5**, intersections #1, #2, #4, and #5 are anticipated to operate at acceptable overall intersection LOS through the background long-term planning horizon Year 2050. However, intersection #3 is anticipated to operate below an overall intersection LOS through the long-term planning horizon Year 2050. Although intersection #2 is anticipated to operate at an overall acceptable LOS, the north and south legs are anticipated to operate at a failing LOS.

Front Street & South Boulder Road: This intersection is anticipated to operate at an acceptable LOS C or better on all legs through Year 2050 background traffic conditions. This intersection is anticipated to operate at an overall intersection LOS A through Year 2050 background traffic conditions.

Cannon Circle & South Boulder Road: This intersection is anticipated to operate at an overall acceptable LOS through Year 2050 background traffic conditions. However, the north and south legs are anticipated to operate at a failing LOS F with Year 2022 existing traffic conditions.

Mainline South Boulder Road is anticipated to operate at an acceptable LOS A through Year 2050 background traffic conditions. However, as traffic continues to increase on South Boulder Road, the available gaps in traffic for vehicles wanting to turn left from the side streets (north and south legs) onto mainline will continue to decrease over time, resulting in a failing LOS for the side streets.

Eventually, the City may consider restricting movements at this access. There is not an industry standard for when a left-turn restriction should be imposed. It is at the discretion of the City and is typically based on the levels of congestion or the number of crashes.

SH 42 & South Boulder Road: This intersection is anticipated to operate at an overall failing LOS E with Year 2022 existing traffic conditions. This intersection has below acceptable LOS due to the high traffic volumes it handles. The current traffic volumes are too high to be flushed out of the intersection within one cycle. This causes vehicles to wait in queue for more than one cycle.

LOS on the north and south legs are slightly better than on the east and west legs. This is due to the north and south legs having a longer green time. The current signal timing gives priority to traffic on the north and south legs. Front Street & Harper Street: This intersection is anticipated to operate at an acceptable LOS A through Year 2050 background traffic conditions on all legs.

SH 82 & Cannon Circle: This intersection is anticipated to operate at an acceptable LOS B or better through Year 2050 background traffic conditions on all legs.

As can be seen in **Table 5**, this intersection is proposed to be restricted to right-in and right-out (RIRO) in the long-term Year 2050 horizon. This is due to the anticipated delays and queues vehicles making a left turn into or out of the intersection will experience. **Table 5** currently shows an acceptable LOS on all legs in the short-term Year 2029 when there are no restrictions to left turns. However, this is because there are no traffic volumes making an eastbound left turn at this intersection (see **Figure 7**). If 15 vehicles per hour were to make an eastbound left turn at this intersection, then the west leg is anticipated to operate at a failing LOS E with Year 2022 existing traffic volumes. Therefore, eastbound left and northbound left restrictions are recommended to prevent a failing LOS on the west leg with long delays and queues.

4.0 Project Traffic

4.1 Trip Generation

The Institute of Transportation Engineers' (ITE) 11th Edition of the Trip Generation Manual⁴ (*Trip Generation Manual*) was used to determine the anticipated trip generation for the Coal Creek Village development. Site-generated traffic volumes were determined for the weekday a.m. peak hour, the weekday p.m. peak hour, and the Saturday midday peak hour.

The trip generation analysis used following ITE Land Uses:

ITE Code	Land Use Category	Size	
210	Single Family Detached Housing	92	Dwelling Units
220	Multifamily Housing (Low-Rise)	96	Dwelling Units
822	Strip Retail Plaza (<40K)	13.5	1000 Sq. Ft. GLA*
936	Coffee/Donut Shop without Drive-Through	0.4	1000 Sq. Ft. GFA*

GLA = Gross Leased Area

GFA = Gross Floor Area

As per ITE's *Trip Generation Handbook*⁵ methodology, the trip generation regression equations and average rates were used for each of the land use codes were utilized as part of this analysis.

As previously mentioned, the coffee shop that was in operation during Year 2022 has been closed and converted to an Empanada shop. The *Trip Generation Manual* does not have a land use code for an Empanada shop. Therefore, the coffee shop land use #936 was used to estimate the trips generated by the current Empanada shop.

Multimodal Reduction: A five percent (5%) multimodal reduction was applied to all the land uses. The development is within walking and biking distance to Louisville Middle School, Fairview Montessori School, the Louisville Sports Complex and various commercial facilities. There are bike lanes on South Boulder Road and on SH 42. There are bus stops for the RTD DASH Route adjacent to the development on South Boulder Road.

Internal Capture: The ITE *Trip Generation Handbook*⁶ was used to determine the internal capture reductions for the proposed residential and commercial developments. Internal reduction calculations for the average weekday, AM peak hour, and PM peak hour are included in **Appendix H**. Data for the Saturday peak hour was not available. Therefore, the internal reductions rates for the PM peak hour were used for the Saturday peak hour.

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

⁵ Trip Generation Handbook, 3rd Edition. Institute of Transportation Engineers, 2017.

⁶ Trip Generation Handbook, 2nd Edition. Institute of Transportation Engineers, 2004.

Pass-by Trip Reduction: Commercial land uses typically have a fair amount of pass-by traffic. This is traffic that was already traveling on the adjacent road, stops to patronage the commercial use, and continues on their way to their original destination. Pass-by and non-pass-by traffic is described in detail in **Section 4.3** and **Section 4.4**, respectively. The ITE *Trip Generation Handbook*⁵ does not contain pass-by trip reductions for land use #822. Therefore, the pass-by trip reduction for LUC #820 was used because land use #820 and #822 have similar traffic patterns.

Project Trip Generation: The proposed development is expected to generate a total of 1,883 new trips on the adjacent roadway network over the course of an average weekday. This includes 53 inbound and 119 outbound trips during the morning peak hour. The evening peak hour is expected to generate 147 new inbound and 96 new outbound trips. The Saturday midday peak hour is expected to generate 83 new inbound and 75 new outbound trips. Refer to **Table 6** for trip generation calculations and further breakdown of these trips.

Table 6: Project Trip Generation

ITE Trip Generation Equation ³								Average Weekday	Morning Peak Hour		Evening Peak Hour		Saturday Peak Hour		
ITE Code	Units ²		Eq. Coef	Avg. Weekday	AM Peak Hour	PM Peak Hour	Sat. Peak Hour	Trips (VPD)	% Trips	Trips	% Trips	Trips	% Trips	Trips	
Existing Land Use (Demolished in Year 2023 but was operational during Year 2020 & 2022 Traffic Counts) For informational purposes only.															
#942 - Automobile Care Center	7.5	kSF	Type a= b=	Rate 28.33	Rate 2.83	Rate 3.51	Rate 3.51	212	56%	12	44%	10	49%	13	
								212	12	10	13	13	13		
Existing Trips (Demolished Building)								212	12	10	13	13	13		
Existing Land Use (To Remain) For informational purposes only.															
#936 - Coffee/Donut Shop without Drive-Through	0.4	kSF	Type a= b=	Rate 329.90	Rate 96.43	Rate 32.99	Rate 56.50	132	51%	20	49%	19	50%	7	
Multi-Modal Reduction	-5%							-7	-1	-1	0	0	-1	-1	
Existing Trips (Coffee Shop) Included in existing traffic counts.								125	19	18	7	7	10		
Proposed Residential Land Use															
#210 - Single Family Detached Housing	92	DU	Type a= b=	B 0.92 2.68	A 0.71 7.23	B 0.93 0.36	A 0.86 9.72	935	26%	19	74%	54	64%	61	
#220 - Multifamily Housing (Low-Rise)	96	DU	Type a= b=	A 6.41 75.31	A 0.35 28.13	A 0.42 34.78	Rate 0.41	691	24%	15	76%	47	62%	47	
Multi-Modal Reduction	-5%							-81	-2	-5	-5	-3	-3	-3	
Vehicular Trips								1,545	32	96	103	61	65		
Internal Capture Reduction ⁵								-89	-5	-3	-10	-9	-6	-5	
Residential Vehicular Trips								1,456	27	93	93	52	59		
Proposed Non Residential Land Use															
#822 - Strip Retail Plaza (<40K)	13.5	kSF	Type a= b=	A 42.20 229.68	Rate 7.60	Rate 13.24	Rate 6.57	799	50%	51	50%	51	54%	97	
Multi-Modal Reduction	-5%							-40	-3	-3	-5	-4	-2	-2	
Vehicular Trips								759	48	48	92	78	43		
Internal Capture Reduction ⁵								-112	-8	-9	-10	-11	-6	-7	
External Vehicular Trips								647	40	39	82	67	37		
Passby Reduction ⁴	-34%							-220	-14	-13	-28	-23	-13	-12	
External Non-Passby Vehicular Trips								427	26	26	54	44	24		
Non Residential: External Non-Passby Trips								427	26	26	54	44	24		
Total Passby Trips								220	14	13	28	23	13		
Total External Non-Passby Trips								1,883	53	119	147	96	83		

Notes:

¹ Values obtained from *Trip Generation, 11th Edition*, Institute of Transportation Engineers, September 2021.

² DU = Dwelling Units, kSF = 1,000 Square Feet

³ Fitted curve equations from ITE Land Uses - Equation Type A is $T = a * X + b$, Equation Type B is $\ln(T) = a * \ln(X) + b$, Rate is $T = a * X$

⁴ Passby Reduction Obtained From Land Use Code #820 From The *ITE Trip Generation Handbook 3rd Edition, September 2017*.

⁵ Internal Reductions were obtained from the *Trip Generation Handbook, Second Edition, June 2004*.

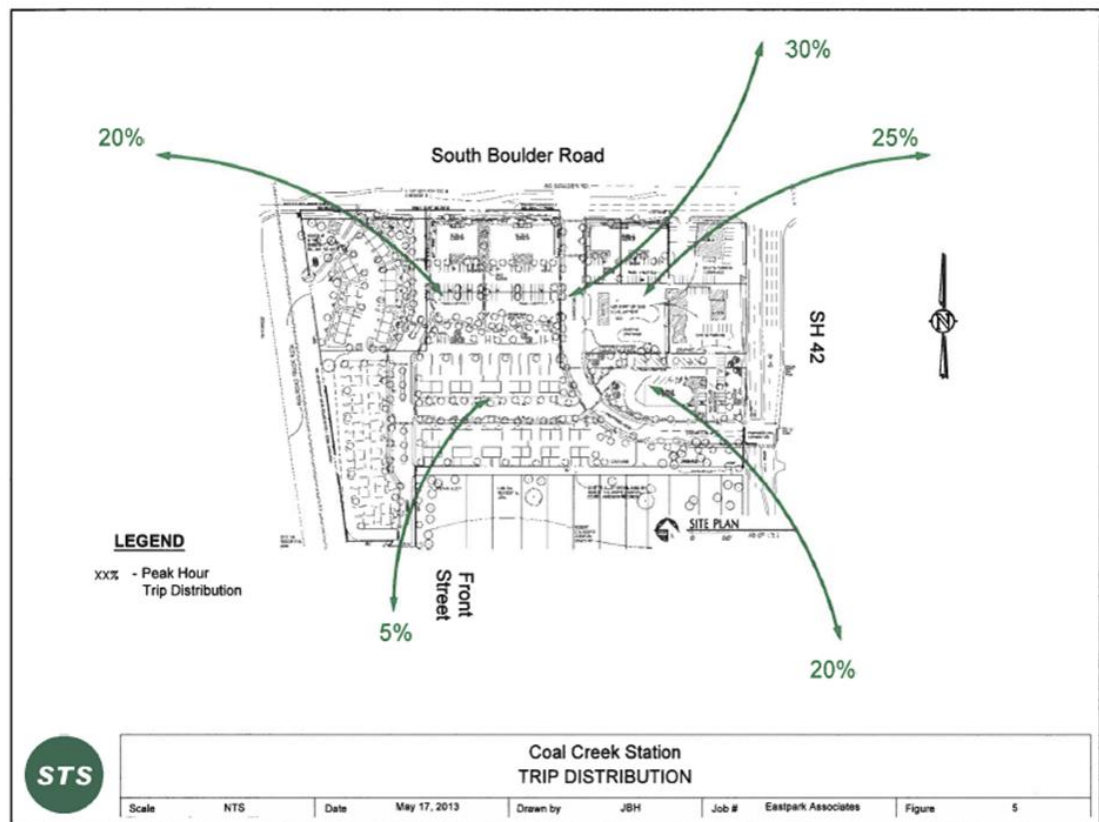
4.2 Trip Distribution

The distribution of project-generated vehicular traffic on adjacent roadways is influenced by several factors including the following:

- The location of the site relative to other commercial and healthcare facilities and the roadway network.
- The configuration of the existing and proposed adjacent roadway network
- Relative location of neighboring population centers

The general distribution of traffic to and from Coal Creek Village that was used in the previous traffic study, as shown in **Figure 9**, was also used for this study.

Figure 9: Trip Distribution from previous traffic impact study



There are four accesses into the proposed development. The internal distribution of traffic varies depending upon which of the general directions the traffic will be going to and from.

4.3 Pass-By Trips

In Chapter 10 of the *ITE Trip Generation Handbook*⁶ it states:

Not all traffic entering or exiting a site driveway is necessarily new traffic added to the street system. The actual amount of new traffic is dependent upon the purpose of the trip and the route used from its origin to its destination. For example, retail-oriented developments such as shopping centers, discount stores, restaurants, banks, service stations, and convenience markets are often located adjacent to busy streets in order to attract motorists already on the street system for a different purpose. These sites attract a portion of their trips from traffic passing the site on the way from an origin to an ultimate destination. Thus, these “pass-by” trips do not add new traffic to the adjacent street system and may be reduced from the total external trips generated by a study site.

The commercial uses in the mixed-use buildings will have pass-by traffic. The anticipated pass-by traffic for those uses was determined by multiplying the pass-by rates in Appendix E of *ITE Trip Generation Handbook*⁵ by the trip generation rate times the size of the unit. Because of the difficulty of making left turns out onto South Boulder Road, the eastbound traffic was assumed to account for 75% of the pass-by trips and 25% for the westbound. The computation of the pass-by trips is shown in **Table 7**. The pass-by directional distribution is shown in **Figure 12**.

Table 7: Pass-By Trips

#822 – Strip Retail Plaza (<40K)	Rate (vph/ksf)	Size (ksf)	Pass-By Percent	Pass-By Trips (vph)
AM	7.60	13.5	34%	34
PM	13.24	13.5	34%	61
Saturday	6.57	13.5	34%	30

4.4 Non Pass-by Trips

Non pass-by trips are determined by first deducting the pass-by trips from the total trip generation for the affected land uses. The remaining, non pass-by, trips are then routed as described in section **4.2 Trip Distribution**. A short-term and long-term non pass-by directional distribution was created to account for the short-term and long-term access/movement restriction at some of the study intersections. **Figure 10** shows the short-term non pass-by distribution and **Figure 11** shows the long-term non pass-by distribution.

4.5 Background Traffic Shift from the Neighborhood to the South

When the proposed development connects to the adjacent neighborhood to the south, additional traffic from that neighborhood can be expected on the new Front Street. An additional 8vph in the morning peak hour and 10vph in the afternoon weekday and Saturday peak hours were added to the Front Street intersections with Harper Street and South Boulder Road in the total traffic scenarios.

4.6 Site-Generated Traffic

When the trip generation expected for the pass-by trips (**Table 6**) is applied to the estimated pass-by trip distribution (**Figure 12**), the result is the new anticipated assignment of pass-by trips on the roadway system. **Figure 15** depicts the new vehicle pass-by trips that are anticipated from the proposed development.

Similarly, when the trip generation expected for the non pass-by trips (**Table 6**) is applied to the estimated short-term non pass-by trip distribution (**Figure 10**), the result is the new anticipated assignment of short-term non pass-by trips on the roadway system. **Figure 13** depicts the new vehicle short-term non pass-by trips that are anticipated from the proposed development.

Similarly, when the trip generation expected for the non pass-by trips (**Table 6**) is applied to the estimated long-term non pass-by trip distribution (**Figure 11**), the result is the new anticipated assignment of long-term non pass-by trips on the roadway system. **Figure 14** depicts the new vehicle long-term non pass-by trips that are anticipated from the proposed development.

4.7 Total Traffic

The total traffic anticipated at each intersection is the sum of background traffic with the site-generated traffic, where the site-generated traffic is the combination of the pass-by trips and the non pass-by trips.

For Year 2029, the background traffic (**Figure 7**) added to the pass-by trip traffic (**Figure 15**) and the short-term non pass-by trip traffic (**Figure 13**) yields the total Year 2029 traffic in **Figure 16**.

Similarly, Year 2050 total traffic is the sum of Year 2050 background traffic (**Figure 8**) added to the pass-by trip traffic (**Figure 15**) and the long-term non pass-by trip traffic (**Figure 14**) to yield to total Year 2050 traffic in **Figure 17**.

Figure 10: Project Generated Traffic Distribution (Non-Passby Short-Term)



1 ↖ 0% (20%) ↗ 0% (20%)	2 ↖ 0% (20%) ↗ 55% (0%)	3 ↖ 30% (0%) ↗ 25% (0%)
4 ↖ 0% (5%) ↗ 5% (0%)	5 ↖ 0% (20%) ↗ 20% (0%)	

LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements



Figure 11: Project Generated Traffic Distribution (Non-Passby Long-Term)



1 ↖ 0% (20%) ↗ 0% (20%)	2 ↖ 0% (20%) ↗ 55% (0%)	3 ↖ 30% (0%) ↗ 25% (0%)
4 ↖ 0% (5%) ↗ 25% (0%)	5 ↖ 0% (20%) ↗ 0% (20%)	

LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements

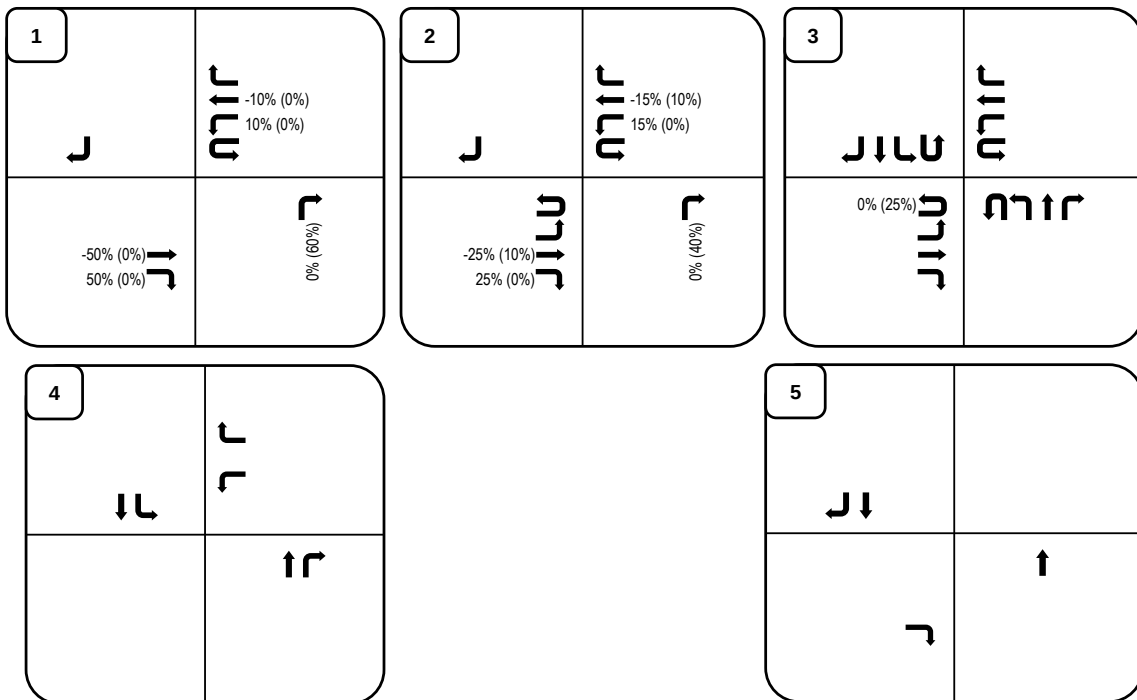


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EP

5/6/2024

Figure 12: Project Generated Traffic Distribution (Pass-By)



LEGEND:

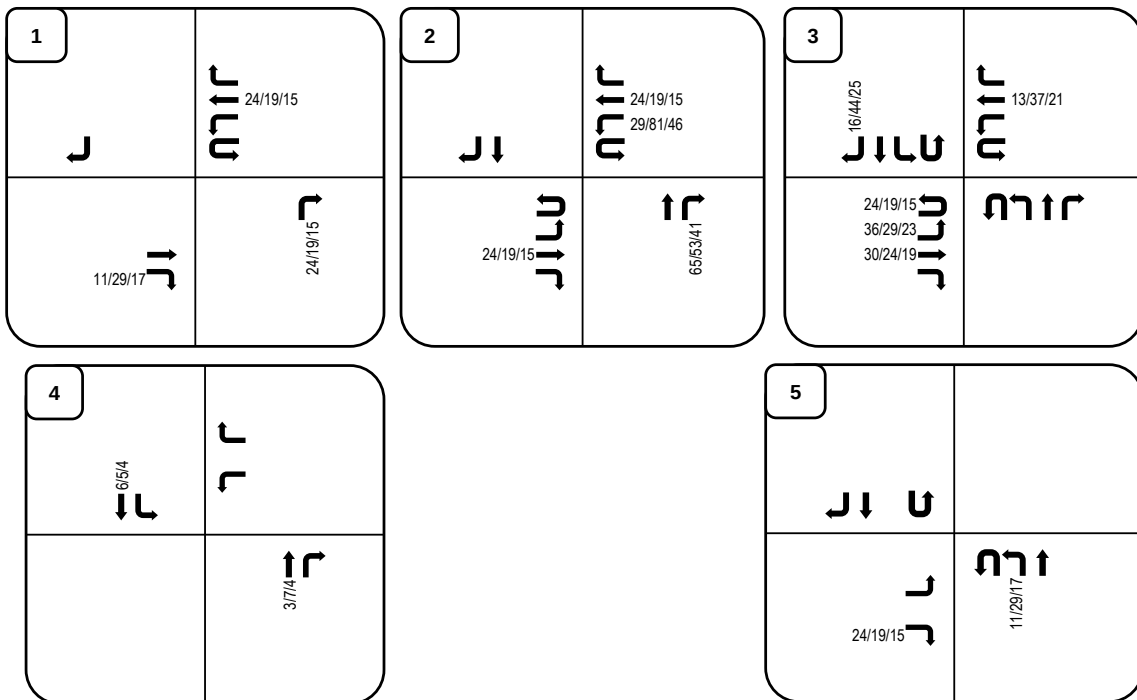
Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements



Figure 13: Project Generated Traffic Assignment (Non-Passby Short-Term)



LEGEND:

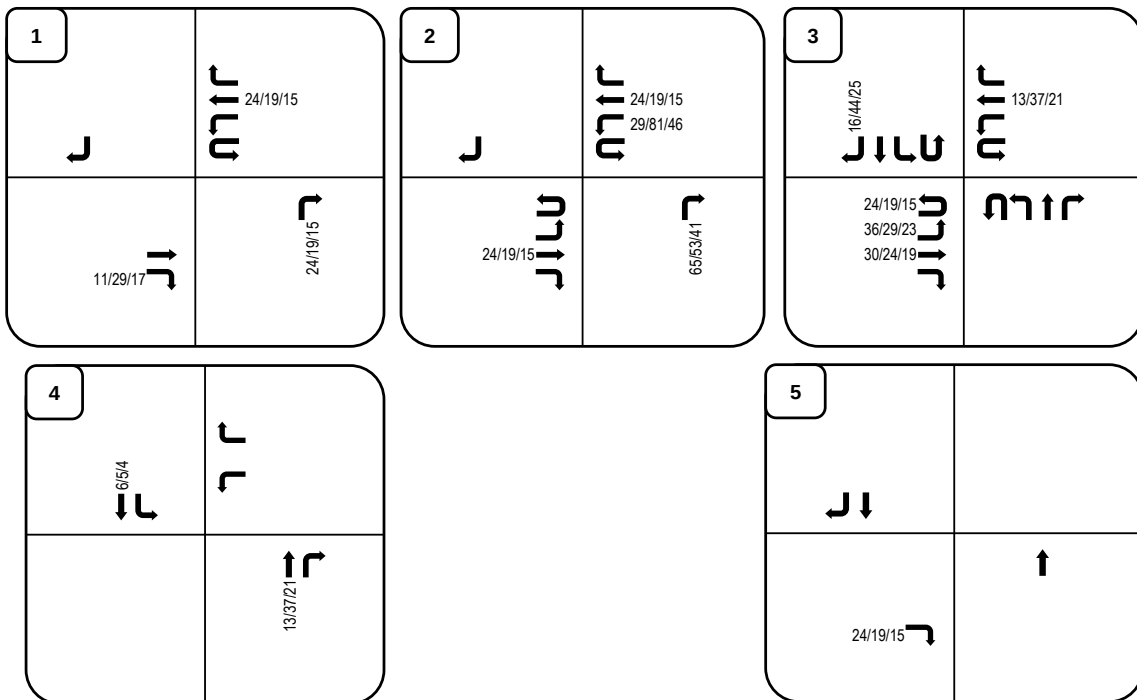
Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements



Figure 14: Project Generated Traffic Assignment (Non-Passby Long-Term)



LEGEND:

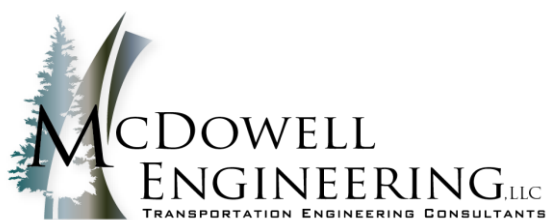
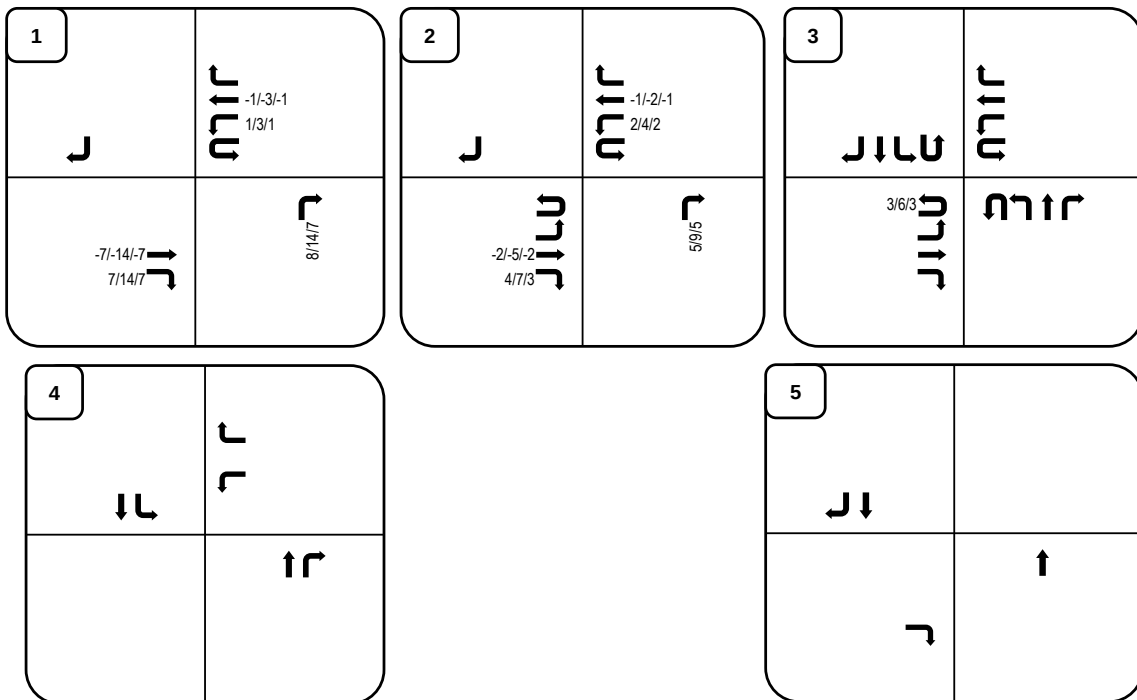
Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements



Figure 15: Project Generated Traffic Assignment (Pass-By)



LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements

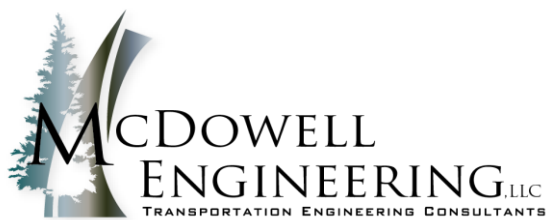
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Prepared By

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Figure 16: Year 2029 Total Traffic



1 9/12/7 זררר 6/5/3 1,154/1,360/1,158 4/8/13 20/38/27 806/1,368/1,071 19/50/34 34/45/47	2 41/68/74 זררר 10/14/8 1,126/1,274/1,090 32/99/74 3/2/3 8/29/3 26/26/36 809/1,381/1,090 10/19/14 77/82/68	3 40/137/303 584/603/410 149/197/107 3/6/4 זררר 151/147/100 703/675/553 270/292/282 0/0/0 28/38/28 330/543/331 446/716/496 150/152/99 זררר 0/4/1 182/161/95 461/708/373 219/279/200
4 6/5/4 0/0/0 זרר 0/0/0 10/12/12 3/7/4 10/12/12	5 0/1/1 808/1,168/942 זרר 0/0/12 0/0/12 0/0/0 27/20/20 זרר 1/2/1 13/29/19 724/1,129/836	



LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

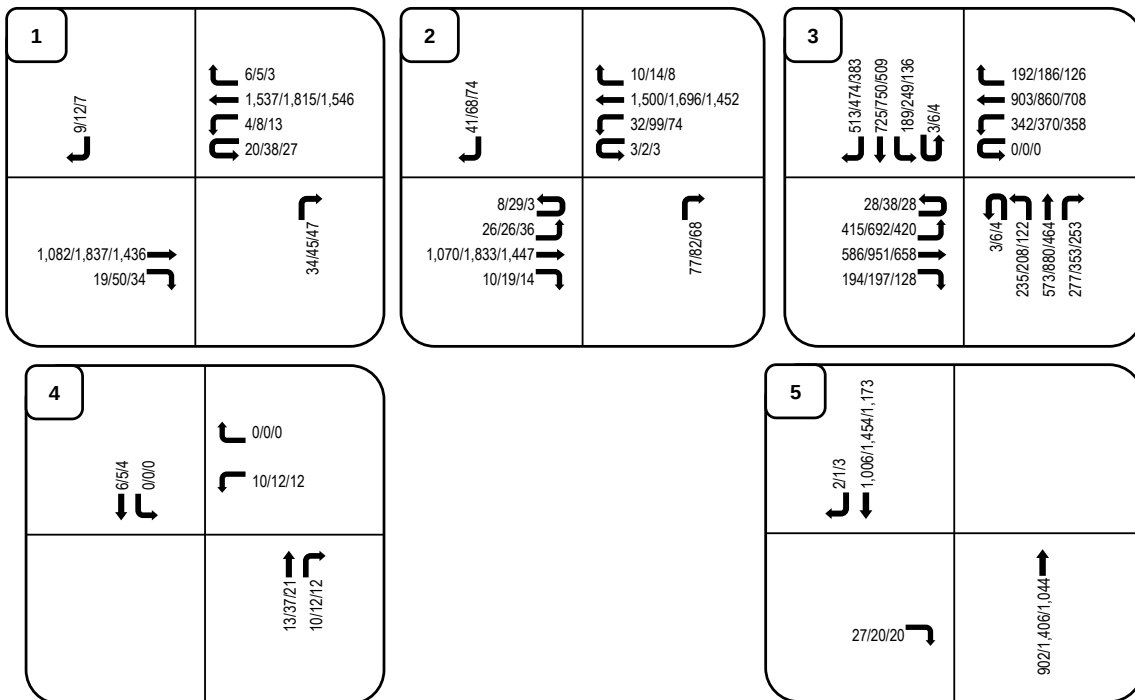
Turning Movements



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Figure 17: Year 2050 Total Traffic



LEGEND:

Directional Distribution = Inbound% (Outbound %)

AM/PM Volumes = XX/XX VPH (in PCEs)

Turning Movements



5.0 Transportation Impact Analysis

5.1 Total Traffic Level of Service

An *HCM* analysis under total traffic conditions was performed for the proposed site access under both short-term Year 2029 and long-term Year 2050 traffic conditions. The results can be seen in **Table 8**. The Synchro reports for the total traffic level of service analysis can be found in **Appendix F**.

Table 8: Total Traffic LOS

#	Int.	Traffic Control	Approach	Year 2029 Total Level of Service (Delay in Seconds)			Year 2050 Total Level of Service (Delay in Seconds)		
				AM	PM	SAT	AM	PM	SAT
1	Front Street & S. Boulder Road	3/4 Mvmnt.	Overall	A (0.3)	A (0.3)	A (0.4)	A (0.2)	A (0.4)	A (0.4)
			EB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
			WB	A (0.3)	A (1.2)	A (0.7)	A (0.3)	A (3.3)	A (0.9)
			NB	B (11.8)	C (16.2)	B (13.9)	B (13.7)	C (23.6)	C (17.5)
			SB	B (13.7)	C (15.3)	B (13.6)	C (17.0)	C (20.5)	C (17.0)
2	Cannon Circle & S. Boulder Road	3/4 Mvmnt.	Overall	A (0.9)	A (1.3)	A (1.3)	A (0.8)	A (1.6)	A (1.2)
			EB	A (0.6)	A (1.0)	A (0.4)	A (0.7)	A (2.1)	A (0.4)
			WB	A (0.3)	A (1.2)	A (0.8)	A (0.3)	A (1.6)	A (0.9)
			NB	B (12.5)	C (18.6)	B (14.7)	B (14.7)	D (28.8)	C (19.0)
			SB	B (14.3)	C (15.7)	B (14.8)	C (18.2)	C (23.4)	C (19.3)
3	Courtesy Road (SH 42) & S. Boulder Road	Signal	Overall	F (100.8)	F (213.8)	F (89.8)	F (180.8)	F (334.6)	F (139.7)
			EB	F (272.9)	F (540.8)	F (215.6)	F (467.9)	F (877.0)	F (363.4)
			WB	D (42.8)	D (43.3)	D (42.4)	E (56.6)	E (55.5)	D (49.6)
			NB	D (38.9)	F (82.8)	D (39.6)	F (143.5)	F (98.8)	D (44.9)
			SB	E (60.7)	F (101.8)	D (38.6)	F (88.5)	F (144.1)	D (54.7)
4	Front Street & Harper Street	WB Stop	Overall	A (3.0)	A (2.9)	A (3.3)	A (2.2)	A (1.6)	A (2.1)
			WB	A (8.6)	A (8.7)	A (8.6)	A (8.7)	A (8.8)	A (8.7)
			NB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
			SB	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
5	Cannon Circle & Courtesy Road (SH 42)	EB Stop	Overall	A (0.0)	A (0.0)	A (0.0)	-	-	-
			EB	B (11.7)	B (14.0)	B (12.4)	-	-	-
			NB	A (0.2)	A (0.4)	A (0.3)	-	-	-
			SB	A (0.0)	A (0.0)	A (0.0)	-	-	-
5	Cannon Circle & Courtesy Road (SH 42)	RIRO	Overall	-	-	-	A (0.0)	A (0.0)	A (0.0)
			EB	-	-	-	B (13.0)	C (16.6)	B (14.0)
			NB	-	-	-	A (0.0)	A (0.0)	A (0.0)
			SB	-	-	-	A (0.0)	A (0.0)	A (0.0)

As can be seen in **Table 8**, intersections #1, #2, #4, and #5 are anticipated to operate at an acceptable overall intersection LOS through the long-term planning horizon Year 2050. However, intersection #3 is anticipated to operate below an acceptable overall intersection LOS through the long-term planning horizon Year 2050. Intersection #3 was already operating below an acceptable LOS with Year 2022 existing traffic

volumes. The LOS and delays are only expected to worsen as traffic on South Boulder Road continues to increase over time.

Front Street & South Boulder Road: With its current access restrictions, this intersection is anticipated to operate at an acceptable LOS C or better through Year 2050 total traffic conditions on all legs.

Cannon Circle & South Boulder Road: This intersection was anticipated to operate at a failing LOS with the existing conditions under Year 2022 traffic volumes. Therefore, the northbound left and southbound left movements were restricted. With these new movement restrictions, the intersection is anticipated to operate at an acceptable LOS D or better on all legs through Year 2050. If these movement restrictions are not made, then the north and south legs are anticipated to continue experiencing a failing LOS.

SH 42 & South Boulder Road: This intersection is anticipated to operate at a poor LOS on all four legs through Year 2050 total traffic conditions. This intersection was already operating at a failing LOS on all four legs with Year 2022 existing traffic volumes. The traffic volumes are too high for all of the traffic waiting in queue to be flushed in one cycle. This causes some vehicles to wait in queue for more than one cycle.

As previously stated, the LOS on the north and south legs are slightly better than on the east and west legs. This is due to signal timing prioritization of CDOT's SH 42.

Front Street & Harper Circle: This intersection is anticipated to operate at an acceptable LOS through Year 2050 total traffic conditions.

SH 42 & Cannon Circle: Mainline SH 42 is anticipated to operate at an acceptable LOS A through Year 2050 total traffic conditions. However, as traffic continues to increase on SH 42, the available gaps in traffic for vehicles wanting to turn left onto Cannon Circle will continue to decrease over time, resulting in a failing LOS. The traffic signal at South Boulder Road will provide gaps in traffic to make this movement possible for a number of years.

As previously mentioned, **Table 8** shows this intersection operating at an acceptable LOS with no access restrictions. However, this is due to no vehicles making an eastbound left turn out at this intersection (see **Figure 16**). If only 15vph make an eastbound left turn at this intersection, then the west leg is anticipated to operate at a failing LOS due to the high northbound and southbound traffic volumes on SH 42. Therefore, restricting this intersection into right-right and right-out is recommended to prevent long delays and queues on the west leg. RIRO restrictions will also help prevent vehicle queues from blocking the access to the commercial businesses directly northwest of this intersection.

5.2 Site Design and Traffic Circulation Evaluation

The proposed street configuration for Coal Creek Village provides good internal circulation as well as providing alternate routes to get onto the arterial streets.

Front Street: Front Street will provide two of the accesses to the development. It will extend northward from the existing section of Front Street at Harper Street and continue through the development as a two-lane residential street. It will connect to South Boulder Road at the existing access to 1032 E South Boulder Road.

The City of Louisville has made changes to the configuration of the South Boulder Road and Front Street intersection. The City of Louisville restricted northbound and southbound left turns in Summer 2022.

Cannon Circle: Cannon Circle will also provide two of the accesses to the development. Cannon Circle is platted as an L-shaped City street. The north-south leg intersects South Boulder Road one block west of SH 42. The east-west leg intersects SH 42 one block south of South Boulder Road.

Canon Circle approaching SH 42 may require access restriction to the adjacent lot. There is a potential corner clearance problem with an existing driveway. The driveway on Cannon Circle to 1110 E South Boulder Road is about 20 feet south of the stop bar. If there are two or more northbound queued up at the stop sign, the southbound left turn into the driveway will be blocked. Someone waiting to make the left turn into the driveway could cause a backup that extends into the eastbound through lanes on South Boulder Road. The City may want to implement a countermeasure. One option is to install a “Do Not Block Driveway” sign and appropriate lane markings. Another option is to construct a raised median on Cannon Circle, making the driveway a right-in/right-out access. This intersection may have movements restricted in the future at the direction of the City.

Northbound left turns onto South Boulder Road: The City recently restricted the left turns from the side streets at the South Boulder Road and Front Street intersection.

As traffic continues to increase on South Boulder Road, the available gaps in traffic for vehicles wanting to turn left from the side streets onto mainline will continue to decrease over time. Eventually, the City may consider restricting movements at Cannon Circle as well. There is not an industry standard for when a left-turn restriction should be imposed. It is at the discretion of the City and is typically based on the levels of congestion or the number of crashes. This intersection may have movements restricted in the future at the direction of the City. This is noted on the Site Plan in **Figure 2** and **Appendix B**.

5.3 Turn Lane Requirements

The need for auxiliary turn lanes were assessed per the *State of Colorado State Highway Access Code*⁷ (*Access Code*) for CDOT's SH 42. The City of Louisville *Design and Construction Standards* does not have turn lane requirements, so the *Access Code* requirements were compared to the 95th Percentile Queue lengths for the Year 2050 total traffic conditions and current site geometric constraints. Refer to **Table 9** below for the auxiliary turn lane recommendations and details.

⁷ State of Colorado State Highway Access Code, 2002.

Table 9: Auxiliary Turn Lane Recommendations

#	Int.	Mvmt	Accel or Decel	Posted Speed Limit (MPH)	Road Classification	SHAC Trigger Volume (VPH)	Year 2022 Existing			Year 2029 BG			Year 2050 BG			Year 2029 Total			Year 2050 Total			Existing Turn Lane	Access Code Required Turn Lane	Trigger Year & Condition
							AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT			
1	Front Street & S. Boulder Road	EBR	Decel	35	NR-A	> 25	1	7	10	1	7	10	1	7	10	19	50	34	19	50	34	60' Storage + 50' Taper	310' Decel Length (10:1 Taper Included)	Triggered by Year 2029 Total Traffic Volumes. Existing turn lane is adequate for 95th Percentile Queue.
		WBL	Decel	35	NR-A	> 10	3	5	12	3	5	12	3	5	12	4	8	13	4	8	13	75' Storage + 65' Taper	310' Decel Length (10:1 Taper Included) + 25' Storage	Triggered by Year 2022 Existing Traffic Volumes. Existing turn lane is adequate for 95th Percentile Queue.
		WBR	Decel	35	NR-A	> 25	6	5	3	6	5	3	6	5	3	6	5	3	6	5	3	None	Not Warranted	Not Triggered
		NBR	Decel	20	NR-C	> 50	2	8	21	2	12	25	2	12	25	34	45	47	34	45	47	None	Not Warranted	Not Triggered
		SBR	Decel	20	NR-C	> 50	7	9	3	9	12	7	9	12	7	9	12	7	9	12	7	None	Not Warranted	Not Triggered
2	Cannon Circle & S. Boulder Road	EBL	Decel	35	NR-A	> 10	23	16	33	26	26	36	26	26	36	26	26	36	26	26	36	55' Storage + 100' Taper	310' Decel Length (10:1 Taper Included) + 45' Storage	Triggered by Year 2022 Existing Traffic Volumes. Existing turn lane is adequate for 95th Percentile Queue.
		EBR	Decel	35	NR-A	> 25	6	11	10	6	11	10	6	11	10	10	19	14	10	19	14	None	Not Warranted	Not Triggered
		WBL	Decel	35	NR-A	> 10	1	14	26	1	14	26	1	14	26	32	99	74	32	99	74	75' Storage + 75' Taper	310' Decel Length (10:1 Taper Included) + 105' Storage	Triggered by Year 2022 Existing Traffic Volumes. Existing turn lane is adequate for 95th Percentile Queue.
		WBR	Decel	35	NR-A	> 25	10	11	7	10	11	7	10	11	7	10	14	8	10	14	8	None	Not Warranted	Not Triggered
		NBL	Decel	20	NR-C	> 25	1	10	9	1	10	9	1	10	9	0	0	0	0	0	0	None	90' Taper (@7.5:1 Taper Ratio) + 45' Storage	Not required. This movement may be restricted by the City in the future.
		NBR	Decel	20	NR-C	> 50	6	7	12	6	7	12	6	7	12	77	82	68	77	82	68	None	90' Taper (@7.5:1 Taper Ratio) + 70' Storage	Triggered by Year 2029 total Traffic. Not required, NBL turns may be restricted in the future. Therefore, NBR will be the only movement allowed.
		SBL	Decel	20	NR-C	> 25	18	36	23	18	36	23	18	36	23	0	0	0	0	0	0	None	90' Taper (@7.5:1 Taper Ratio) + 45' Storage	Not required. This movement may be restricted by the City in the future.
		SBR	Decel	20	NR-C	> 50	23	31	50	23	31	50	23	31	50	41	68	74	41	68	74	None	90' Taper (@7.5:1 Taper Ratio) + 65' Storage	Triggered by Year 2029 total Traffic. Not required, SBL turns may be restricted in the future. Therefore, SBR will be the only movement allowed.
3	Courtesy Road (SH 42) & S. Boulder Road	EBL	Decel	35	NR-A	> 10	270	472	283	294	514	308	379	663	397	330	543	331	415	692	420	Dual Left Turn Lanes: 155' Storage + 80' Taper	310' Decel (10:1 Taper Included) + 660' Storage	Triggered by Year 2022 Existing Traffic Volumes. Existing turn lane does not meet Access Code requirements.
		EBR	Decel	35	NR-A	> 25	138	140	91	150	152	99	194	197	128	150	152	99	194	197	128	None	310' Decel (10:1 Taper Included)	
		WBL	Decel	35	NR-A	> 10	250	270	261	270	292	282	342	370	358	270	292	282	342	370	358	Dual Left Turn Lanes: 220' Storage + 130' Taper	310' Decel (10:1 Taper Included) + 350' Storage	
		WBR	Decel	35	NR-A	> 25	140	136	92	151	147	100	192	186	126	151	147	100	192	186	126	255' Storage	310' Decel (10:1 Taper Included)	
		NBL	Decel	45	NR-A	> 10	167	148	87	182	161	95	235	208	122	182	161	95	235	208	122	Dual Left Turn Lanes: 220' Storage + 65' taper	550' Decel (13.5:1 Taper Included) + 225' Storage	The City of Louisville completed Future 428, a detailed SH 42 corridor study, in December 2022. The study outlined recommend improvements to the intersection of South Boulder Road and SH 42. Refer to an excerpt in Appendix G.
		NBR	Decel	45	NR-A	> 25	202	258	185	219	279	200	277	353	253	219	279	200	277	353	253	None	550' Decel (13.5:1 Taper Included)	
		SBL	Decel	45	NR-A	> 10	138	182	99	149	197	107	189	249	136	149	197	107	189	249	136	Dual Left Turn Lanes: 180' Storage + 155' Taper	550' Decel (13.5:1 Taper Included) + 240' Storage	
		SBR	Decel	45	NR-A	> 25	354	306	255	385	333	278	497	430	358	401	377	303	513	474	383	275' Storage	550' Decel (13.5:1 Taper Included)	
4	Front Street & Harper Street	WBL	Decel	20	NR-C	> 25	10	12	12	10	12	12	10	12	12	10	12	12	10	12	12	None	Not Warranted	Not Triggered
		WBR	Decel	20	NR-C	> 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	Not Warranted	Not Triggered
		NBR	Decel	20	NR-C	> 50	10	12	12	10	12	12	10	12	12	10	12	12	10	12	12	None	Not Warranted	Not Triggered
		SBL	Decel	20	NR-C	> 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	Not Warranted	Not Triggered
5	Cannon Circle & Courtesy Road (SH 42)	EBL	Decel	20	NR-C	> 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	None	Not Warranted	Not Triggered
		EBR	Decel	20	NR-C	> 50	3	1	5	3	1	5	3	1	5	27	20	20	27	20	20	None	Not Warranted	Not Triggered
		NBL	Decel	45	NR-A	> 10	2	0	2	2	0	2	0	0	0	13	29	19	0	0	0	135' Storage + 100' Taper	550' Decel (13.5:1 Taper Included) + 40' Storage	Triggered by Year 2023 Total Traffic Volumes. Northbound left turn will be restricted in the future.
		SBR	Decel	45	NR-A	> 25	0	1	1	0	1	1	2	1	3	0	1	1	2	1	3	None	Not Warranted	Not Triggered

¹Based upon State Highway Access Code requirements for an R-A roadway with posted speed of 45mph.

Turn lane threshold volume is triggered per State Highway Access Code criteria.

Triggered by State Highway Access Code Safety and Operations

Front Street & South Boulder Road: An eastbound right deceleration lane is warranted by project-generated traffic with Year 2029 total traffic volumes per the *Access Code*'s thresholds. There is currently an eastbound right deceleration lane with approximately 60ft of storage and 50ft of taper.

The Year 2045 total traffic's 95th Percentile Queue is negligible due to the eastbound right turn being a free movement at this intersection.

The *City of Louisville Transportation Master Plan*⁹ identifies recommended improvements for the South Boulder Road corridor. Key considerations were bus rapid transit, improvements to bus stops and frequency of transit service, eliminating right-turn lanes, and providing underpasses and at-grade pedestrian crossings. Specifically, it states, "Eliminating the right-turn lanes along the road would have minimal impact on vehicle mobility, while freeing space for sidewalks and a bikeway along the corridor and decreasing crossing distances for people walking." Refer to an excerpt in **Appendix G**.

However, with the high through volume of traffic on South Boulder Road, right turn volumes over the *Access Code*'s threshold will realistically still impact the mainline operations of South Boulder Road. The inclusion of the right turn lane should also help reduce crashes associated with decelerating turning vehicles in the main traffic stream.

Therefore, the existing right turn lane is appropriate for full buildout of the proposed Coal Creek Village project.

A westbound left deceleration lane is warranted by Year 2022 existing traffic volumes. The current westbound left deceleration lane has approximately 75ft of storage and 65ft of taper. The existing turn lane does not meet the *Access Code* requirements. However, the Year 2050 total traffic's 95th Percentile Queue is less than one vehicle. Therefore, no changes are recommended.

Cannon Circle & South Boulder Road: The existing westbound left deceleration lane approximately has 75ft of storage and 75ft of taper. The Year 2050 total traffic's 95th Percentile Queue for this movement is less than two vehicles. The westbound left turn lane length is constrained by the back-to-back left turn bays for the SH 42 intersection. Additionally the 95th percentile queue for this movement is less than the available storage length + taper length. Therefore, no changes are recommended to the eastbound and westbound left deceleration lanes.

This intersection may have movements restricted in the future at the direction of the City. This is noted on the Site Plan in **Figure 2** and **Appendix B**. The failing LOS on the north and south legs can be improved to acceptable LOS by restricting the northbound left and southbound left movements.

A southbound left turn lane is triggered by Year 2022 existing traffic conditions. However, restrictions to southbound left turn are suggested to improve LOS. If these restrictions are applied, then the southbound left deceleration lane won't be necessary.

Northbound right and southbound right turn lanes are triggered by Year 2029 traffic volumes. However, northbound and southbound left turns will be restricted in the future. Therefore, northbound and southbound right turns will be the only movements available on these legs.

SH 42 & South Boulder Road: Dual eastbound left deceleration lanes currently exist. Each lane has approximately 155ft of storage with 80ft of taper. Dual westbound left deceleration lanes currently exist. Each lane has approximately 220ft of storage with 130ft of taper. Dual northbound left deceleration lanes currently exist. Each lane has approximately 220ft of storage with 65ft of taper. Dual southbound left deceleration lanes currently exist. Each lane has approximately 180ft of storage with 155ft of taper. A southbound right deceleration lane currently exists. The deceleration lane approximately has 275ft of storage. The existing turn lanes do not meet the *Access Code* requirements.

The City of Louisville completed *Future 42*⁹, a detailed SH 42 corridor study, in December 2022. The study outlined recommend improvements to the intersection of South Boulder Road and SH 42. Refer to an excerpt in **Appendix F**.

Front Street & Harper Circle: There are no auxiliary turn lanes warranted at this intersection. With the construction of a north leg at this intersection, the intersection should be modified to a westbound stop-control. The installation of a stop sign, stop bar, and painted pedestrian crosswalk should be included on the east leg of Harper Circle.

Front Street & Griffith Street: With the additional through traffic anticipated on Front Street, the intersection should be formalized as southbound stop-control. The installation of a stop sign, stop bar, and painted pedestrian crosswalk should be included on the north leg of Front Street.

SH 42 & Cannon Circle: The existing northbound left turn does not meet the *Access Code* requirements. However, the Year 2050 total traffic's 95th Percentile Queue is less than one vehicle. The northbound left turn lane length is constrained by the back-to-back left turn bay for the Louisville Sports Complex. Therefore, no changes are recommended. Additionally, northbound left and eastbound left restrictions will be made at this intersection in the long-term. Therefore, the northbound left turn lane will not be necessary due to restrictions.

No auxiliary turn lanes are warranted on Cannon Circle.

6.0 Recommendations and Conclusions

Coal Creek Village is a proposed residential development located southwest of the intersection of South Boulder Road and Colorado State Highway 42. The development is proposing the following land uses:

Land Use Category	Qty	Units
Single Family Houses	92	Dwelling Units
Low-Rise Multifamily Housing	48	Dwelling Units
Residential Portion of Mixed-Use Buildings	48	Dwelling Units
Commercial Area of Mixed-Use Buildings	13,510	Square Feet
Coffee Shop	400	Square Feet

Trip Generation: The proposed development is expected to generate a total of 1,883 new trips on the adjacent roadway network over the course of an average weekday. This includes 53 inbound and 119 outbound trips during the morning peak hour. The evening peak hour is expected to generate 147 new inbound and 96 new outbound trips. The Saturday midday peak hour is expected to generate 83 new inbound and 75 new outbound trips.

Internal Site Circulation: The proposed street configuration for Coal Creek Village provides good internal circulation as well as providing alternate routes to access adjacent arterial streets. During peak hours drivers wanting to go west on South Boulder Road may experience long delays making left turns out of the development on Cannon Circle, but they do have the option of going to the Main Street and South Boulder Road traffic signal to make a protected left turn via the gridded street network.

Canon Circle approaching SH 42 may require access restriction to the adjacent lot. The driveway on Cannon Circle to 1110 E South Boulder Road is about 20 feet south of the stop bar.

Off-system access to SH 42 and Main Street via the grided street network is encouraged.

Site Access: The Coal Creek Village development is proposing four accesses. Three of the four accesses are existing. A fourth access will need to be constructed. Two of the accesses will have direct connectivity to South Boulder Road, one access will have direct connectivity to SH 42, and the fourth access will have direct connectivity to Harper Street.

Intersection Analysis: In addition to the four proposed site accesses, this report also studied one additional off-site intersection. Of these five study intersections, intersections #1, #4, and #5 are anticipated to perform at a LOS C or better through Year 2050 total traffic conditions. Intersections #2 and #3 are anticipated to have a failing LOS on one or more legs with Year 2022 existing traffic volumes. Intersection #2's LOS can be improved by restricting northbound and southbound left turns out of the intersection. By restricting these two movements, the intersections is anticipated to operate at an acceptable LOS on all legs through Year 2050 total traffic conditions. See **Section 3.4** and **Section 5.1** for more details.

The need for auxiliary turn lanes were assessed per the *State of Colorado State Highway Access Code*⁸ (*Access Code*) for CDOT's SH 42. The City of Louisville *Design and Construction Standards* does not have turn lane requirements, so the *Access Code* requirements were compared to the 95th Percentile Queue lengths for the Year 2045 total traffic conditions and current site geometric constraints.

1. Front Street & South Boulder Road: With its current access restrictions, this intersection is anticipated to operate at an acceptable LOS C or better through Year 2050 total traffic conditions.

The existing eastbound right and westbound left turn lanes are appropriate for full buildout of the proposed Coal Creek Village project. The 95th vehicle queue is less than the available storage length + taper length. Therefore, no modifications to the existing turn lanes is required.

2. Cannon Circle & South Boulder Road: Mainline South Boulder Road is anticipated to operate at an acceptable LOS A through Year 2050 total traffic conditions. However, as traffic continues to increase on South Boulder Road, the available gaps in traffic for vehicles wanting to turn left from the side streets (north leg and south leg) onto mainline will continue to decrease over time, resulting in a failing LOS for the side streets. The failing LOS on the north and south legs can be improved to acceptable LOS by restricting the northbound left and southbound left movements.

The existing eastbound left and westbound left turn lanes on South Boulder Road are adequate for full buildout for the proposed Coal Creek Village. The 95th vehicle queue is less than the available storage length + taper length. Therefore, no modifications to the existing eastbound left and westbound left turn lanes is required.

A southbound left turn lane is triggered by Year 2022 existing traffic conditions. However, restrictions to southbound left turn are suggested to

⁸ State of Colorado State Highway Access Code, 2002.

improve LOS. If these restrictions are applied, then the southbound left deceleration lane won't be necessary.

Northbound right and southbound right turn lanes are triggered by Year 2029 traffic volumes. However, northbound and southbound left turns will be restricted in the future. Therefore, northbound and southbound right turns will be the only movements available on these legs.

3. SH 42 & South Boulder Road: This intersection is anticipated to operate at a poor LOS on all four legs through Year 2045 total traffic conditions. This intersection was already operating at a failing LOS on all four legs with Year 2022 existing traffic volumes. The traffic volumes are too high for all of the traffic waiting in queue to be flushed in one cycle. This causes some vehicles to wait in queue for more than one cycle.

The existing turn lanes do not meet the *Access Code* requirements. The City of Louisville completed *Future 42*⁹, a detailed SH 42 corridor study, in December 2022. The study outlined recommend improvements to the intersection of South Boulder Road and SH 42.

4. Front Street & Harper Circle: This intersection is anticipated to operate at an acceptable LOS through Year 2050 total traffic conditions. There are no auxiliary turn lanes warranted at this intersection.
5. SH 42 & Cannon Circle: Mainline SH 42 is anticipated to operate at an acceptable LOS A through Year 2045 total traffic conditions. However, as traffic continues to increase on SH 42, the available gaps in traffic for vehicles wanting to turn left onto Cannon Circle will continue to decrease over time, resulting in a failing LOS. The traffic signal at South Boulder Road will provide gaps in traffic to make this movement possible for a number of years.

The existing northbound left turn does not meet the *Access Code* requirements. However, northbound left and eastbound left restrictions will be made at this intersection in the long-term. Therefore, the northbound left turn lane will not be necessary due to restrictions.

No auxiliary turn lanes are warranted on Cannon Circle.

See **Section 5.3** for more details.

Transportation Recommendations: Based upon the analysis and recommendations presented in this report, the Coal Creek Village development will be successfully incorporated in the existing roadway network.

7.0 Appendix

Reference Documents

1. *CDOT Online Traffic Information System*. Colorado Department of Transportation, <https://dtdapps.coloradodot.info/otis>
2. *2015 Assigned All Day Model Volumes and 2040 Assigned All Day model Volumes*, Denver Regional Council of Governments, <https://drcog.org/services-and-resources/data-maps-and-modeling/travel-modeling>
3. *Highway Capacity Manual*. Transportation Research Board, 2010.
4. *11th Edition Trip Generation Manual*. Institute of Transportation Engineers, 2021.
5. *Trip Generation Handbook, 3rd Edition*. Institute of Transportation Engineers, 2017.
6. *Trip Generation Handbook, 2nd Edition*. Institute of Transportation Engineers, 2004.
7. *State of Colorado, State Highway Access Code, Volume 2*, Code of Colorado Regulations 601-1, March 2002.
8. *Design and Construction Standards, City of Louisville, Department of Public Works, Engineering Division, 1994*.
9. *Future 42 (SH 42 Corridor Study)*. City of Louisville, December 2022.
10. *City of Louisville Transportation Master Plan*. City of Louisville, 2019.
11. *South Boulder Road Corridor Evaluation*. City of Louisville and FHU, 2022.

Included Documents

Appendix A: Traffic Study Scoping Form

Appendix B: Site Plan (24" x 36" pdf)

Appendix C: Traffic Counts

Appendix D: Signal Timing Plans

- SH 42 and South Boulder Road
- Main Street and South Boulder Road

Appendix E: Synchro Modeling Reports

Appendix F: *Future 42* Excerpt of Preferred South Boulder Road and SH 42 Design

Appendix G: *City of Louisville Transportation Master Plan* Excerpt of South Boulder Road Corridor Improvements and Commercial Driveway

Appendix H: Internal Reduction Calculations

Appendix A: Traffic Study Scoping Form



Traffic Study Scoping Form

Contact Information	
Consultant Name:	McDowell Engineering, LLC T. Kent Harbert, PE, PTOE (970) 812-6768 kent@mcdowelleng.com
Developer/Owner Name:	Markel Homes

Project Information (<i>Attach proposed site plan.</i>)								
Project Name:		Coal Creek Station						
Project Location:		Louisville - South of S. Boulder Road between the BNSF Railroad and Courtesy Road (SH 42)						
Project Description:		Mixed use development (residential and commercial) on approximately 10½ acres. Two existing structures will be removed. One structure (coffee shop) will remain. The six properties with existing businesses at the corner of South Boulder Road and Courtesy Road are not part of this development.						
Proposed Land Uses	ITE Code	# Units or Size	Proposed Land Uses	ITE Code	# Units or Size	Existing Land Uses	ITE Code	# Units or Size
Single Family	210	32 DU	Shopping Center	820	13.5 ksf	Commercial (use existing counts)		
Multifamily Low-Rise	220	24 DU	Fast Food w drive thru	934	5.0 ksf			
Multifamily Mid-Rise	230	60 DU	Coffee Shop	936	0.4 ksf			

Assumptions						
Study Horizons	Current Year:	2020	Buildout Year:	2021	Long Term Year:	2040
Study Area Boundaries	North:	South Boulder Road		South:	South property line	
	East:	Courtesy Road (SH 42)		West:	BNSF Railroad	
Intersections to be Evaluated	1. Front Street & S. Boulder Road		4. Front Street & Harper Street			
	2. Cannon Circle & S. Boulder Road		5. Cannon Circle & Courtesy Rd (SH 42)			
	3. S. Boulder Rd & Courtesy Rd (SH 42)					
Trip Distribution	Use the same distribution that was used in the 2013 traffic study. See attached sketch.					
Trip Reductions*	Internal Capture	Use: 5% (for commercial only)		Pass By	Use:	
	Multi-modal	Use: 5%			Use:	
Anticipated Future Traffic Growth Rates	Courtesy Road (SH 42) - CDOT OTIS 20-yr factor = 1.28 South Boulder Road - Use DRCOG 2040 traffic volume forecast Side streets and driveways - built out, use current volumes		Study Time Periods	☒ AM (7-9) ☒ PM (4-6) ☒ SAT (noon) ☐ Other:		

McDowell Engineering Traffic Study Scoping Form

Assumptions (continued)		
Other Factors	Reference: <i>Coal Creek Station, Traffic Impact Study</i> , Sustainable Traffic Solutions, Inc., May 17, 2013 No known roadway or land development projects that will impact this project.	
Analysis Methods & Issues	☒ Synchro ☐ HCS ☐ aaSidra or Rodel ☒ Intersections ☐ Roadway Sections ☐ Signal Warrants ☒ Safety/Sight Distance	☒ Queuing & Storage ☒ CDOT (Access Permit, etc.) ☒ Identify Bicycle, Pedestrian & Transit Accommodations ☐ TDM ☐ Neighborhood Impacts ☐ Other:

Notes, & Other Assumptions:

- ___ The six properties with existing businesses at The corner of South Boulder Road and Courtesey Road are not part of this development. The properties are built out, so the observed volumes on both legs of Cannon Circle will be used unadjusted as the background volume for all analyses.
- ___ A traffic signal was proposed for the intersection of Cannon Circle and Courtesey Road in the 2013 traffic study. It is not proposed for the current project.
- ___ The curve in the Cannon Circle right of way will be eliminated. There will be a north-south leg and an east-west leg meeting in a 90° T intersection. One or both legs may be renamed.
- ___ If the Level of Service for the northbound Front Street to westbound South Boulder Road is LOS D or worse, more traffic will be routed south on Front Street to take Griffith Street and Main Street to the signalized intersection at Main Street and South Boulder Road.
- ___ The signal timing for South Boulder Road and Courtesey Road intersection and the South Boulder Road and Main Street intersection are requested from the City of Louisville and/or CDOT. Please provide.
- ___ Front Street will connect to the south.
- ___ The intersection of Cannon Circle and Courtesey Road is proposed to be a 3/4 movement with right-in, left-in, and right-out
- ___ The driveway opposite Front Street at S. Boulder Road is offset to the left. This is a dangerous configuration that will get worse with the increased traffic from the new development. It will be recommended that the driveway movements be limited, with the southbound left turns prohibited. This configuration will be used in the modeling.

Attachments:

Site Plan
Directional Distribution

Consultant: <u>McDowell Engineering</u> Signed: <u><i>T. Kent Harbert</i></u> Print Name: <u>T. Kent Harbert</u> Date: <u>9/1/2020</u>	Review Agency: _____ Signed: _____ Print Name: _____ Date: _____
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Review comments: _____

Coal Creek Station - Directional Distribution



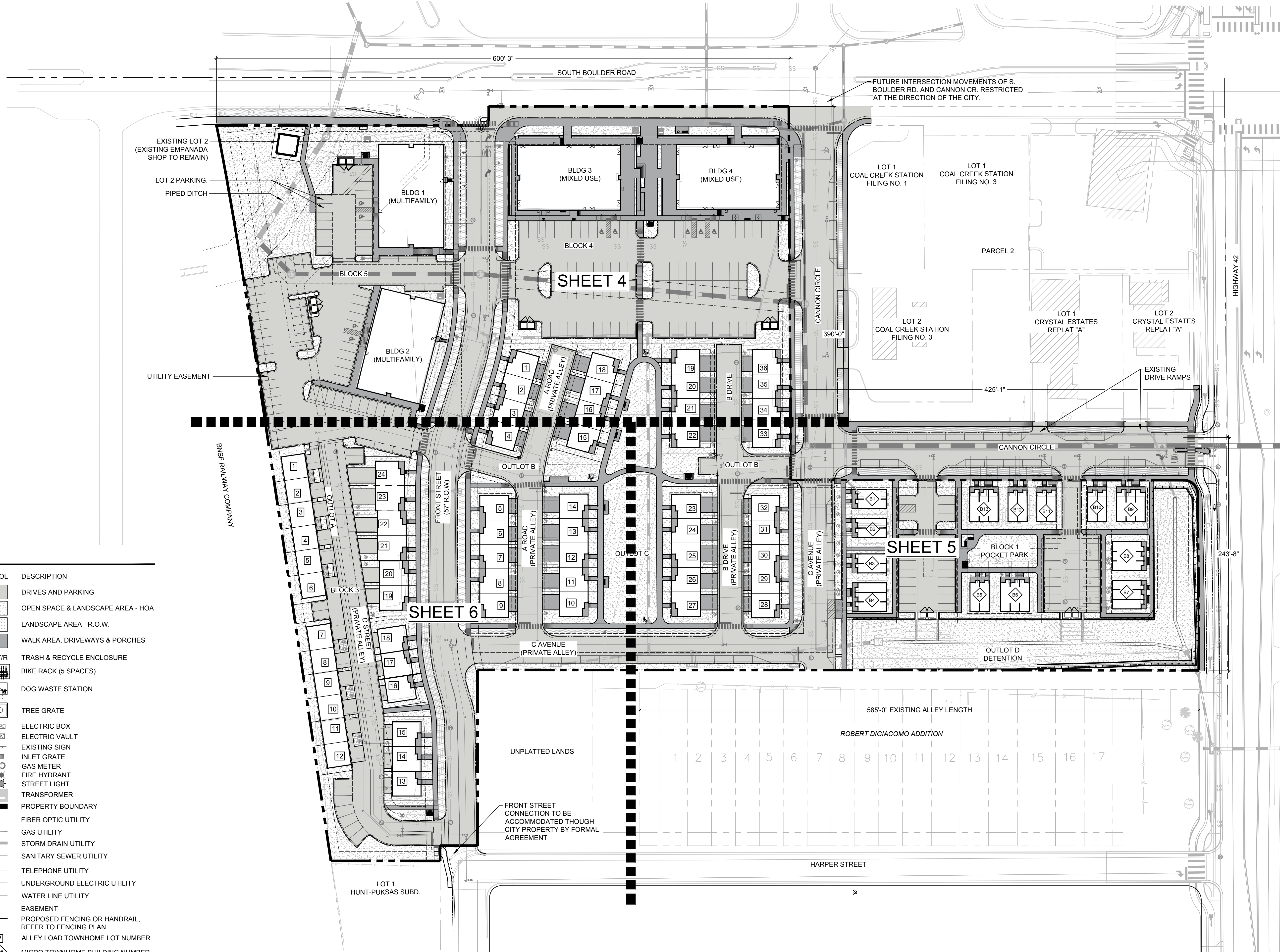
Appendix B: Site Plan

Plotted By: Megan McGregor Layout: S3 SITE PLAN Printed On: 2/27/2024 11:57 AM File Name: SITE PLAN.dwg

LEGEND

SYMBOL	DESCRIPTION
	DRIVES AND PARKING
	OPEN SPACE & LANDSCAPE AREA - HOA
	LANDSCAPE AREA - R.O.W.
	WALK AREA, DRIVEWAYS & PORCHES
	T/R TRASH & RECYCLE ENCLOSURE
	BIKE RACK (5 SPACES)
	DOG WASTE STATION
	TREE GRATE
	ELECTRIC BOX
	ELECTRIC VAULT
	EXISTING SIGN
	INLET GRATE
	GAS METER
	FIRE HYDRANT
	STREET LIGHT
	TRANSFORMER
	PROPERTY BOUNDARY
	FIBER OPTIC UTILITY
	GAS UTILITY
	STORM DRAIN UTILITY
	SANITARY SEWER UTILITY
	TELEPHONE UTILITY
	UNDERGROUND ELECTRIC UTILITY
	WATER LINE UTILITY
	EASEMENT
	PROPOSED FENCING OR HANDRAIL, REFER TO FENCING PLAN
	ALLEY LOAD TOWNHOME LOT NUMBER
	MICRO TOWNHOME BUILDING NUMBER
	U.E. UTILITY EASEMENT
	D.E. DRAINAGE EASEMENT
	E.A.E. EMERGENCY ACCESS EASEMENT
	S.M.E. SURFACE MAINTENANCE EASEMENT

NOTE:
+ CONCEPTUAL IMPROVEMENTS FOR HIGHWAY 42 SHOWN. DESIGN OF HIGHWAY 42 IMPROVEMENTS BY OTHERS.



COAL CREEK VILLAGE

PRELIMINARY PUD
AND SRU

LOUISVILLE, COLORADO

PREPARED BY:



PLANNER / LANDSCAPE ARCHITECT

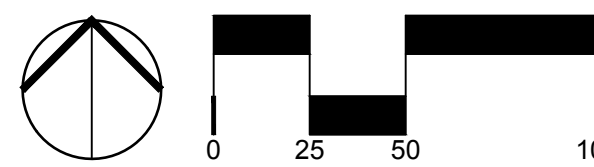
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LONGMONT, COLORADO 80501
P. 303.651.6626

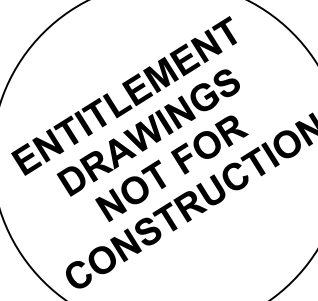


ISSUED		
No.	DESCRIPTION	DATE
1	PRELIMINARY PUD	1/22/2021
2	PRELIMINARY PUD RD 2	06/21/2021
3	PRELIMINARY PUD RD 3	06/17/2022
4	PRELIMINARY PUD RD 4	12/23/2022
5	PRELIMINARY PUD RD 5	08/04/2023
6	PRELIMINARY PUD RD 6	03/08/2024

REVISIONS		
No.	DESCRIPTION	DATE

SITE PLAN

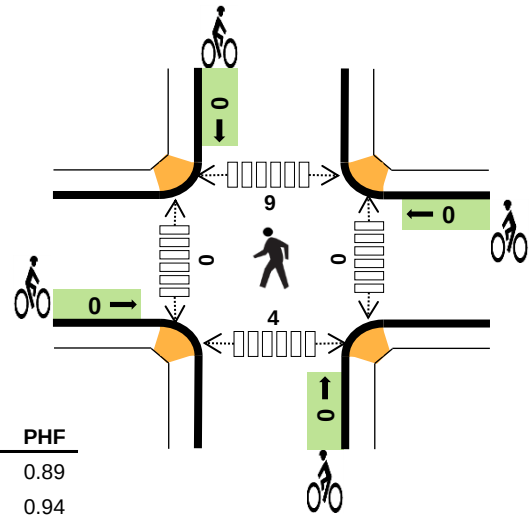
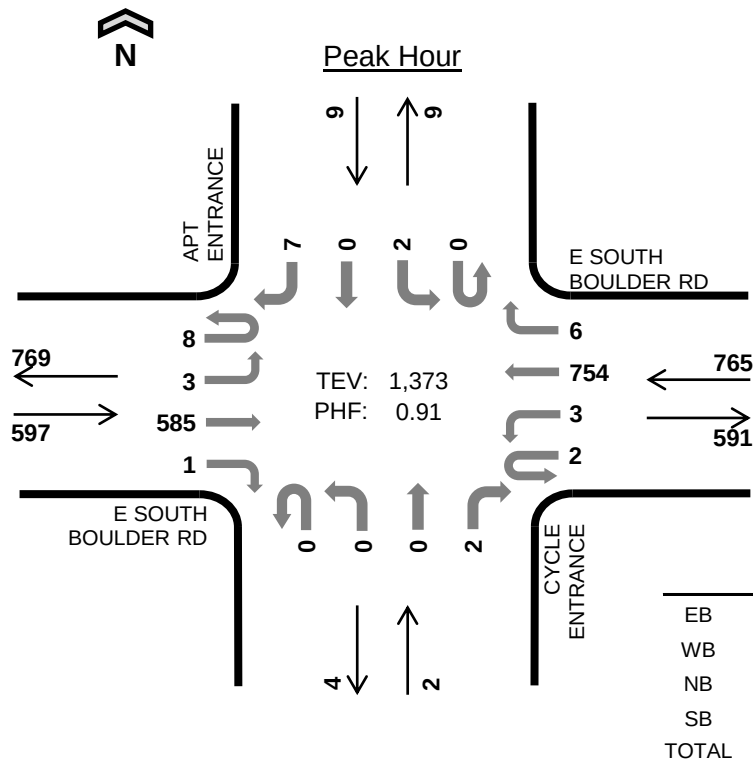
SEAL:



PROJECT No.:	R20-030
DRAWN BY:	
REVIEWED BY:	
DRAWING NUMBER:	

Appendix C: Traffic Counts

CYCLE ENTRANCE E SOUTH BOULDER RD



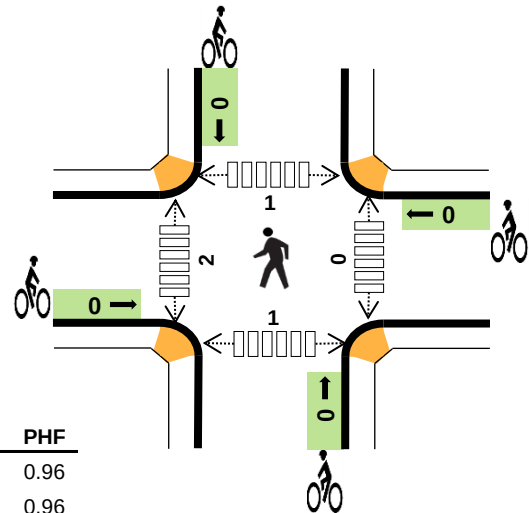
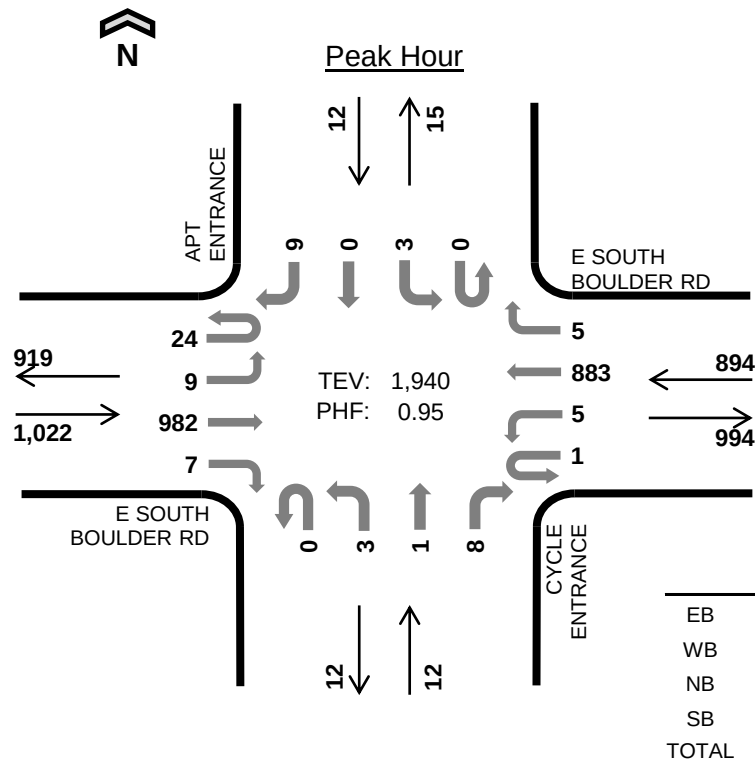
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				CYCLE ENTRANCE				APT ENTRANCE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	1	1	77	0	0	2	87	2	0	0	0	0	0	1	0	2	173	0
7:15 AM	0	0	91	0	0	0	129	3	0	0	0	0	0	1	0	2	226	0
7:30 AM	4	1	110	3	0	2	180	2	0	0	0	0	0	1	0	1	304	0
7:45 AM	2	0	123	1	0	2	191	0	0	0	0	0	0	0	0	1	320	1,023
8:00 AM	2	0	136	0	0	0	170	3	0	0	0	0	0	0	0	2	313	1,163
8:15 AM	2	1	128	0	1	0	191	0	0	0	0	0	0	0	0	0	323	1,260
8:30 AM	0	1	159	1	0	0	194	3	0	0	0	1	0	1	0	1	361	1,317
8:45 AM	4	1	162	0	1	3	199	0	0	0	0	1	0	1	0	4	376	1,373
Count Total	15	5	986	5	2	9	1,341	13	0	0	0	2	0	5	0	13	2,396	0
Peak Hour	8	3	585	1	2	3	754	6	0	0	0	2	0	2	0	7	1,373	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	4	0	0	7	1	0	0	0	1	0	0	2	0	2
7:15 AM	4	6	0	0	10	0	0	0	0	0	0	0	3	0	3
7:30 AM	2	11	0	0	13	0	0	0	1	1	0	0	2	1	3
7:45 AM	4	5	0	0	9	0	0	0	0	0	0	1	1	0	2
8:00 AM	2	8	0	0	10	0	0	0	0	0	0	0	4	2	6
8:15 AM	4	7	0	0	11	0	0	0	0	0	0	0	2	0	2
8:30 AM	5	12	0	0	17	0	0	0	0	0	0	0	2	2	4
8:45 AM	3	9	0	0	12	0	0	0	0	0	0	0	1	0	1
Count Total	27	62	0	0	89	1	0	0	1	2	0	1	17	5	23
Peak Hour	14	36	0	0	50	0	0	0	0	0	0	0	9	4	13

CYCLE ENTRANCE E SOUTH BOULDER RD



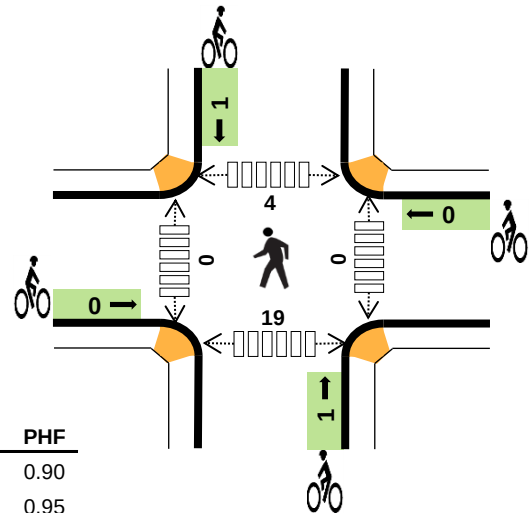
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				CYCLE ENTRANCE				APT ENTRANCE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	5	0	250	1	1	2	206	3	0	3	0	5	0	1	0	1	478	0
4:15 PM	7	2	255	0	0	2	226	0	0	0	0	2	0	1	0	1	496	0
4:30 PM	3	3	239	2	1	1	221	3	0	0	1	3	0	0	0	2	479	0
4:45 PM	5	1	236	3	0	0	207	1	0	1	0	1	0	0	0	2	457	1,910
5:00 PM	9	3	252	2	0	2	229	1	0	2	0	2	0	2	0	4	508	1,940
5:15 PM	6	0	239	1	1	2	222	0	0	2	0	4	0	1	0	1	479	1,923
5:30 PM	7	2	236	3	0	2	215	1	0	2	0	3	0	1	0	2	474	1,918
5:45 PM	8	0	235	0	0	2	205	1	0	0	0	4	0	0	0	1	456	1,917
Count Total	50	11	1,942	12	3	13	1,731	10	0	10	1	24	0	6	0	14	3,827	0
Peak Hour	24	9	982	7	1	5	883	5	0	3	1	8	0	3	0	9	1,940	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	6	4	1	0	11	0	0	0	0	0	0	0	2	0	2
4:15 PM	3	5	0	0	8	0	0	0	0	0	0	0	1	0	1
4:30 PM	3	0	0	0	3	0	0	0	0	0	0	2	0	0	2
4:45 PM	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	1	1
5:15 PM	1	4	0	0	5	0	0	0	0	0	0	0	1	2	3
5:30 PM	4	3	0	0	7	1	0	0	0	1	0	0	4	4	8
5:45 PM	4	1	0	0	5	0	0	0	1	1	0	0	0	3	3
Count Total	24	20	1	0	45	1	0	0	1	2	0	2	8	10	20
Peak Hour	9	8	0	0	17	0	0	0	0	0	0	2	1	1	4

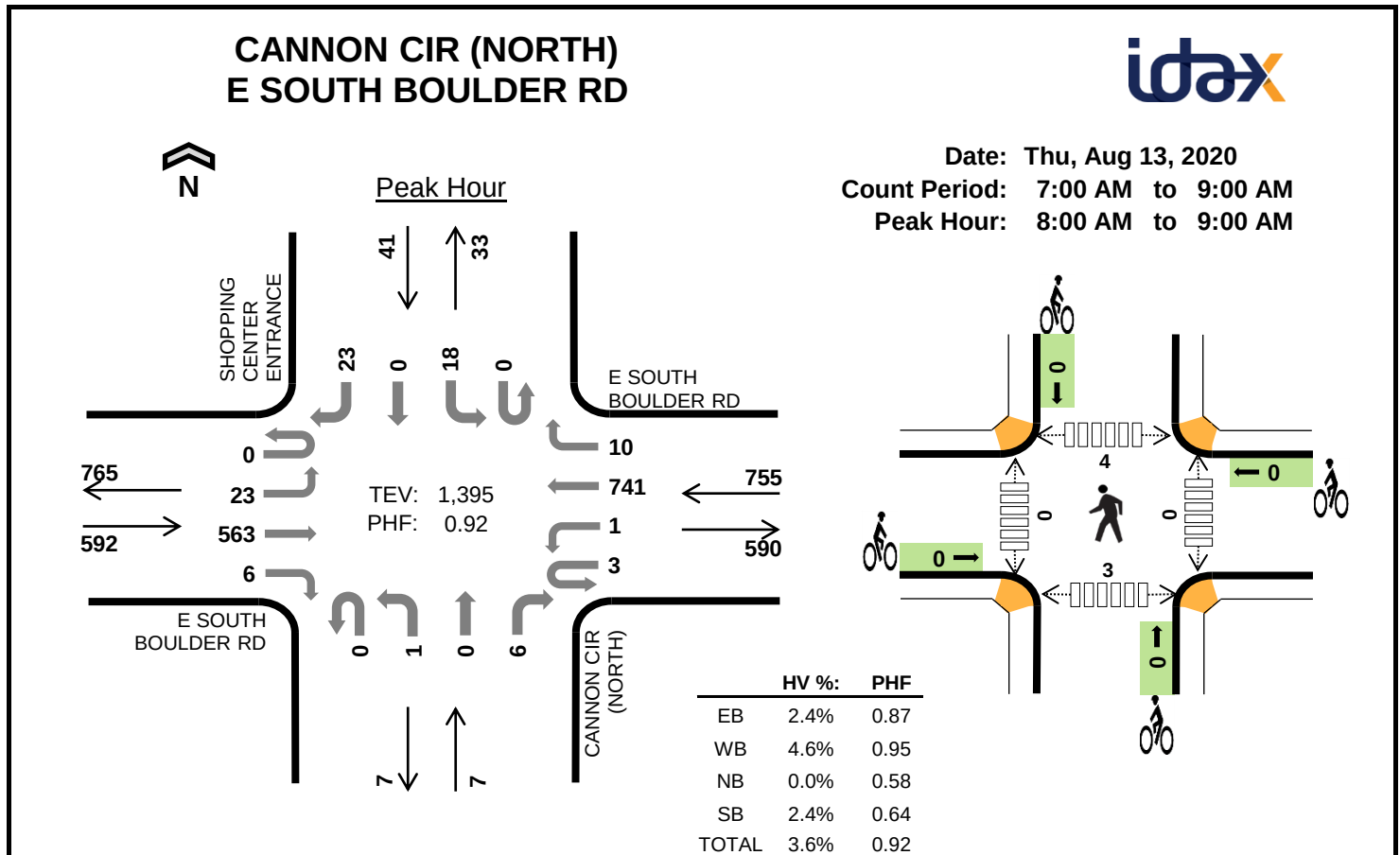
Peak Hour: 11:30 AM to 12:30 PM



	HV %:	PHF
EB	1.1%	0.90
WB	1.1%	0.95
NB	0.0%	0.63
SB	0.0%	0.58
TOTAL	1.1%	0.93

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				CYCLE ENTRANCE				APT ENTRANCE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	184	5	0	4	188	3	0	3	0	5	0	1	0	1	394	0
11:15 AM	0	0	180	1	0	2	188	1	0	2	0	6	0	1	0	2	383	0
11:30 AM	0	0	165	2	0	2	199	0	0	0	0	5	0	1	0	0	374	0
11:45 AM	0	0	192	2	0	3	202	1	0	2	0	2	0	1	0	1	406	1,557
12:00 PM	0	1	216	4	2	4	165	1	0	1	1	4	0	1	0	0	400	1,563
12:15 PM	0	1	211	2	1	3	201	1	0	0	0	10	0	1	0	2	433	1,613
12:30 PM	0	1	181	0	0	1	186	0	0	0	0	1	0	1	0	1	372	1,611
12:45 PM	0	1	184	2	1	5	183	0	0	3	0	2	0	0	0	1	382	1,587
Count Total	0	4	1,513	18	4	24	1,512	7	0	11	1	35	0	7	0	8	3,144	0
Peak Hour	0	2	784	10	3	12	767	3	0	3	1	21	0	4	0	3	1,613	0

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	2	3	0	0	5	2	0	0	0	2	0	0	3	0	3
11:15 AM	1	2	0	0	3	0	0	1	0	1	0	0	2	4	6
11:30 AM	3	3	0	0	6	0	0	0	0	0	0	0	1	4	5
11:45 AM	2	2	0	0	4	0	0	1	1	2	0	0	1	0	1
12:00 PM	3	1	0	0	4	0	0	0	0	0	0	0	1	3	4
12:15 PM	1	3	0	0	4	0	0	0	0	0	0	0	1	12	13
12:30 PM	3	0	0	0	3	0	0	0	0	0	0	1	1	2	4
12:45 PM	6	2	0	0	8	0	0	0	0	0	0	0	0	5	5
Count Total	21	16	0	0	37	2	0	2	1	5	0	1	10	30	41
Peak Hour	9	9	0	0	18	0	0	1	1	2	0	0	4	19	23



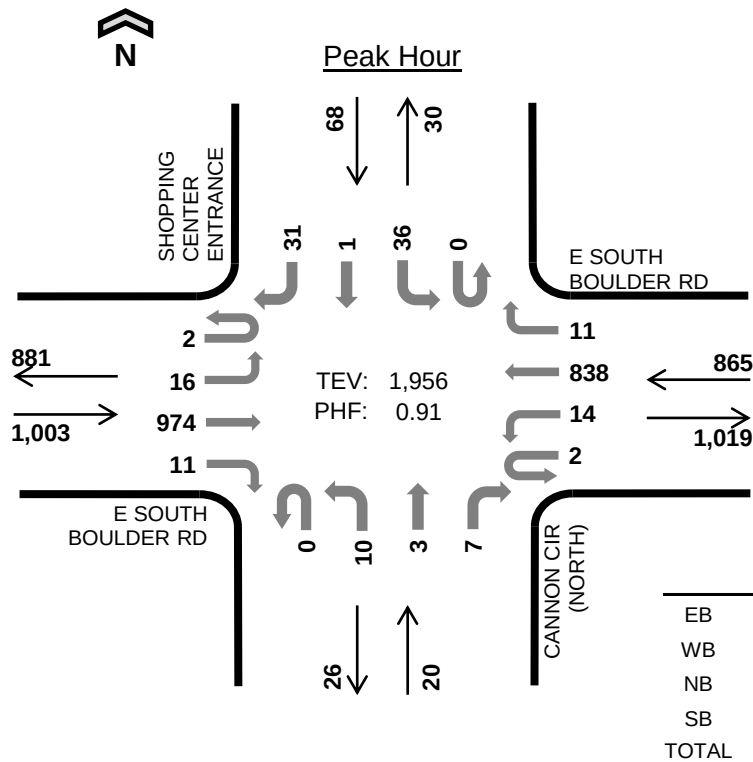
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				CANNON CIR (NORTH)				SHOPPING CENTER ENTRANCE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	73	1	0	0	87	0	0	0	0	0	0	0	0	6	167	0
7:15 AM	0	2	84	0	0	0	126	1	0	0	0	1	0	3	0	2	219	0
7:30 AM	0	1	117	0	0	1	185	3	0	0	0	0	0	6	0	5	318	0
7:45 AM	0	2	121	1	0	2	185	2	0	0	1	0	0	3	0	5	322	1,026
8:00 AM	0	6	126	1	0	1	169	3	0	1	0	1	0	6	0	2	316	1,175
8:15 AM	0	4	119	2	2	0	183	2	0	0	0	1	0	2	0	6	321	1,277
8:30 AM	0	8	163	0	1	0	194	1	0	0	0	1	0	3	0	6	377	1,336
8:45 AM	0	5	155	3	0	0	195	4	0	0	0	3	0	7	0	9	381	1,395
Count Total	0	28	958	8	3	4	1,324	16	0	1	1	7	0	30	0	41	2,421	0
Peak Hour	0	23	563	6	3	1	741	10	0	1	0	6	0	18	0	23	1,395	0

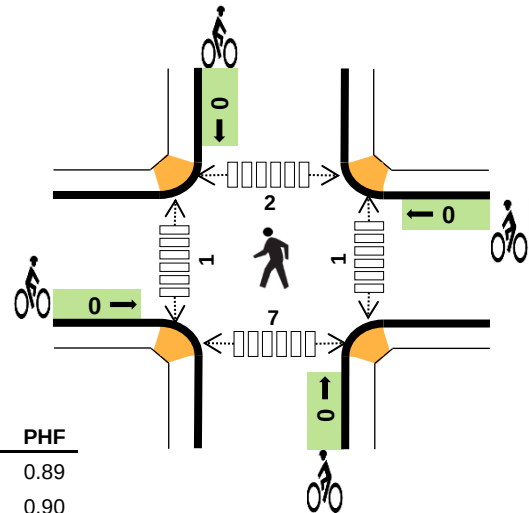
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

[illegible]

CANNON CIR (NORTH) E SOUTH BOULDER RD



Date: Thu, Aug 13, 2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



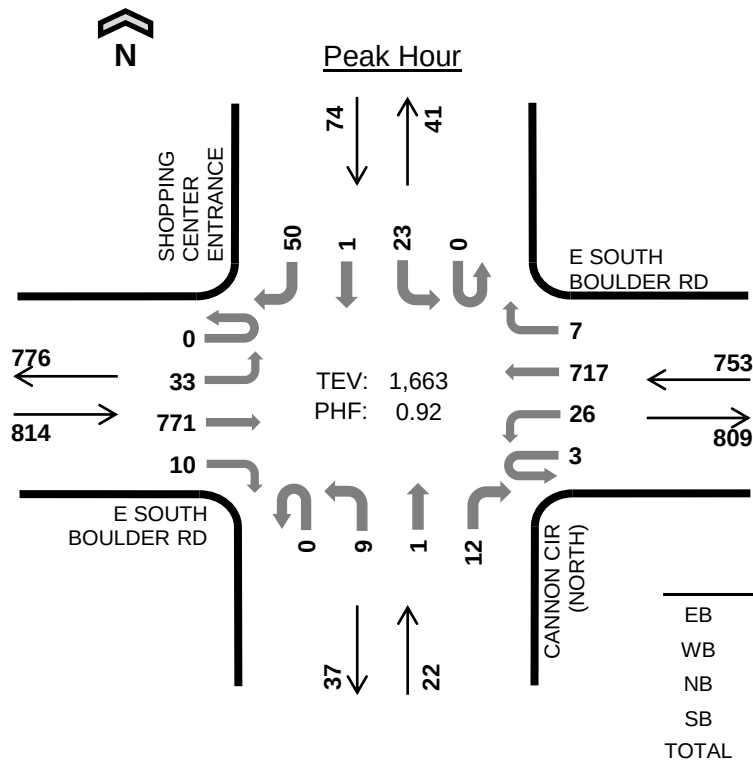
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				CANNON CIR (NORTH)				SHOPPING CENTER ENTRANCE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	1	7	256	2	0	3	203	5	0	0	0	2	0	6	0	19	504	0
4:15 PM	0	6	225	9	2	6	197	2	0	6	0	6	0	6	0	15	480	0
4:30 PM	1	10	244	4	3	2	219	2	0	0	0	3	0	5	0	11	504	0
4:45 PM	0	10	196	4	0	4	197	6	0	1	0	3	0	5	0	8	434	1,922
5:00 PM	1	3	275	3	0	3	232	4	0	1	0	0	0	5	0	8	535	1,953
5:15 PM	0	4	221	1	1	3	208	2	0	4	0	2	0	9	1	7	463	1,936
5:30 PM	1	5	251	5	1	2	208	4	0	1	2	0	0	8	0	10	498	1,930
5:45 PM	0	4	227	2	0	6	190	1	0	4	1	5	0	14	0	6	460	1,956
Count Total	4	49	1,895	30	7	29	1,654	26	0	17	3	21	0	58	1	84	3,878	0
Peak Hour	2	16	974	11	2	14	838	11	0	10	3	7	0	36	1	31	1,956	0

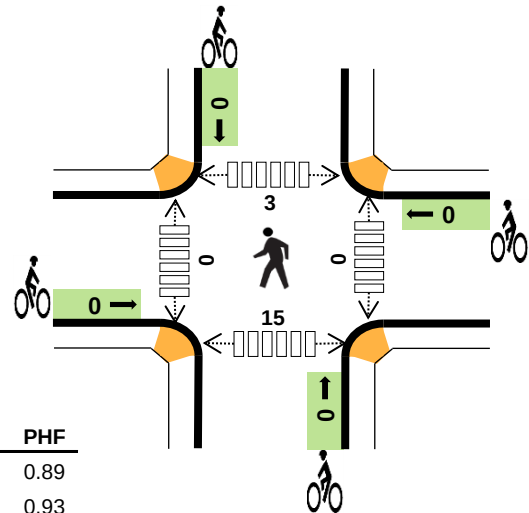
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	4	0	0	9	0	0	0	0	0	0	0	2	0	2
4:15 PM	4	3	0	1	8	0	0	0	0	0	1	0	1	0	2
4:30 PM	3	1	0	0	4	0	0	0	0	0	0	0	1	0	1
4:45 PM	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	2	0	0	3	0	0	0	0	0	0	0	0	1	1
5:15 PM	1	6	0	0	7	0	0	0	0	0	0	0	1	1	2
5:30 PM	3	0	0	0	3	0	0	0	0	0	0	1	1	3	5
5:45 PM	5	1	0	0	6	0	0	0	0	0	1	0	0	2	3
Count Total	24	19	0	1	44	0	0	0	0	0	2	1	6	7	16
Peak Hour	10	9	0	0	19	0	0	0	0	0	1	1	2	7	11

CANNON CIR (NORTH) E SOUTH BOULDER RD



Date: Sat, Aug 15, 2020
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:45 AM to 12:45 PM



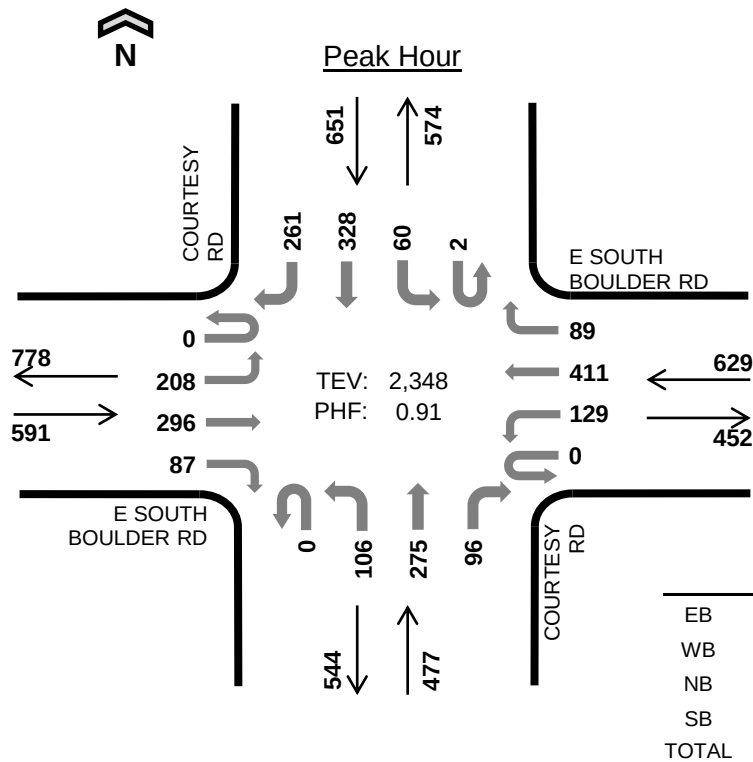
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				CANNON CIR (NORTH)				SHOPPING CENTER ENTRANCE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	5	175	5	1	3	186	2	0	3	2	3	0	4	0	10	399	0
11:15 AM	1	9	178	2	4	1	179	2	0	2	2	3	0	6	1	7	397	0
11:30 AM	0	8	164	0	0	1	184	1	0	1	0	1	0	9	0	10	379	0
11:45 AM	0	13	176	3	0	7	194	1	0	1	1	0	0	5	0	15	416	1,591
12:00 PM	0	7	198	4	1	5	161	2	0	1	0	4	0	6	0	14	403	1,595
12:15 PM	0	6	220	2	1	5	195	2	0	5	0	2	0	4	1	8	451	1,649
12:30 PM	0	7	177	1	1	9	167	2	0	2	0	6	0	8	0	13	393	1,663
12:45 PM	0	4	185	7	1	4	179	1	0	3	0	3	0	5	0	5	397	1,644
Count Total	1	59	1,473	24	9	35	1,445	13	0	18	5	22	0	47	2	82	3,235	0
Peak Hour	0	33	771	10	3	26	717	7	0	9	1	12	0	23	1	50	1,663	0

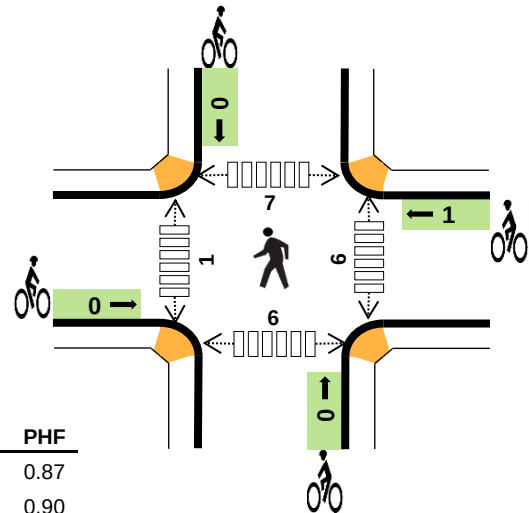
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0
11:15 AM	2	2	0	0	4	0	0	0	0	0	0	0	1	3	4
11:30 AM	3	2	0	1	6	0	0	0	0	0	0	0	1	5	6
11:45 AM	2	3	0	0	5	0	0	0	0	0	0	0	1	1	2
12:00 PM	3	1	0	0	4	0	0	0	0	0	0	0	0	3	3
12:15 PM	2	3	0	1	6	0	0	0	0	0	0	0	1	10	11
12:30 PM	3	1	0	0	4	0	0	0	0	0	0	0	1	1	2
12:45 PM	5	2	0	0	7	0	0	0	0	0	0	0	0	5	5
Count Total	21	17	0	2	40	0	0	0	0	0	0	0	5	28	33
Peak Hour	10	8	0	1	19	0	0	0	0	0	0	0	3	15	18

COURTESY RD E SOUTH BOULDER RD



Date: Thu, Aug 13, 2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



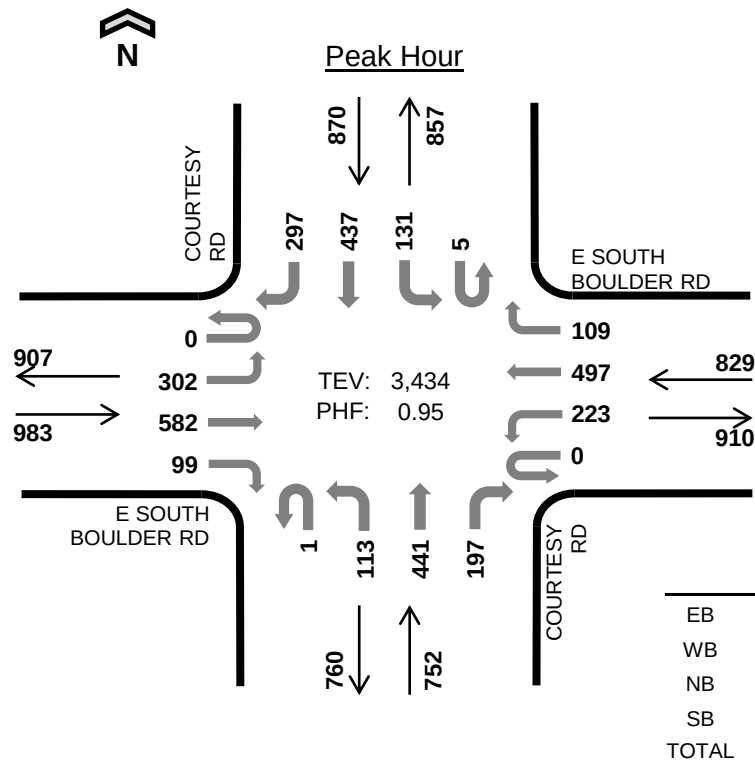
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				COURTESY RD				COURTESY RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	20	36	17	0	12	54	10	0	15	60	21	0	10	66	23	344	0
7:15 AM	0	30	37	18	0	20	77	14	0	21	54	16	0	8	81	35	411	0
7:30 AM	0	43	61	17	0	26	109	24	0	24	65	11	0	11	76	61	528	0
7:45 AM	0	40	61	22	0	29	93	26	0	26	68	33	0	16	89	79	582	1,865
8:00 AM	0	48	69	18	0	29	93	13	0	27	47	17	1	13	73	60	508	2,029
8:15 AM	0	48	63	18	0	30	97	22	0	27	67	25	0	22	81	69	569	2,187
8:30 AM	0	56	77	25	0	37	111	26	0	24	85	23	0	8	87	65	624	2,283
8:45 AM	0	56	87	26	0	33	110	28	0	28	76	31	1	17	87	67	647	2,348
Count Total	0	341	491	161	0	216	744	163	0	192	522	177	2	105	640	459	4,213	0
Peak Hour	0	208	296	87	0	129	411	89	0	106	275	96	2	60	328	261	2,348	0

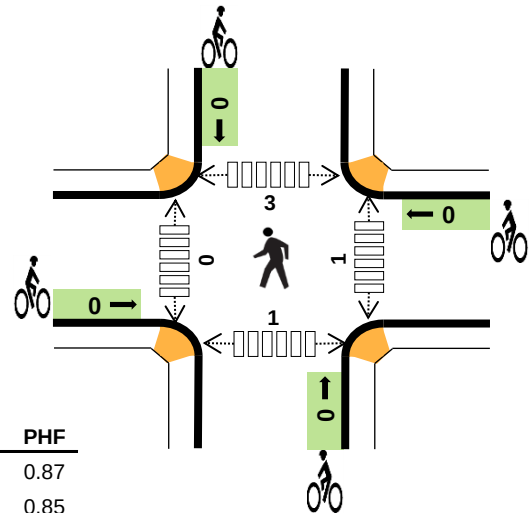
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	3	2	2	9	0	0	0	0	0	0	0	0	0	0
7:15 AM	3	6	1	5	15	0	0	0	0	0	0	0	3	0	3
7:30 AM	5	7	5	1	18	0	0	0	0	0	0	0	1	1	2
7:45 AM	3	5	5	1	14	0	0	0	0	0	0	0	0	0	0
8:00 AM	3	5	5	6	19	0	0	0	0	0	0	0	2	1	3
8:15 AM	4	9	4	5	22	0	0	0	0	0	3	0	1	2	6
8:30 AM	5	6	14	4	29	0	0	0	0	0	3	1	4	3	11
8:45 AM	2	11	8	3	24	0	1	0	0	1	0	0	0	0	0
Count Total	27	52	44	27	150	0	1	0	0	1	6	1	11	7	25
Peak Hour	14	31	31	18	94	0	1	0	0	1	6	1	7	6	20

COURTESY RD E SOUTH BOULDER RD



Date: Thu, Aug 13, 2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



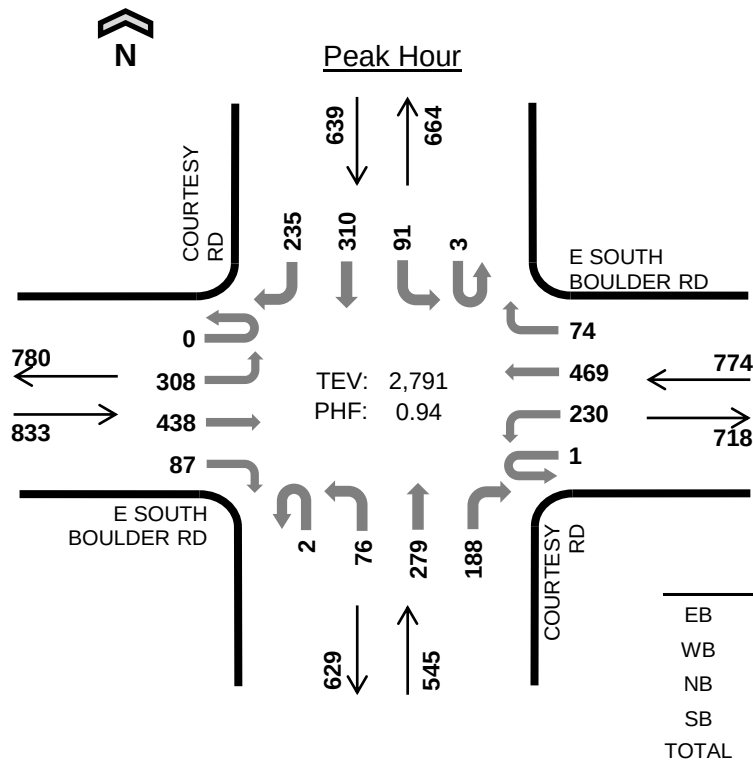
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				COURTESY RD				COURTESY RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	94	133	37	0	65	128	28	0	29	95	42	1	43	105	61	861	0
4:15 PM	0	94	120	19	0	47	117	24	0	26	120	51	0	33	122	66	839	0
4:30 PM	0	78	153	28	0	47	121	29	0	29	102	43	0	30	118	87	865	0
4:45 PM	0	62	124	18	0	51	117	24	1	23	113	54	1	31	113	65	797	3,362
5:00 PM	0	75	170	36	0	70	145	29	0	26	93	39	3	39	103	71	899	3,400
5:15 PM	0	87	135	17	0	55	114	27	0	35	133	61	1	31	103	74	873	3,434
5:30 PM	0	81	146	23	0	65	124	19	0	23	98	41	1	28	100	72	821	3,390
5:45 PM	0	83	125	31	0	47	97	17	2	36	103	53	0	27	120	66	807	3,400
Count Total	0	654	1,106	209	0	447	963	197	3	227	857	384	7	262	884	562	6,762	0
Peak Hour	0	302	582	99	0	223	497	109	1	113	441	197	5	131	437	297	3,434	0

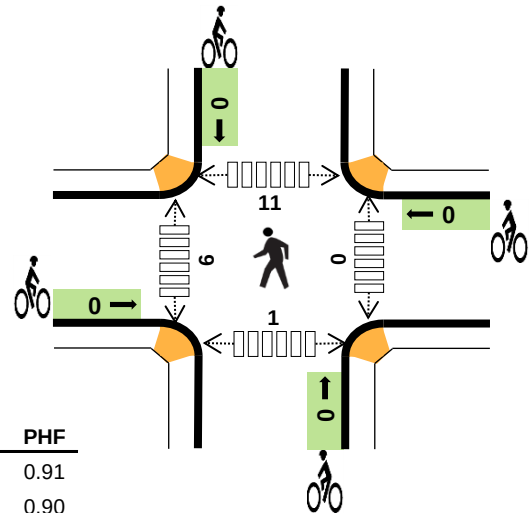
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	1	5	1	12	0	0	0	0	0	1	1	4	0	6
4:15 PM	3	3	3	6	15	0	0	0	0	0	0	3	2	0	5
4:30 PM	2	2	0	3	7	0	0	0	0	0	0	0	0	0	0
4:45 PM	2	2	6	3	13	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	3	0	2	6	0	0	0	0	0	1	0	0	1	2
5:15 PM	2	3	2	6	13	0	0	0	0	0	0	0	3	0	3
5:30 PM	3	2	3	0	8	0	0	0	0	0	0	0	5	2	7
5:45 PM	4	2	0	0	6	0	0	0	0	0	2	1	0	1	4
Count Total	22	18	19	21	80	0	0	0	0	0	4	5	14	4	27
Peak Hour	7	10	8	14	39	0	0	0	0	0	1	0	3	1	5

COURTESY RD E SOUTH BOULDER RD



Date: Sat, Aug 15, 2020
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:45 AM to 12:45 PM



Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				COURTESY RD				COURTESY RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	68	106	18	0	58	113	19	0	20	66	44	0	8	65	61	646	0
11:15 AM	0	67	106	19	0	47	111	23	0	23	58	45	0	17	103	52	671	0
11:30 AM	1	62	90	14	1	45	118	29	0	21	69	33	1	20	80	54	638	0
11:45 AM	0	71	96	19	0	76	124	15	0	16	67	38	0	25	83	65	695	2,650
12:00 PM	0	89	107	21	0	39	109	20	2	17	54	49	0	21	77	54	659	2,663
12:15 PM	0	73	126	29	1	53	122	18	0	25	82	49	1	19	78	63	739	2,731
12:30 PM	0	75	109	18	0	62	114	21	0	18	76	52	2	26	72	53	698	2,791
12:45 PM	0	68	103	13	0	55	117	19	0	10	79	56	0	17	91	62	690	2,786
Count Total	1	573	843	151	2	435	928	164	2	150	551	366	4	153	649	464	5,436	0
Peak Hour	0	308	438	87	1	230	469	74	2	76	279	188	3	91	310	235	2,791	0

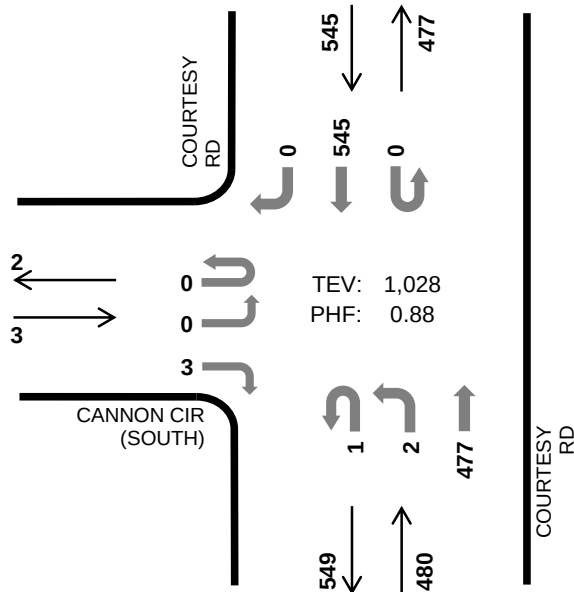
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	3	2	0	3	8	0	0	0	0	0	1	0	1	0	2
11:15 AM	1	2	1	2	6	0	0	0	0	0	1	1	3	2	7
11:30 AM	3	2	1	1	7	0	0	0	0	0	0	1	2	1	4
11:45 AM	1	3	1	0	5	0	0	0	0	0	0	0	2	0	2
12:00 PM	4	2	2	0	8	0	0	0	0	0	0	0	1	1	2
12:15 PM	3	2	0	2	7	0	0	0	0	0	0	5	6	0	11
12:30 PM	3	1	1	1	6	0	0	0	0	0	0	1	2	0	3
12:45 PM	3	1	2	2	8	0	0	0	0	0	0	3	3	0	6
Count Total	21	15	8	11	55	0	0	0	0	0	2	11	20	4	37
Peak Hour	11	8	4	3	26	0	0	0	0	0	0	6	11	1	18

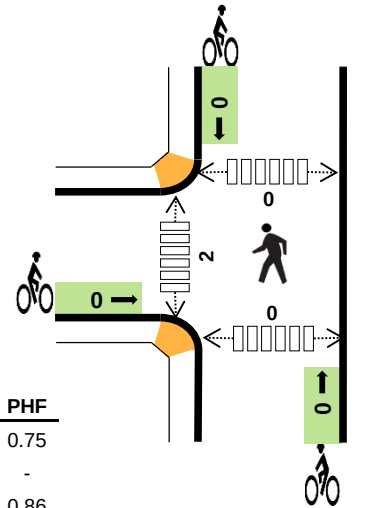
COURTESY RD CANNON CIR (SOUTH)



Peak Hour



Date: Thu, Aug 13, 2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	0.0%	0.75
WB	-	-
NB	6.5%	0.86
SB	2.6%	0.90
TOTAL	4.4%	0.88

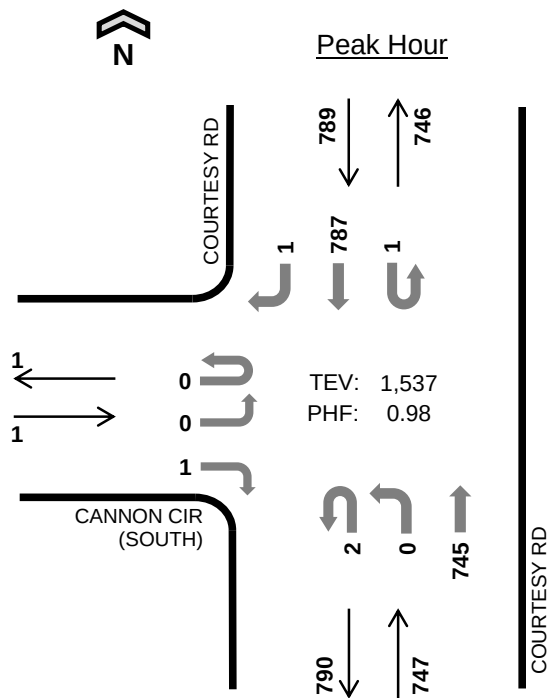
Two-Hour Count Summaries

Interval Start	CANNON CIR (SOUTH)				0				COURTESY RD Northbound				COURTESY RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	100	0	0	0	96	0	196	0
7:15 AM	0	0	0	0	0	0	0	0	1	0	82	0	0	0	125	0	208	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	108	0	0	0	120	0	228	0
7:45 AM	0	1	0	0	0	0	0	0	0	1	120	0	0	0	140	1	263	895
8:00 AM	0	0	0	1	0	0	0	0	0	0	106	0	0	0	115	0	222	921
8:15 AM	0	0	0	1	0	0	0	0	0	1	110	0	0	0	127	0	239	952
8:30 AM	0	0	0	0	0	0	0	0	1	0	139	0	0	0	152	0	292	1,016
8:45 AM	0	0	0	1	0	0	0	0	0	1	122	0	0	0	151	0	275	1,028
Count Total	0	1	0	3	0	0	0	0	2	3	887	0	0	0	1,026	1	1,923	0
Peak Hour	0	0	0	3	0	0	0	0	1	2	477	0	0	0	545	0	1,028	0

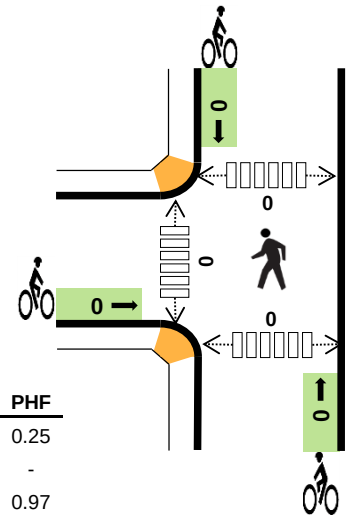
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	3	3	6	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	5	2	7	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	6	3	9	0	0	0	0	0	0	1	0	0	1
8:15 AM	0	0	5	2	7	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	13	5	18	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	7	4	11	0	0	0	0	0	0	1	0	0	1
Count Total	0	0	45	19	64	0	0	0	0	0	0	2	0	0	2
Peak Hr	0	0	31	14	45	0	0	0	0	0	0	2	0	0	2

COURTESY RD CANNON CIR (SOUTH)



Date: Thu, Aug 13, 2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	0.0%	0.25
WB	-	-
NB	1.5%	0.97
SB	1.9%	0.93
TOTAL	1.7%	0.98

Two-Hour Count Summaries

Interval Start	CANNON CIR (SOUTH)				0				COURTESY RD Northbound				COURTESY RD Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	173	0	0	0	213	0	386	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	189	0	0	0	190	0	379	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	184	0	1	0	198	1	385	0
4:45 PM	0	0	0	0	0	0	0	0	2	0	190	0	0	0	188	0	380	1,530
5:00 PM	0	0	0	0	0	0	0	0	0	0	182	0	0	0	211	0	393	1,537
5:15 PM	0	0	0	0	0	0	0	0	0	0	184	0	2	0	170	0	356	1,514
5:30 PM	0	0	0	0	0	0	0	0	1	0	179	0	0	0	187	0	367	1,496
5:45 PM	0	1	0	1	0	0	0	0	0	0	186	0	1	0	196	2	387	1,503
Count Total	0	1	0	2	0	0	0	0	3	0	1,467	0	4	0	1,553	3	3,033	0
Peak Hour	0	0	0	1	0	0	0	0	2	0	745	0	1	0	787	1	1,537	0

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

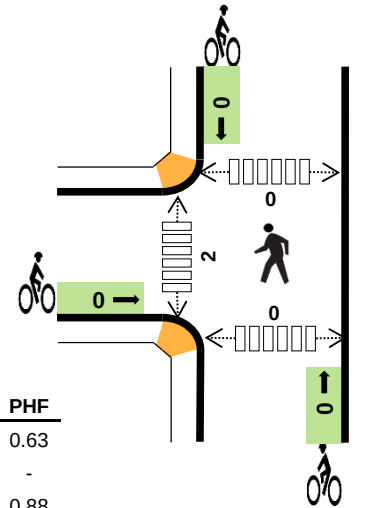
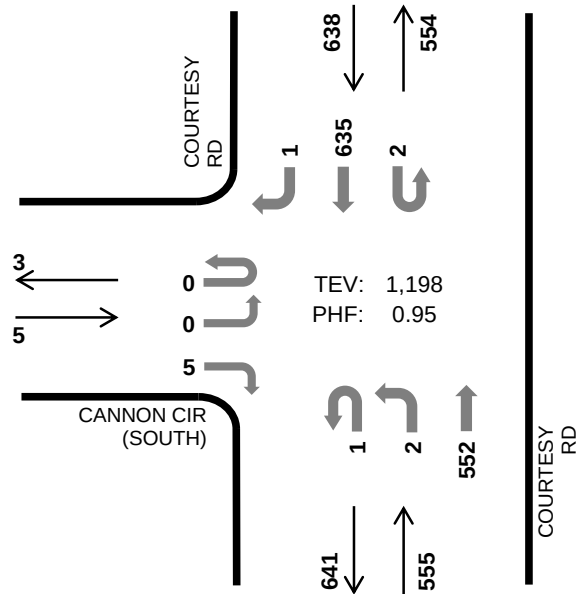
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	2	6	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	3	6	9	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	3	4	7	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	4	2	6	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	2	5	7	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	2	3	0	0	0	0	0	0	1	0	0	1
Count Total	0	0	19	24	43	0	0	0	0	0	0	1	0	0	1
Peak Hr	0	0	11	15	26	0	0	0	0	0	0	0	0	0	0

COURTESY RD CANNON CIR (SOUTH)



Peak Hour

Date: Sat, Aug 15, 2020
Count Period: 11:00 AM to 1:00 PM
Peak Hour: 11:45 AM to 12:45 PM



	HV %:	PHF
EB	0.0%	0.63
WB	-	-
NB	0.7%	0.88
SB	0.8%	0.89
TOTAL	0.8%	0.95

Two-Hour Count Summaries

Interval Start	CANNON CIR (SOUTH)				0				COURTESY RD				COURTESY RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	1	0	0	0	0	0	0	0	0	128	0	0	0	133	1	263	0
11:15 AM	0	1	0	2	0	0	0	0	0	1	127	0	1	0	168	2	302	0
11:30 AM	0	0	0	0	0	0	0	0	1	0	118	0	1	0	139	0	259	0
11:45 AM	0	0	0	1	0	0	0	0	0	1	133	0	0	0	180	0	315	1,139
12:00 PM	0	0	0	2	0	0	0	0	0	1	116	0	0	0	146	1	266	1,142
12:15 PM	0	0	0	2	0	0	0	0	0	0	158	0	1	0	155	0	316	1,156
12:30 PM	0	0	0	0	0	0	0	0	1	0	145	0	1	0	154	0	301	1,198
12:45 PM	0	0	0	0	0	0	0	0	0	0	137	0	0	0	162	0	299	1,182
Count Total	0	2	0	7	0	0	0	0	2	3	1,062	0	4	0	1,237	4	2,321	0
Peak Hour	0	0	0	5	0	0	0	0	1	2	552	0	2	0	635	1	1,198	0

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

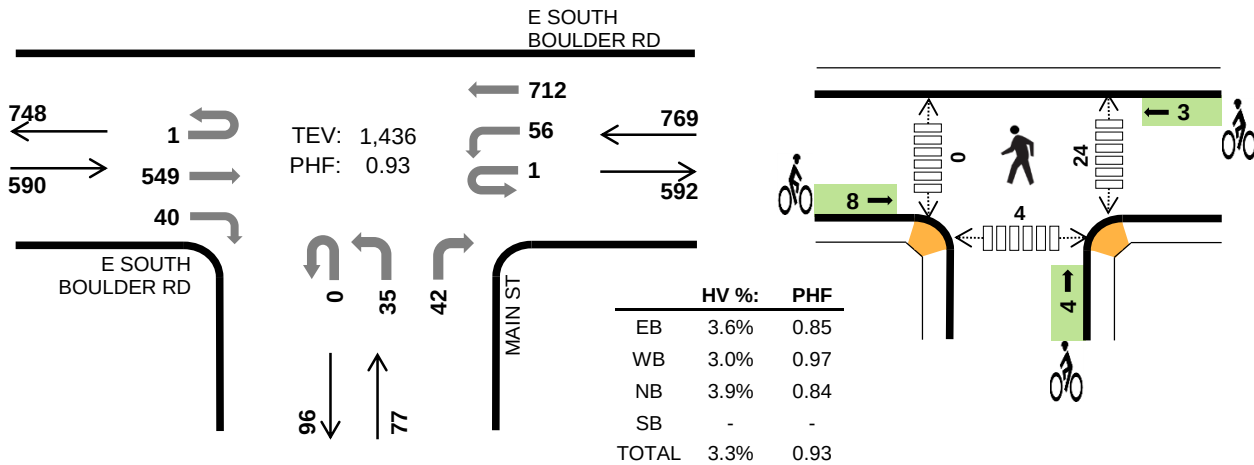
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	2	1	3	0	0	0	0	0	0	1	0	0	1
11:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	1	1	2	0	0	0	0	0	0	1	0	0	1
12:00 PM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	1	1	2	0	0	0	0	0	0	1	0	0	1
12:45 PM	0	0	2	1	3	0	0	0	0	0	0	2	0	0	2
Count Total	0	0	8	9	17	0	0	0	0	0	0	5	0	0	5
Peak Hr	0	0	4	5	9	0	0	0	0	0	0	2	0	0	2

MAIN ST E SOUTH BOULDER RD



Peak Hour

Date: Thu, Aug 20, 2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				MAIN ST				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	83	4	1	8	98	0	0	3	0	6	0	0	0	0	203	0
7:15 AM	0	0	85	2	0	5	109	0	0	3	0	9	0	0	0	0	213	0
7:30 AM	0	0	118	2	0	9	156	0	0	5	0	9	0	0	0	0	299	0
7:45 AM	0	0	122	2	0	22	191	0	0	7	0	18	0	0	0	0	362	1,077
8:00 AM	0	0	127	11	0	14	170	0	0	8	0	12	0	0	0	0	342	1,216
8:15 AM	0	0	112	6	1	12	174	0	0	9	0	11	0	0	0	0	325	1,328
8:30 AM	0	0	155	6	0	16	183	0	0	14	0	9	0	0	0	0	383	1,412
8:45 AM	1	0	155	17	0	14	185	0	0	4	0	10	0	0	0	0	386	1,436
Count Total	1	0	957	50	2	100	1,266	0	0	53	0	84	0	0	0	0	2,513	0
Peak Hour	1	0	549	40	1	56	712	0	0	35	0	42	0	0	0	0	1,436	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	8	1	0	9	1	0	1	0	2	3	0	0	1	4
7:15 AM	0	5	0	0	5	1	2	2	0	5	1	0	0	0	1
7:30 AM	4	7	1	0	12	2	0	1	0	3	5	0	0	1	6
7:45 AM	3	5	1	0	9	1	2	1	0	4	2	0	0	1	3
8:00 AM	3	2	1	0	6	1	1	2	0	4	4	0	0	2	6
8:15 AM	6	3	1	0	10	4	1	0	0	5	7	0	0	1	8
8:30 AM	3	10	1	0	14	2	1	2	0	5	6	0	0	1	7
8:45 AM	9	8	0	0	17	1	0	0	0	1	7	0	0	0	7
Count Total	28	48	6	0	82	13	7	9	0	29	35	0	0	7	42
Peak Hr	21	23	3	0	47	8	3	4	0	15	24	0	0	4	28

MAIN ST E SOUTH BOULDER RD

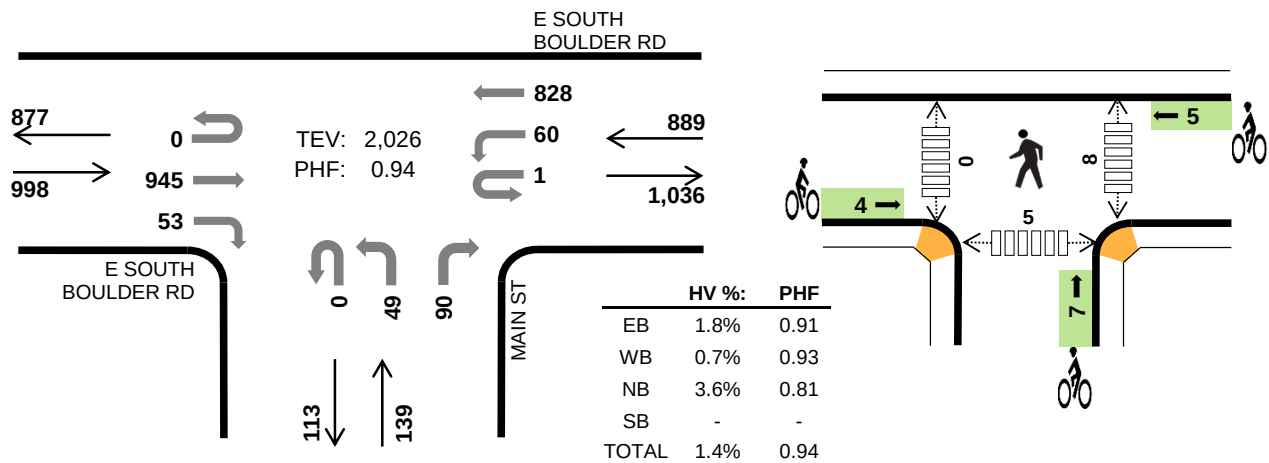


Peak Hour

Date: Thu, Aug 20, 2020

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:15 PM to 5:15 PM



Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				MAIN ST				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	246	13	0	17	211	0	0	13	0	28	0	0	0	0	528	0
4:15 PM	0	0	230	12	0	11	228	0	0	13	0	15	0	0	0	0	509	0
4:30 PM	0	0	232	13	0	9	196	0	0	8	0	23	0	0	0	0	481	0
4:45 PM	0	0	221	15	1	19	203	0	0	13	0	24	0	0	0	0	496	2,014
5:00 PM	0	0	262	13	0	21	201	0	0	15	0	28	0	0	0	0	540	2,026
5:15 PM	0	0	245	20	0	16	180	0	0	19	0	24	0	0	0	0	504	2,021
5:30 PM	0	0	206	14	1	20	173	0	0	14	0	17	0	0	0	0	445	1,985
5:45 PM	0	0	231	15	0	17	205	0	0	15	0	16	0	0	0	0	499	1,988
Count Total	0	0	1,873	115	2	130	1,597	0	0	110	0	175	0	0	0	0	4,002	0
Peak Hour	0	0	945	53	1	60	828	0	0	49	0	90	0	0	0	0	2,026	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	11	3	1	0	15	1	1	1	0	3	2	0	0	0	2
4:15 PM	4	3	1	0	8	2	1	2	0	5	1	0	0	1	2
4:30 PM	6	1	1	0	8	1	1	0	0	2	5	0	0	1	6
4:45 PM	3	1	2	0	6	1	1	2	0	4	0	0	0	2	2
5:00 PM	5	1	1	0	7	0	2	3	0	5	2	0	0	1	3
5:15 PM	2	5	0	0	7	0	1	1	0	2	3	0	0	0	3
5:30 PM	4	2	1	0	7	1	0	0	0	1	0	0	0	0	0
5:45 PM	0	1	0	0	1	1	1	1	0	3	2	0	0	1	3
Count Total	35	17	7	0	59	7	8	10	0	25	15	0	0	6	21
Peak Hr	18	6	5	0	29	4	5	7	0	16	8	0	0	5	13

MAIN ST E SOUTH BOULDER RD



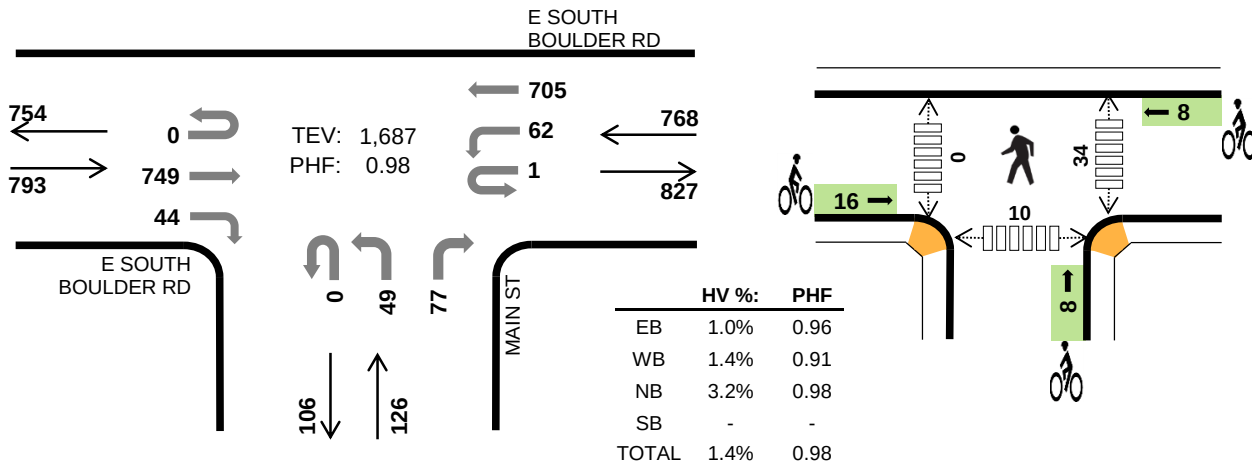
Peak Hour



Date: Sat, Aug 22, 2020

Count Period: 11:00 AM to 1:00 PM

Peak Hour: 11:15 AM to 12:15 PM



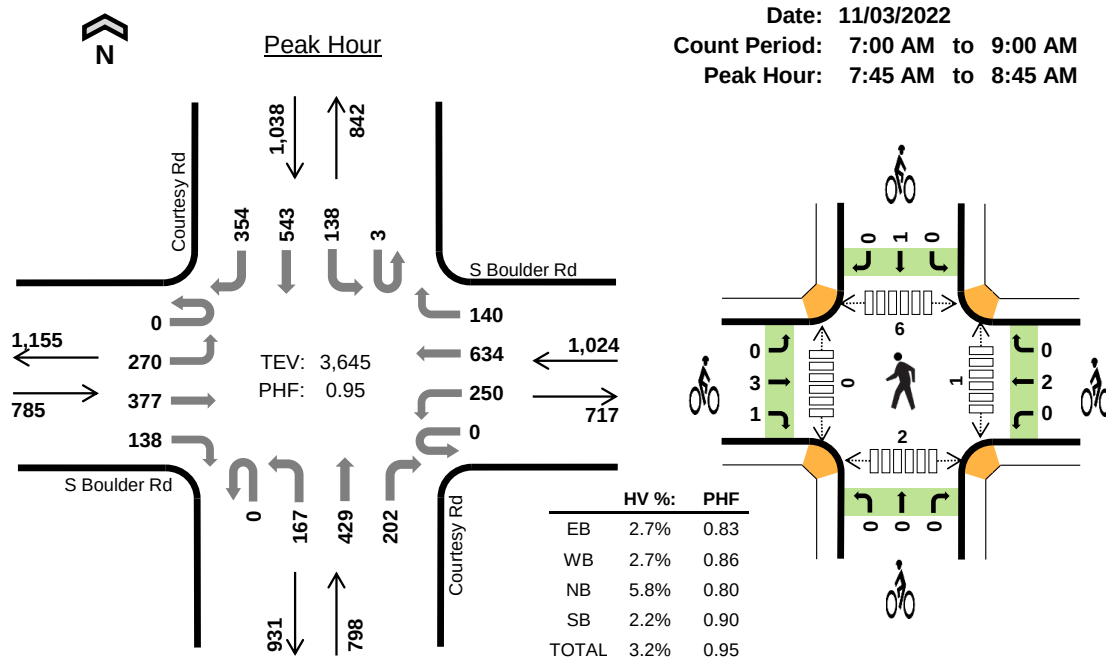
Two-Hour Count Summaries

Interval Start	E SOUTH BOULDER RD				E SOUTH BOULDER RD				MAIN ST				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	148	8	0	19	157	0	0	15	0	26	0	0	0	0	373	0
11:15 AM	0	0	182	12	1	18	176	0	0	13	0	19	0	0	0	0	421	0
11:30 AM	0	0	193	11	0	13	170	0	0	14	0	16	0	0	0	0	417	0
11:45 AM	0	0	175	13	0	18	194	0	0	8	0	24	0	0	0	0	432	1,643
12:00 PM	0	0	199	8	0	13	165	0	0	14	0	18	0	0	0	0	417	1,687
12:15 PM	0	0	177	12	1	13	162	0	0	10	0	21	0	0	0	0	396	1,662
12:30 PM	0	0	177	10	0	19	169	0	0	12	0	24	0	0	0	0	411	1,656
12:45 PM	0	0	179	12	0	20	203	0	0	9	0	34	0	0	0	0	457	1,681
Count Total	0	0	1,430	86	2	133	1,396	0	0	95	0	182	0	0	0	0	3,324	0
Peak Hour	0	0	749	44	1	62	705	0	0	49	0	77	0	0	0	0	1,687	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	0	0	1	0	1	6	2	1	0	9	17	0	0	3	20
11:15 AM	1	6	0	0	7	4	0	0	0	4	11	0	0	6	17
11:30 AM	4	2	1	0	7	8	5	6	0	19	9	0	0	0	9
11:45 AM	2	2	1	0	5	1	2	2	0	5	6	0	0	2	8
12:00 PM	1	1	2	0	4	3	1	0	0	4	8	0	0	2	10
12:15 PM	2	4	2	0	8	2	0	0	0	2	7	0	0	0	7
12:30 PM	4	0	1	0	5	1	0	0	0	1	4	0	0	4	8
12:45 PM	0	4	1	0	5	0	1	0	0	1	15	0	0	0	15
Count Total	14	19	9	0	42	25	11	9	0	45	77	0	0	17	94
Peak Hr	8	11	4	0	23	16	8	8	0	32	34	0	0	10	44

Courtesy Rd S Boulder Rd



Two-Hour Count Summaries

Interval Start		S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	17	35	20	0	15	62	18	0	13	58	12	0	14	70	38	372	0
7:15 AM		0	39	55	27	0	36	104	16	0	22	60	30	1	11	114	59	574	0
7:30 AM		0	46	97	22	0	33	136	25	0	30	73	27	1	17	134	76	717	0
7:45 AM		0	42	64	30	0	61	146	24	0	35	108	40	2	20	165	93	830	2,493
8:00 AM		0	75	96	45	0	59	184	34	0	49	98	50	0	37	131	83	941	3,062
8:15 AM		0	62	109	26	0	52	129	38	0	42	129	79	0	52	142	95	955	3,443
8:30 AM		0	91	108	37	0	78	175	44	0	41	94	33	1	29	105	83	919	3,645
8:45 AM		0	56	61	24	0	49	126	34	0	37	131	39	0	17	135	90	799	3,614
Count Total		0	428	625	231	0	383	1,062	233	0	269	751	310	5	197	996	617	6,107	0
Peak Hour	All	0	270	377	138	0	250	634	140	0	167	429	202	3	138	543	354	3,645	0
	HV	0	6	12	3	0	6	20	2	0	10	33	3	0	7	8	8	118	0
	HV%	-	2%	3%	2%	-	2%	3%	1%	-	6%	8%	1%	0%	5%	1%	2%	3%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	4	2	5	13	1	0	0	0	1	0	0	1	1	2
7:15 AM	4	12	3	5	24	0	0	0	0	0	1	0	2	1	4
7:30 AM	2	6	4	4	16	0	0	1	0	1	0	0	2	0	2
7:45 AM	3	5	8	3	19	1	0	0	0	1	1	0	2	0	3
8:00 AM	7	5	14	4	30	1	1	0	0	2	0	0	1	0	1
8:15 AM	5	9	11	8	33	2	0	0	1	3	0	0	3	2	5
8:30 AM	6	9	13	8	36	0	1	0	0	1	0	0	0	0	0
8:45 AM	1	12	8	3	24	0	3	0	0	3	0	0	0	1	1
Count Total	30	62	63	40	195	5	5	1	1	12	2	0	11	5	18
Peak Hour	21	28	46	23	118	4	2	0	1	7	1	0	6	2	9

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	4	0	0	0	2	0	0	0	4	1	13	0
7:15 AM	0	1	3	0	0	1	10	1	0	2	1	0	0	0	4	1	24	0
7:30 AM	0	1	1	0	0	0	5	1	0	0	4	0	0	0	1	3	16	0
7:45 AM	0	1	1	1	0	1	4	0	0	0	7	1	0	0	1	2	19	72
8:00 AM	0	1	5	1	0	1	3	1	0	4	10	0	0	0	3	1	30	89
8:15 AM	0	1	3	1	0	2	7	0	0	3	7	1	0	4	3	1	33	98
8:30 AM	0	3	3	0	0	2	6	1	0	3	9	1	0	3	1	4	36	118
8:45 AM	0	0	1	0	0	3	7	2	0	1	5	2	0	0	1	2	24	123
Count Total	0	8	19	3	0	10	46	6	0	13	45	5	0	7	18	15	195	0
Peak Hour	0	6	12	3	0	6	20	2	0	10	33	3	0	7	8	8	118	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S Boulder Rd			S Boulder Rd			Courtesy Rd			Courtesy Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0			
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0			
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	3			
8:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	2	4			
8:15 AM	0	2	0	0	0	0	0	0	0	0	1	0	3	7			
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	7			
8:45 AM	0	0	0	1	2	0	0	0	0	0	0	0	3	9			
Count Total	0	4	1	1	4	0	0	1	0	0	1	0	12	0			
Peak Hour	0	3	1	0	2	0	0	0	0	0	1	0	7	0			

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

Courtesy Rd S Boulder Rd

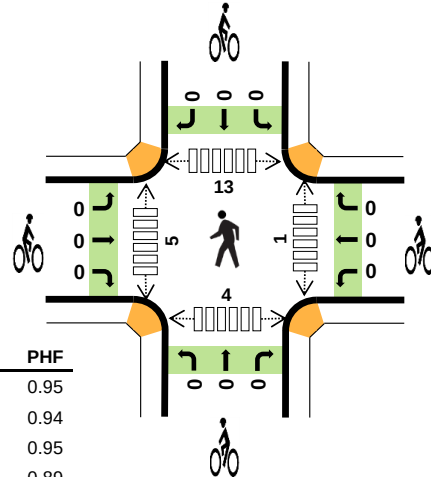
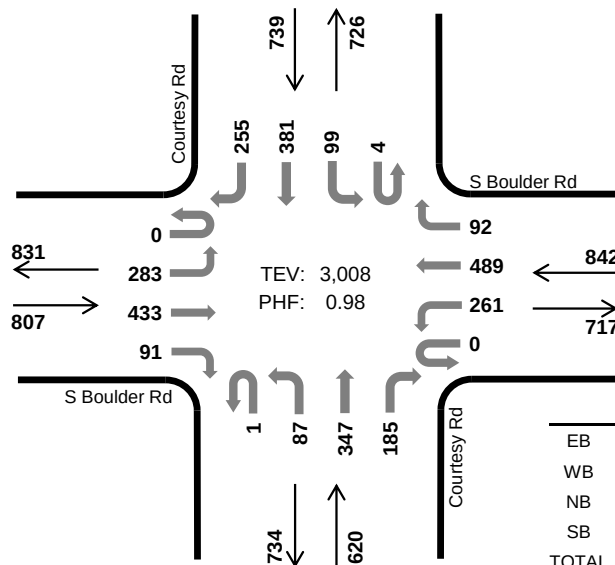


Peak Hour

Date: 11/05/2022

Count Period: 11:00 AM to 1:00 PM

Peak Hour: 11:45 AM to 12:45 PM



	HV %:	PHF
EB	0.9%	0.95
WB	0.7%	0.94
NB	0.6%	0.95
SB	0.3%	0.89
TOTAL	0.6%	0.98

Two-Hour Count Summaries

Interval Start		S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM		0	60	86	22	0	58	117	24	0	21	71	52	1	27	92	65	696	0
11:15 AM		1	83	101	16	2	74	122	20	0	28	75	52	2	23	100	56	755	0
11:30 AM		0	64	76	24	0	48	121	24	1	25	83	45	0	28	91	51	681	0
11:45 AM		0	63	105	26	0	71	126	28	0	22	83	34	0	30	104	73	765	2,897
12:00 PM		0	70	116	14	0	68	109	20	0	21	94	47	2	23	93	48	725	2,926
12:15 PM		0	73	110	29	0	57	137	18	0	25	85	45	2	19	92	64	756	2,927
12:30 PM		0	77	102	22	0	65	117	26	1	19	85	59	0	27	92	70	762	3,008
12:45 PM		0	70	99	15	0	59	119	27	0	19	79	42	0	27	94	74	724	2,967
Count Total		1	560	795	168	2	500	968	187	2	180	655	376	7	204	758	501	5,864	0
Peak Hour	All	0	283	433	91	0	261	489	92	1	87	347	185	4	99	381	255	3,008	0
	HV	0	4	3	0	0	1	4	1	0	2	2	0	0	0	0	2	19	0
	HV%	-	1%	1%	0%	-	0%	1%	1%	0%	2%	1%	0%	0%	0%	0%	1%	1%	0

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

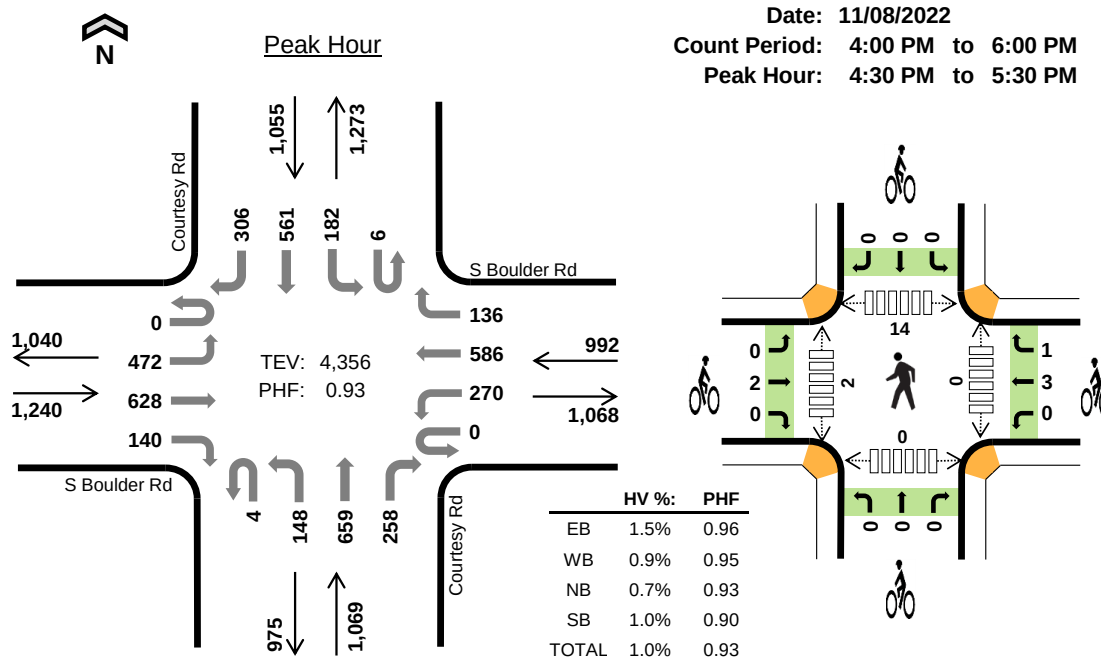
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
11:00 AM	1	2	2	4	9	0	0	0	0	0	0	2	1	0	3
11:15 AM	0	1	3	3	7	0	0	0	0	0	0	1	3	0	4
11:30 AM	4	0	2	3	9	0	0	0	1	1	0	0	1	0	1
11:45 AM	1	1	3	0	5	0	0	0	0	0	0	1	1	1	3
12:00 PM	0	2	0	2	4	0	0	0	0	0	0	0	5	1	6
12:15 PM	3	2	1	0	6	0	0	0	0	0	1	1	2	2	6
12:30 PM	3	1	0	0	4	0	0	0	0	0	0	3	5	0	8
12:45 PM	2	4	1	1	8	0	0	0	0	0	0	1	2	0	3
Count Total	14	13	12	13	52	0	0	0	1	1	1	9	20	4	34
Peak Hour	7	6	4	2	19	0	0	0	0	0	1	5	13	4	23

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
11:00 AM	0	0	1	0	0	0	2	0	0	1	1	0	0	0	1	3	9	0
11:15 AM	0	0	0	0	0	0	1	0	0	0	3	0	0	0	3	0	7	0
11:30 AM	0	2	2	0	0	0	0	0	0	1	1	0	0	1	2	0	9	0
11:45 AM	0	0	1	0	0	0	1	0	0	1	2	0	0	0	0	0	5	30
12:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	4	25
12:15 PM	0	1	2	0	0	1	1	0	0	1	0	0	0	0	0	0	6	24
12:30 PM	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	19
12:45 PM	0	0	2	0	0	0	4	0	0	0	1	0	0	1	0	0	8	22
Count Total	0	6	8	0	0	1	11	1	0	4	8	0	0	2	6	5	52	0
Peak Hour	0	4	3	0	0	1	4	1	0	2	2	0	0	0	0	2	19	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S Boulder Rd			S Boulder Rd			Courtesy Rd			Courtesy Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
11:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

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

Courtesy Rd S Boulder Rd



Two-Hour Count Summaries

Interval Start		S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	4:00 PM	0	127	148	36	0	60	153	48	1	30	158	74	1	34	133	71	1,074	0
	4:15 PM	0	101	137	30	0	66	160	34	0	53	172	49	2	42	125	26	997	0
	4:30 PM	0	125	154	36	0	70	132	34	2	29	170	51	1	41	124	86	1,055	0
	4:45 PM	0	111	158	26	0	66	141	32	0	28	166	76	1	50	150	79	1,084	4,210
	5:00 PM	0	123	155	45	0	59	164	38	2	45	171	69	1	55	151	87	1,165	4,301
	5:15 PM	0	113	161	33	0	75	149	32	0	46	152	62	3	36	136	54	1,052	4,356
	5:30 PM	0	119	154	26	0	64	106	25	2	32	151	52	0	39	133	68	971	4,272
	5:45 PM	0	80	154	27	0	57	126	25	1	22	115	54	4	51	116	49	881	4,069
Count Total		0	899	1,221	259	0	517	1,131	268	8	285	1,255	487	13	348	1,068	520	8,279	0
Peak Hour	All	0	472	628	140	0	270	586	136	4	148	659	258	6	182	561	306	4,356	0
	HV	0	11	4	3	0	2	5	2	0	0	6	1	0	1	4	6	45	0
	HV%	-	2%	1%	2%	-	1%	1%	1%	0%	0%	1%	0%	0%	1%	1%	2%	1%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	1	4	6	15	1	1	1	0	3	0	1	2	0	3
4:15 PM	5	3	3	3	14	1	0	1	0	2	0	1	4	0	5
4:30 PM	7	3	5	5	20	0	1	0	0	1	0	1	1	0	2
4:45 PM	7	1	2	3	13	2	1	0	0	3	0	0	4	0	4
5:00 PM	3	3	0	2	8	0	1	0	0	1	0	1	6	0	7
5:15 PM	1	2	0	1	4	0	1	0	0	1	0	0	3	0	3
5:30 PM	1	0	2	3	6	1	0	0	0	1	0	2	3	0	5
5:45 PM	2	1	2	3	8	0	1	0	0	1	0	1	0	0	1
Count Total	30	14	18	26	88	5	6	2	0	13	0	7	23	0	30
Peak Hour	18	9	7	11	45	2	4	0	0	6	0	2	14	0	16

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S Boulder Rd				S Boulder Rd				Courtesy Rd				Courtesy Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	2	0	0	0	0	1	0	0	3	1	0	0	3	3	15	0
4:15 PM	0	3	2	0	0	0	2	1	0	1	1	1	0	1	1	1	14	0
4:30 PM	0	5	1	1	0	0	1	2	0	0	4	1	0	1	2	2	20	0
4:45 PM	0	4	2	1	0	0	1	0	0	0	2	0	0	0	2	1	13	62
5:00 PM	0	2	0	1	0	2	1	0	0	0	0	0	0	0	0	2	8	55
5:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	1	4	45
5:30 PM	0	1	0	0	0	0	0	0	0	1	0	1	0	0	3	0	6	31
5:45 PM	0	1	1	0	0	0	1	0	0	0	2	0	0	0	3	0	8	26
Count Total	0	18	9	3	0	2	8	4	0	2	12	4	0	2	14	10	88	0
Peak Hour	0	11	4	3	0	2	5	2	0	0	6	1	0	1	4	6	45	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S Boulder Rd			S Boulder Rd			Courtesy Rd			Courtesy Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	1	0	0	1	0	1	0	0	0	0	0	3	0				
4:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2	0				
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0				
4:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	9				
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	7				
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	6				
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	6				
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	4				
Count Total	0	5	0	0	5	1	1	0	1	0	0	0	13	0				
Peak Hour	0	2	0	0	3	1	0	0	0	0	0	0	6	0				

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

Appendix D: Signal Timing Plans

Louisville - HWY42 & S Boulder Rd

Configuration Phase Sequence Page 1

Phase Ring (MM)1-1-1

Phase

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	1	2	2	2	2	1	1	2	2	1	1	2	2

Hardware Alternate Sequence Enable: No

Phase Ring Sequence

Sequence	Ring	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
1	2	6	5	8	7	11	12	15	16	0	0	0	0	0	0	0	0
2	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
2	2	5	6	8	7	11	12	15	16	0	0	0	0	0	0	0	0
3	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
3	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
4	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
4	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
5	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
5	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
6	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
6	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
7	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
7	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
8	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
8	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
9	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
9	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
10	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
10	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
11	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
11	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
12	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
12	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
13	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
13	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
14	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
14	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
15	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
15	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
16	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
16	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0

Phase
Compatibility
(MM)1-1-2

Phase 1	Phase 2
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase Direction
Descriptions
Phase Description

Overlap Direction
Descriptions
Overlap Description

Administration (MM)1-7-1
Enable CRC Check: No
CRC: 0000
Request Download Program Data: No

Louisville - HWY42 & S Boulder Rd

Configuration Phase Sequence Page 2

In Use(MM)1- 2	Exclusive Ped(MM)1-2	Backup Prevent(MM)1-1-3 Phase Timing Phase Backup	Simultaneous Gap(MM)1-1-4 Must Gap with Phase	Disable(MM)1- 1-4 Phase
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1
2
3
4
5
6
7
8

Load Switch Assignments (MMU Channel) (MM)1-3

Phase	Overlap	Type	Dim R	Y	G	D	Auto R	Y	Flash Together
1	1	V				+	Yes		
2	2	V				+	Yes		Yes
3	3	V				+	Yes		
4	4	V				+	Yes		Yes
5	5	V				-	Yes		
6	6	V				-	Yes		Yes
7	7	V				-	Yes		
8	8	V				-	Yes		Yes
9	2	P				+			
10	4	P				+			
11	6	P				-			
12	8	P				-			
13	1	O				+	Yes		
14	2	O				-	Yes		Yes
15	3	O				+	Yes		
16	4	O				-	Yes		Yes

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Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	Bus Interface Terminal/Facilities	
	Term and Facility Enable	Detector Rack Enable
1	Yes	Yes
2	Yes	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Enable TS2/MMU Type Cabinet: Yes

Enable MMU Extended Status: No

Enable SDLC Stop Time: No

Enable 3 Critical RFE's Lockup: Yes

Diagnostics (Test Fixture) Enable: No

ID	Secondary To Secondary Addressing	
	Term and Facility Enable	Detector Rack Enable
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Secondary To Secondary Addressing MMU: No

Secondary To Secondary Addressing Diagnostics: No

MMU Program (MM)1-4-2

Channel Can Serve with Channel

Channel 1 Channel 2

Color Check Enable (MM)1-4-3

Enable Color Check: Yes

MMU Channel	Color Check Enable		
	Green	Yellow	Red
1	Yes	Yes	Yes
2	Yes	Yes	Yes
3	Yes	Yes	Yes
4	Yes	Yes	Yes
5	Yes	Yes	Yes
6	Yes	Yes	Yes
7	Yes	Yes	Yes
8	Yes	Yes	Yes
9	Yes	Yes	Yes
10	Yes	Yes	Yes
11	Yes	Yes	Yes

12	Yes	Yes	Yes
13	Yes	Yes	Yes
14	Yes	Yes	Yes
15	Yes	Yes	Yes
16	Yes	Yes	Yes

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Configuration Communications

Ethernet Port Configuration (MM)1-5-1 NTCIP Parameters (MM)1-5-5

Controller IP: 172.16.10.111Backup Time: 0

Subnet Mask: 255.255.252.0UDP Port: 501

Default Gateway IP: 172.16.11.254Ethernet Priority: 1

Server IP: 172.16.50.1Port 2 Priority: 4

Port 3A Priority: 2

Port 3B Priority: 3

Note for 2070: Port 2 is C50S, Port 3A is C21S, and Port 3B is C22S

Port Configuration (MM)1-5-2 to 1-5-4

Port	Protocol	Enable	Data Rate	Data Parity	Modem Setup	User String	Comm Port Address	System Detector 9-1	Telemetry Response Delay	Duplex Half/Full	Flow Control	AB3418 NTCIP Group Address	AB3418 NTCIP Single Flag Enable	RTS to CTS Delay	RTS Turn Off Delay	Droupout Time	Early RTS	FSK Hardware
2	NTCIP	Yes	9600	8 N	1 None		1	0	0.0	Half	Yes	0	No	0.0	0.0	10	No	Yes
3A	ECPIP	No	9600	8 0	1 None		0	0	0.0	Full	No	0	No	0.0	0.0	10	No	Yes
3B	AB3418	No	1200	8 0	1 None		7	0	0.9	Full	Yes	0	No	3.0	2.0	300	No	Yes

ECPIP Parameters (MM)1-5-6

Expanded System Detector Address: 0

Local System Detector

Local System Detector	Number
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Configuration Logging/Display

Enable Event Logs (MM)1-6-1		Alarm Logs (MM)1-6-1
Critical RFE's:	Yes	Enabled:
3 Critical RFE's in 24 Hours:	Yes	12345678910111213141516
MMU Flash Faults:	Yes	
Local Flash Faults:	Yes	
Non-Critical RFE's (Det/Test):	Yes	
Detector Errors:	Yes	
Coordination Errors:	Yes	
Controller Download:	Yes	
Preempt:	Yes	
TSP:	Yes	
Power On/Off:	Yes	
Low Battery:	Yes	
Access:	Yes	
Data Change:	Yes	

Display Options (MM)1-7-2
Key Click Enable: Yes
Backlight Enable: Yes

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Logic Processor Page 1
Statement Control (MM)1-8-1
LP Statement Control

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Logic Processor Page 2

Logic Statements (MM)1-8-2

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Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	10	5	6	5	10	5	6	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	4	0	4	0	4	0	4	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	30	0	27	0	26	0	27	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	15	30	15	30	15	30	15	30	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Louisville - HWY42 & S Boulder Rd

Controller Overlaps

Overlap	Type	Vehicle Overlaps (MM)2-2				Phases			
		Lag Green	Yellow	Red	Advance Green				
Overlap	Phase	Included	Protect	Modifier	Ped Protect	Not Overlap	Lag X Phase	Lag 2 Phase	Flash Green

Guaranteed Minimum Time Data (MM) 2-4						
Phase Time Data						
Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

Louisville - HWY42 & S Boulder Rd

Controller Pedestrian Overlaps

Pedestrian Overlaps (MM) 2-3

Included Phase Ped Overlap

Louisville - HWY42 & S Boulder Rd

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	Y
6	Y

Overlap

- A
- B
- C
- D

Flash > Mon:	No
Flash Time:	0
All Red:	0
Power Start Sequence:	1

Automatic Flash

Entry Phase

- 2
- 6

Exit Phase

- 2
- 6

Overlap Exit

- A
- B
- C
- D

Flash > Mon:	No
Exit Flash Interval:	W
Minimum Auto Flash:	7
Minimumin Recall:	No
Cycle Through Phase:	No

Louisville - HWY42 & S Boulder Rd

Controller Options

Controller Options (MM)2-6-1

Phase	Flashing Green Phase	Guaranteed Passage	Non Act 1	Non Act 2	Dual Entry	Conditional Service	Conditional Reservice	Ped Reservice	Rest In Walk	Flashing Walk	Ped Clear Yellow	Ped Clear Red	IGRN + Veh Ext
2	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
4	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No
6	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
8	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No

Ped Clear Protect: Off Red Revert: 2.0

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Pre-Timed Phase

Phase Recall Options (MM)2-8

Plan	Phase	Lock Detector	Vehicle Recall	Ped Recall	Max Recall	Soft Recall	No Rest	AI Calc
1	2	No	No	No	Yes	No	No	No
1	6	No	No	No	Yes	No	No	No
2	1	Yes	No	No	No	No	No	No
2	2	Yes	No	No	No	No	No	No
2	3	Yes	No	No	No	No	No	No
2	4	Yes	No	No	No	No	No	No
2	5	Yes	No	No	No	No	No	No
2	6	Yes	No	No	No	No	No	No
2	7	Yes	No	No	No	No	No	No
2	8	Yes	No	No	No	No	No	No
2	9	Yes	No	No	No	No	No	No
2	10	Yes	No	No	No	No	No	No
2	11	Yes	No	No	No	No	No	No
2	12	Yes	No	No	No	No	No	No
2	13	Yes	No	No	No	No	No	No
2	14	Yes	No	No	No	No	No	No
2	15	Yes	No	No	No	No	No	No
2	16	Yes	No	No	No	No	No	No
3	1	Yes	No	No	No	No	No	No
3	2	Yes	No	No	No	No	No	No
3	3	Yes	No	No	No	No	No	No
3	4	Yes	No	No	No	No	No	No
3	5	Yes	No	No	No	No	No	No
3	6	Yes	No	No	No	No	No	No
3	7	Yes	No	No	No	No	No	No
3	8	Yes	No	No	No	No	No	No
3	9	Yes	No	No	No	No	No	No
3	10	Yes	No	No	No	No	No	No
3	11	Yes	No	No	No	No	No	No
3	12	Yes	No	No	No	No	No	No
3	13	Yes	No	No	No	No	No	No
3	14	Yes	No	No	No	No	No	No
3	15	Yes	No	No	No	No	No	No
3	16	Yes	No	No	No	No	No	No
4	1	Yes	No	No	No	No	No	No
4	2	Yes	No	No	No	No	No	No
4	3	Yes	No	No	No	No	No	No

4	4	Yes	No	No	No	No	No	No
4	5	Yes	No	No	No	No	No	No
4	6	Yes	No	No	No	No	No	No
4	7	Yes	No	No	No	No	No	No
4	8	Yes	No	No	No	No	No	No
4	9	Yes	No	No	No	No	No	No
4	10	Yes	No	No	No	No	No	No
4	11	Yes	No	No	No	No	No	No
4	12	Yes	No	No	No	No	No	No
4	13	Yes	No	No	No	No	No	No
4	14	Yes	No	No	No	No	No	No
4	15	Yes	No	No	No	No	No	No
4	16	Yes	No	No	No	No	No	No

Louisville - HWY42 & S Boulder Rd

Coordination Options
Coordination Options (MM)3-1

Manual Pattern: Auto
ECPI Coord: Yes
System Source: TBC
System Format: STD
Splits In: Seconds
Offsets In: Seconds
Transition: Smooth
Max Select: MAXINH
Dwell/Add Time: 0
Dly Coord Wz-Lz: No
Force Off: Float
Offset Reference: Yell
Use Ped Time: Yes
Ped Recall: No
Ped Resv: No
Local Zero Ovr: No
Fo Add Ini Green: No
Re-sync Count: 0
Multisync: No

Split Demand (MM)3-5

Demand	Demand
1	2
Phase	Phase

Demand	Detector	Call Time	Cycle Count
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Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	Min Green
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Louisville - HWY42 & S Boulder Rd

Coordination Pattern Data

Pattern Data (MM)3-2								
Pattern	Split Pattern	TS2	Cycle	Std(COS)	Offset Value	Splits In	Offsets In	Actuated Coord
1	1	0-1	120	111	15	Seconds	Seconds	No
2	2	0-2	100	211	17	Seconds	Seconds	No
3	3	0-3	120	311	113	Seconds	Seconds	No

Pattern	Timing Plan	Actuated Walk Rest	Sequence	Phase Reservice	Action Plan	XArt Pattern	Vehicle Perm 1	Vehicle Perm 2	Vehicle Perm 3
1	1	No	1	No	1	0	0	0	0
2	1	No	2	No	2	0	0	0	0
3	1	No	1	No	3	0	0	0	0

Pattern	Ring Split Ext 1	Ring Split Ext 2	Ring Split Ext 3	Ring Split Ext 4	Split Demand Pattern 1	Split Demand Pattern 2	Ring Displ 2	Ring Displ 3	Ring Displ 4
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0

Split Preference Phases

Pattern	Phase	Preference 1	Preference 2
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Special Functions

Pattern	Function Output
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Split Pattern Data (MM)3-3

Coord Phases				Split/Modes																
Split Pattern	Phase	Split	Split Pattern	Mode	Phase															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	20	1	Coord	X					X										
1	2	41	1	Vehicle																
1	3	16		Recall	X					X										
1	4	43	2	Coord	X					X										
1	5	20	2	Vehicle																
1	6	41		Recall	X					X										
1	7	12	3	Coord	X					X										
1	8	47	3	Vehicle																
				Recall	X					X										
2	1	14																		
2	2	38																		
2	3	12																		
2	4	36																		
2	5	18																		
2	6	34																		
2	7	12																		
2	8	36																		
3	1	18																		
3	2	43																		
3	3	18																		
3	4	41																		
3	5	24																		
3	6	37																		
3	7	18																		
3	8	41																		

Louisville - HWY42 & S Boulder Rd

Preemptor Preempt Plan (MM)4-1

Preempt	Phase	Preempt Phases							Special Function
		Track Clear Veh	Dwell Veh	Dwell Ped	Cycling Veh	Cycling Ped	Exit Phase	Exit Calls	
3	2	No	Yes	No	No	No	Yes	No	No
3	5	No	Yes	No	No	No	No	No	No
3	6	No	No	No	No	No	Yes	No	No
4	1	No	Yes	No	No	No	No	No	No
4	2	No	No	No	No	No	Yes	No	No
4	6	No	Yes	No	No	No	Yes	No	No
5	4	No	Yes	No	No	No	Yes	No	No
5	7	No	Yes	No	No	No	No	No	No
5	8	No	No	No	No	No	Yes	No	No
6	3	No	Yes	No	No	No	No	No	No
6	4	No	No	No	No	No	Yes	No	No
6	8	No	Yes	No	No	No	Yes	No	No

Preempt	Overlap	Preempt Overlaps			
		Track Clear	Enable Trailing	Dwell Overlap	Cycling Overlap
1	A	No	No	No	No
1	B	No	No	No	No
1	C	No	No	No	No
1	D	No	No	No	No
1	E	No	No	No	No
1	F	No	No	No	No
1	G	No	No	No	No
1	H	No	No	No	No
1	I	No	No	No	No
2	A	No	No	No	No
2	C	No	No	No	No
2	D	No	No	No	No
2	E	No	No	No	No
2	F	No	No	No	No
3	A	No	No	No	No
3	B	No	No	No	No
3	C	No	No	No	No
3	D	No	No	No	No
3	E	No	No	No	No
3	F	No	No	No	No
3	G	No	No	No	No
3	H	No	No	No	No
3	I	No	No	No	No
3	J	No	No	No	No
3	K	No	No	No	No
3	L	No	No	No	No
3	M	No	No	No	No
3	N	No	No	No	No
3	O	No	No	No	No
3	P	No	No	No	No
4	A	No	No	No	No
4	B	No	No	No	No
4	C	No	No	No	No
4	D	No	No	No	No
4	E	No	No	No	No
4	F	No	No	No	No

4	G	No	No	No	No
4	H	No	No	No	No
4	I	No	No	No	No
4	J	No	No	No	No
4	K	No	No	No	No
4	L	No	No	No	No
4	M	No	No	No	No
4	N	No	No	No	No
4	O	No	No	No	No
4	P	No	No	No	No
5	A	No	No	No	No
5	B	No	No	No	No
5	C	No	No	No	No
5	D	No	No	No	No
5	E	No	No	No	No
5	F	No	No	No	No
5	G	No	No	No	No
5	H	No	No	No	No
5	I	No	No	No	No
5	J	No	No	No	No
5	K	No	No	No	No
5	L	No	No	No	No
5	M	No	No	No	No
5	N	No	No	No	No
5	O	No	No	No	No
5	P	No	No	No	No
6	A	No	No	No	No
6	B	No	No	No	No
6	C	No	No	No	No
6	D	No	No	No	No
6	E	No	No	No	No
6	F	No	No	No	No
6	G	No	No	No	No
6	H	No	No	No	No
6	I	No	No	No	No
6	J	No	No	No	No
6	K	No	No	No	No
6	L	No	No	No	No
6	M	No	No	No	No
6	N	No	No	No	No
6	O	No	No	No	No
6	P	No	No	No	No

Preempt	Enable	Preempt Override	Interlock Enable	Detector Lock	Delay	Inhibit	Override Flash	Duration	CLR > GRN
1	No	Yes	No	Yes	0	0	No	0	No
2	No	Yes	No	Yes	0	0	No	0	No
3	Standard	Yes	No	Yes	0	0	No	10	No
4	Standard	Yes	No	Yes	0	0	No	10	No
5	Standard	Yes	No	Yes	0	0	No	10	No
6	Standard	Yes	No	Yes	0	0	No	10	No
7	No	Yes	No	Yes	0	0	No	0	No
8	No	Yes	No	Yes	0	0	No	0	No
9	No	Yes	No	Yes	0	0	No	0	No
10	No	Yes	No	Yes	0	0	No	0	No

Preempt	Term Overlap Asap	PC Through Yellow	Terminate Phase	Ped Dark	Track Clearance Re-service	Dwell Flash	Linked Pmt	Flash Exit Color	Preempt To Coord
1	No	No	No	No	No	Off	0	Red	No

2	No	No	No	No	No	Off	0	Green	No
3	No	Yes	No	No	No	Off	0	Green	No
4	No	Yes	No	No	No	Off	0	Green	No
5	No	Yes	No	No	No	Off	0	Green	No
6	No	Yes	No	No	No	Off	0	Green	No
7	No	No	No	No	No	Off	0	Green	No
8	No	No	No	No	No	Off	0	Green	No
9	No	No	No	No	No	Off	0	Green	No
10	No	No	No	No	No	Off	0	Green	No

Preempt	Exit Timing Plan	Reservice	Free During Pmt Ring 1	Free During Pmt Ring 2	Free During Pmt Ring 3	Free During Pmt Ring 4
1	0	0	No	No	No	No
2	0	0	No	No	No	No
3	0	0	No	No	No	No
4	0	0	No	No	No	No
5	0	0	No	No	No	No
6	0	0	No	No	No	No
7	0	0	No	No	No	No
8	0	0	No	No	No	No
9	0	0	No	No	No	No
10	0	0	No	No	No	No

Preempt	Entrance Walk	Entrance Ped Clear	Entrance Min Green	Entrance Yellow	Entrance Red	Track Clear Min Green	Gate Down Ext Green	Gate Down Max Green	Track Clear Yellow	Track Clear Red
1	0	255	5	4.0	1.0	0	0	0	4.0	1.0
2	0	255	5	4.0	1.0	0	0	0	4.0	1.0
3	0	7	5	4.0	1.0	0	0	0	4.0	1.0
4	0	7	5	4.0	1.0	0	0	0	4.0	1.0
5	0	7	5	4.0	1.0	0	0	0	4.0	1.0
6	0	7	5	4.0	1.0	0	0	0	4.0	1.0
7	0	255	5	4.0	1.0	0	0	0	4.0	1.0
8	0	255	5	4.0	1.0	0	0	0	4.0	1.0
9	0	255	5	4.0	1.0	0	0	0	4.0	1.0
10	0	255	5	4.0	1.0	0	0	0	4.0	1.0

Preempt	Min Dwell Time	Extend Preempt Input Time	Max Preempt Call Time	Exit Yellow Time	Exit Red Time	Preempt Active Out	Preempt Active Dwell	Other Priority Preempt	Non-Priority Preempt
1	0	0.0	0	4.0	1.0	On	No	Off	Off
2	0	0.0	0	4.0	1.0	On	No	Off	Off
3	0	0.0	240	3.0	1.0	On	No	Off	Off
4	0	0.0	240	3.0	1.0	On	No	Off	Off
5	0	0.0	240	3.0	1.0	On	No	Off	Off
6	0	0.0	240	3.0	1.0	On	No	Off	Off
7	0	0.0	0	4.0	1.0	On	No	Off	Off
8	0	0.0	0	4.0	1.0	On	No	Off	Off
9	0	0.0	0	4.0	1.0	On	No	Off	Off
10	0	0.0	0	4.0	1.0	On	No	Off	Off

Louisville - HWY42 & S Boulder Rd

Preemptor Preempt Filtering

Enable Preempt Filtering and
TSP/SCP (MM)4-2

Input	Solid	Pulsing
3	Preemption -3	Preemption -7
4	Preemption -4	Preemption -8
5	Preemption -5	Preemption -9
6	Preemption -6	Preemption -10

Louisville - HWY42 & S Boulder Rd

Time Base Clock/Calendar

Clock/Calendar Options (MM)5-1

Enable Action Plan: 0

Sync Reference Time: 12:00 AM

Sync Reference: Reference Time

Day Light Savings: No

Time Reset Input Set Time: 3:30:00

Standard Time From GMT: 0

Louisville - HWY42 & S Boulder Rd

Time Base Action Plan

Action Plan (MM)5-2											
Plan	Pattern	Veh Det Plan	Flash	Red Reset	Controller Seq	Timing Plan	System Override	Detector Log	Veh Det Diag Plan	Ped Det Diag Plan	Dimming Enable
1	1	1	No	No	1	1	Yes	15	1	1	No
2	2	1	No	No	1	1	Yes	15	2	2	No
3	3	1	No	No	1	1	Yes	15	1	1	No
4	4	1	No	No	1	1	Yes	None	0	0	No
20	254 - FREE	1	No	No	1	1	No	None	0	0	No

Action Plan Phases											
Plan	Phase	Red Rcl	Walk 2	Vex 2	Veh Rcl	Max Rcl	Max 2	Max 3	CS Inhibit	Omit	

Action Plan Auxiliary Functions			
Acion Plan Special Functions	Plan	Function	Plan
Plan	Function	Plan	Function

Logic Statement Control	
Plan	LP Statement Control

Louisville - HWY42 & S Boulder Rd

Time Base Day Plan/Schedule

Day Plan (MM)5-3			
Plan	Event	Action Plan	Start Time
1	1	1	6:30 AM
1	2	2	9:30 AM
1	3	3	3:00 PM
1	4	2	7:30 PM
2	1	2	8:00 AM

Schedule (MM)5-4				
Schedule Number	Day Plan Number	Months	Days of Week	Days of Month
1	1	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Mon, Tues, Wed, Thurs, Fri	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
2	2	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Sun, Sat	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Louisville - HWY42 & S Boulder Rd

Time Base Exceptions

Day	Fixed/Float	Exception Day Program (MM)5-5			
		Month	Day of Week/Month	Week of Month/Year	Day Plan
1	FLOAT	0	0	0	0
2	FLOAT	0	0	0	0
3	FLOAT	0	0	0	0
4	FLOAT	0	0	0	0
5	FLOAT	0	0	0	0
6	FLOAT	0	0	0	0
7	FLOAT	0	0	0	0
8	FLOAT	0	0	0	0
9	FLOAT	0	0	0	0
10	FLOAT	0	0	0	0
11	FLOAT	0	0	0	0
12	FLOAT	0	0	0	0
13	FLOAT	0	0	0	0
14	FLOAT	0	0	0	0
15	FLOAT	0	0	0	0
16	FLOAT	0	0	0	0
17	FLOAT	0	0	0	0
18	FLOAT	0	0	0	0
19	FLOAT	0	0	0	0
20	FLOAT	0	0	0	0
21	FLOAT	0	0	0	0
22	FLOAT	0	0	0	0
23	FLOAT	0	0	0	0
24	FLOAT	0	0	0	0
25	FLOAT	0	0	0	0
26	FLOAT	0	0	0	0
27	FLOAT	0	0	0	0
28	FLOAT	0	0	0	0
29	FLOAT	0	0	0	0
30	FLOAT	0	0	0	0
31	FLOAT	0	0	0	0
32	FLOAT	0	0	0	0
33	FLOAT	0	0	0	0
34	FLOAT	0	0	0	0
35	FLOAT	0	0	0	0
36	FLOAT	0	0	0	0

Louisville - HWY42 & S Boulder Rd

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1		
Vehicle Plan	Detector Number	Called
1	1	2
1	3	5
1	5	6
1	7	1
1	9	8
1	11	3
1	13	4
1	15	7

Vehicle Detector Setup (MM)6-2 continued

Detector
Number

ECPI

TS2 Detector

Detector Description

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Vehicle Plan	Assigned Phase	Switch Phase	Extend Time	Delay Time	Queue Limit	Yellow Lock	Added Option	Call Option	Passage Option	Queue Option	NTCIP Occupancy	NTCIP Volume	ECPI Log	Red Lock
1	1	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	2	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	3	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	4	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	1	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	2	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	3	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	4	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	1	5	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
3	2	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	3	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	4	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	1	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	2	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	3	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	4	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	1	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	2	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	3	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	4	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	1	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	2	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	3	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	4	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	1	1	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
7	2	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	3	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	4	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	1	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	2	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	3	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	4	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	1	8	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
9	2	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	3	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	4	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	1	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	2	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	3	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	4	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	1	3	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
11	2	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	3	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	4	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	1	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	2	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	3	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	4	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	1	4	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
13	2	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	3	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	4	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

14	1	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	2	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	3	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	4	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	1	7	0	0.0	0.0	0	No	No	Yes	Yes	No	Yes	Yes	No	No
15	2	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	3	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	4	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	1	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	2	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	3	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	4	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

Ped and System Detector Options
(MM)6-4

Phase Ped Detector

Local Ped Detector	Number
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Local System Detector

Local System Detector	Number
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Louisville - HWY42 & S Boulder Rd

Detectors**Detectors Page 2**

Log - Speed Detector Setup (MM)6-5

NTCIP Log ECPI Log Period: Length Unit:
 Period: 60 TBAP Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	240	2	0	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	240	2	0	0
1	8	0	0	0	1	255	0
1	9	0	0	15	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	240	2	0	0
1	12	0	0	0	1	255	0
1	13	0	0	240	2	0	0
1	14	0	0	0	1	255	0
1	15	0	0	240	2	0	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0

1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0

2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0

3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0

4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnostics (MM)6-7

Plan	Detector	Counts	Act	Pres	Multiplier
1	2	0	0	240	1
1	4	0	0	240	1
1	6	0	0	240	1
1	8	0	0	240	1

Louisville - S Boulder Rd & Main

Configuration Phase Sequence Page 1

Phase Ring (MM)1-1-1

Phase

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	1	1	2	2	2	2	1	1	2	2	1	1	2	2

Hardware Alternate Sequence Enable: No

Phase Ring Sequence

Sequence	Ring	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	2	1	3	4	9	10	13	14	0	0	0	0	0	0	0	0
1	2	6	5	8	7	11	12	15	16	0	0	0	0	0	0	0	0
2	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
2	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
3	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
3	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
4	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
4	2	5	6	7	8	11	12	15	16	0	0	0	0	0	0	0	0
5	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
5	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
6	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
6	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
7	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
7	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
8	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
8	2	6	5	7	8	12	11	15	16	0	0	0	0	0	0	0	0
9	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
9	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
10	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
10	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
11	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
11	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
12	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
12	2	5	6	8	7	11	12	16	15	0	0	0	0	0	0	0	0
13	1	1	2	3	4	9	10	13	14	0	0	0	0	0	0	0	0
13	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
14	1	2	1	3	4	10	9	13	14	0	0	0	0	0	0	0	0
14	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
15	1	1	2	4	3	9	10	14	13	0	0	0	0	0	0	0	0
15	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0
16	1	2	1	4	3	10	9	14	13	0	0	0	0	0	0	0	0
16	2	6	5	8	7	12	11	16	15	0	0	0	0	0	0	0	0

Phase
Compatibility
(MM)1-1-2

Phase 1	Phase 2
1	5
1	6
2	5
2	6
3	7
3	8
4	7
4	8
9	11
9	12
10	11
10	12
13	15
13	16
14	15
14	16

Phase Direction
Descriptions
Phase Description

Overlap Direction
Descriptions
Overlap Description

Administration (MM)1-7-1
Enable CRC Check: No
CRC: 0000
Request Download Program Data: No

Louisville - S Boulder Rd & Main

Configuration Phase Sequence Page 2

In Use(MM)1- 2	Exclusive Ped(MM)1-2	Backup Prevent(MM)1-1-3 Phase Timing Phase Backup	Simultaneous Gap(MM)1-1-4 Must Gap with Phase	Disable(MM)1- 1-4 Phase
----------------------	-------------------------	--	--	-------------------------------

1
2
4
5
6
7
8

Load Switch Assignments (MMU Channel) (MM)1-3

Phase	Overlap	Type	Dim R	Y	G	D	Auto R	Y	Flash Together
1	1	V				+	Yes		
2	2	V				+	Yes		Yes
3	3	O				+	Yes		
4	4	V				+	Yes		Yes
5	5	V				-	Yes		
6	2	O				-	Yes		Yes
7	4	O				-	Yes		
8	8	V				-	Yes		Yes
9	2	P				+			
10	4	P				+			
11	6	P				-			
12	8	P				-			
13	1	O				+	Yes		
14	5	O				-	Yes		Yes
15	15					+	Yes		
16	16					-	Yes		Yes

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Configuration Port 1 (SDLC)

SDLC Options (MM)1-4-1

BIU	Bus Interface Terminal/Facilities	
	Term and Facility Enable	Detector Rack Enable
1	Yes	Yes
2	Yes	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Enable TS2/MMU Type Cabinet: Yes

Enable MMU Extended Status: No

Enable SDLC Stop Time: No

Enable 3 Critical RFE's Lockup: Yes

Diagnostics (Test Fixture) Enable: No

ID	Secondary To Secondary Addressing	
	Term and Facility Enable	Detector Rack Enable
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No
8	No	No

Secondary To Secondary Addressing MMU: No

Secondary To Secondary Addressing Diagnostics: No

MMU Program (MM)1-4-2

Channel Can Serve with Channel

Channel 1 Channel 2

Color Check Enable (MM)1-4-3

Enable Color Check: No

MMU Channel	Color Check Enable		
	Green	Yellow	Red
1	Yes	Yes	Yes
2	Yes	Yes	Yes
3	Yes	Yes	Yes
4	Yes	Yes	Yes
5	Yes	Yes	Yes
6	Yes	Yes	Yes
7	Yes	Yes	Yes
8	Yes	Yes	Yes
9	Yes	Yes	Yes
10	Yes	Yes	Yes
11	Yes	Yes	Yes

12	Yes	Yes	Yes
13	Yes	Yes	Yes
14	Yes	Yes	Yes
15	Yes	Yes	Yes
16	Yes	Yes	Yes

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Configuration Communications

Ethernet Port Configuration (MM)1-5-1 NTCIP Parameters (MM)1-5-5

Controller IP: 172.16.10.113

Subnet Mask: 255.255.252.0

Default Gateway IP: 172.16.11.254

Server IP: 172.16.50.1

Backup Time: 0

UDP Port: 501

Ethernet Priority: 1

Port 2 Priority: 2

Port 3A Priority: 3

Port 3B Priority: 4

Note for 2070: Port 2 is C50S, Port 3A is C21S, and Port 3B is C22S

Port Configuration (MM)1-5-2 to 1-5-4

Port	Protocol	Enable	Data Rate	Data Parity	Modem Setup	User String	Comm Port Address	System Detector 9-1	Telemetry Response Delay	Duplex Half/Full	Flow Control	AB3418 NTCIP Group Address	AB3418 NTCIP Single Flag Enable	RTS to CTS Delay	RTS Turn Off Delay	Droupout Time	Early RTS	FSK Hardware
2	NTCIP	Yes	9600	8 N	1 None		1	0	0.0	Half	Yes	0	No	0.0	0.0	0	No	Yes
3A	ECPIP	No	9600	8 0	1 None		0	0	0.0	Full	No	0	No	0.0	0.0	10	No	Yes
3B	AB3418	No	1200	8 0	1 None		1	0	0.9	Full	Yes	0	No	3.0	2.0	300	No	Yes

ECPIP Parameters (MM)1-5-6

Expanded System Detector Address: 0

Local System Detector

Local System Detector

Number

Louisville - S Boulder Rd & Main

Configuration Logging/Display

Enable Event Logs (MM)1-6-1		Alarm Logs (MM)1-6-1
Critical RFE's:	Yes	Enabled:
3 Critical RFE's in 24 Hours:	Yes	12345678910111213141516
MMU Flash Faults:	Yes	
Local Flash Faults:	Yes	
Non-Critical RFE's (Det/Test):	Yes	
Detector Errors:	Yes	
Coordination Errors:	Yes	
Controller Download:	Yes	
Preempt:	Yes	
TSP:	Yes	
Power On/Off:	Yes	
Low Battery:	Yes	
Access:	Yes	
Data Change:	Yes	

Display Options (MM)1-7-2
Key Click Enable: Yes
Backlight Enable: Yes

Louisville - S Boulder Rd & Main

Logic Processor Page 1
Statement Control (MM)1-8-1

LP	Statement Control
2	E
3	E
4	E

Louisville - S Boulder Rd & Main

Logic Processor Page 2

Logic Statements (MM)1-8-2

Statement Number: 1

IF:

	Assignment	#	State
IF	PREEMPT ACTIVE	1	IS ON

THEN:

	Assignment	#	State
IS		9	Sec ON

ELSE:

	Assignment	#	State

Statement Number: 2

IF:

	Assignment	#	State
IF	WALK ON PHASE	6	IS ON
OR	PED CLEAR ON PHASE	6	IS ON

THEN:

	Assignment	#	State
	SET OVLP GREEN	5	ON

ELSE:

	Assignment	#	State
	SET OVLP GREEN	5	OFF

Statement Number: 3

IF:

	Assignment	#	State
IF	WALK ON PHASE	2	IS ON
OR	PED CLEAR ON PHASE	2	IS ON

THEN:

	Assignment	#	State
	SET OVLP GREEN	6	ON

ELSE:

	Assignment	#	State
	SET OVLP GREEN	6	OFF

Statement Number: 4

IF:

	Assignment	#	State
IF	WALK ON PHASE	4	IS ON
OR	PED CLEAR ON PHASE	4	IS ON

THEN:

Assignment	#	State
SET OVLP GREEN 7		ON

ELSE:

Assignment	#	State
SET OVLP GREEN 7		OFF

Louisville - S Boulder Rd & Main

Controller Timing Plan (MM)2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	35	0	5	3	35	5	5	0	0	0	0	0	0	0	0
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	6	0	6	0	6	0	6	0	0	0	0	0	0	0	0
Walk	0	6	0	6	0	6	0	6	0	0	0	0	0	0	0	0
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	17	0	32	0	17	0	24	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	0.0	2.0	2.0	5.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	12	76	0	15	6	76	15	15	0	0	0	0	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	3.0	4.0	4.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
BK Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max 1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Stp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ACT B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEC/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPT Duc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Louisville - S Boulder Rd & Main

Controller Overlaps

Vehicle Overlaps (MM)2-2

Overlap	Type	Lag Green	Yellow	Red	Advance Green
A	Normal	0.0	0.0	0.0	0.0
B	Normal	0.0	0.0	0.0	0.0
C	Normal	0.0	0.0	0.0	0.0
D	Normal	0.0	0.0	0.0	0.0

Phases

Overlap	Phase	Included	Protect	Modifier	Ped Protect	Not Overlap	Lag X Phase	Lag 2 Phase	Flash Green
A	1	Yes	No	No	No	No	No	No	0
A	6	Yes	No	No	No	No	No	No	0
B	6	Yes	No	No	No	No	No	No	0
B	7	Yes	No	No	No	No	No	No	0
C	7	Yes	No	No	No	No	No	No	0
C	8	Yes	No	No	No	No	No	No	0
D	1	Yes	No	No	No	No	No	No	0
D	2	Yes	No	No	No	No	No	No	0
D	7	Yes	No	No	No	No	No	No	0

Guaranteed Minimum Time Data (MM) 2-4

Phase Time Data

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

Louisville - S Boulder Rd & Main

Controller Pedestrian Overlaps

Pedestrian Overlaps (MM) 2-3

Included Phase Ped Overlap

Louisville - S Boulder Rd & Main

Controller Start/Fash (MM) 2-5

Startup

Phase	Phase Setting
2	Y
6	Y

Overlap

- A
- B
- C
- D

Flash > Mon:	No
Flash Time:	0
All Red:	0
Power Start Sequence:	1

Automatic Flash

Entry Phase

- 2
- 6

Exit Phase

- 2
- 6

Overlap Exit

- A
- B
- C
- D

Flash > Mon:	No
Exit Flash Interval:	W
Minimum Auto Flash:	8
Minimumin Recall:	No
Cycle Through Phase:	No

Louisville - S Boulder Rd & Main

Controller Options

Controller Options (MM)2-6-1

Phase	Flashing Green Phase	Guaranteed Passage	Non Act 1	Non Act 2	Dual Entry	Conditional Service	Conditional Reservice	Ped Reservice	Rest In Walk	Flashing Walk	Ped Clear Yellow	Ped Clear Red	IGRN + Veh Ext
2	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No
4	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No
6	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No
8	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No

Ped Clear Protect: Off Red Revert: 2.0

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No Free Input Enables Pre-Timed: Yes

Pre-Timed Phase

Phase Recall Options (MM)2-8

Plan	Phase	Lock Detector	Vehicle Recall	Ped Recall	Max Recall	Soft Recall	No Rest	AI Calc
1	2	No	No	No	Yes	No	No	No
1	6	No	No	No	Yes	No	No	No
2	1	Yes	No	No	No	No	No	No
2	2	Yes	No	No	No	No	No	No
2	3	Yes	No	No	No	No	No	No
2	4	Yes	No	No	No	No	No	No
2	5	Yes	No	No	No	No	No	No
2	6	Yes	No	No	No	No	No	No
2	7	Yes	No	No	No	No	No	No
2	8	Yes	No	No	No	No	No	No
2	9	Yes	No	No	No	No	No	No
2	10	Yes	No	No	No	No	No	No
2	11	Yes	No	No	No	No	No	No
2	12	Yes	No	No	No	No	No	No
2	13	Yes	No	No	No	No	No	No
2	14	Yes	No	No	No	No	No	No
2	15	Yes	No	No	No	No	No	No
2	16	Yes	No	No	No	No	No	No
3	1	Yes	No	No	No	No	No	No
3	2	Yes	No	No	No	No	No	No
3	3	Yes	No	No	No	No	No	No
3	4	Yes	No	No	No	No	No	No
3	5	Yes	No	No	No	No	No	No
3	6	Yes	No	No	No	No	No	No
3	7	Yes	No	No	No	No	No	No
3	8	Yes	No	No	No	No	No	No
3	9	Yes	No	No	No	No	No	No
3	10	Yes	No	No	No	No	No	No
3	11	Yes	No	No	No	No	No	No
3	12	Yes	No	No	No	No	No	No
3	13	Yes	No	No	No	No	No	No
3	14	Yes	No	No	No	No	No	No
3	15	Yes	No	No	No	No	No	No
3	16	Yes	No	No	No	No	No	No
4	1	Yes	No	No	No	No	No	No
4	2	Yes	No	No	No	No	No	No
4	3	Yes	No	No	No	No	No	No

4	4	Yes	No	No	No	No	No	No
4	5	Yes	No	No	No	No	No	No
4	6	Yes	No	No	No	No	No	No
4	7	Yes	No	No	No	No	No	No
4	8	Yes	No	No	No	No	No	No
4	9	Yes	No	No	No	No	No	No
4	10	Yes	No	No	No	No	No	No
4	11	Yes	No	No	No	No	No	No
4	12	Yes	No	No	No	No	No	No
4	13	Yes	No	No	No	No	No	No
4	14	Yes	No	No	No	No	No	No
4	15	Yes	No	No	No	No	No	No
4	16	Yes	No	No	No	No	No	No

Louisville - S Boulder Rd & Main

Coordination Options
Coordination Options (MM)3-1

Manual Pattern: Auto
ECPI Coord: Yes
System Source: TBC
System Format: STD
Splits In: Seconds
Offsets In: Seconds
Transition: Smooth
Max Select: MAXINH
Dwell/Add Time: 0
Dly Coord Wz-Lz: No
Force Off: Float
Offset Reference: Yell
Use Ped Time: Yes
Ped Recall: No
Ped Resv: No
Local Zero Ovr: No
Fo Add Ini Green: No
Re-sync Count: 0
Multisync: No

Split Demand (MM)3-5

Demand	Demand
1	2
Phase	Phase

Demand	Detector	Call Time	Cycle Count
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Auto Perm Minimum Green (Seconds) (MM)3-4

Phase	Min Green
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Louisville - S Boulder Rd & Main

Coordination Pattern Data

Pattern Data (MM)3-2								
Pattern	Split Pattern	TS2	Cycle	Std(COS)	Offset Value	Splits In	Offsets In	Actuated Coord
1	1	0-1	120	111	38	Seconds	Seconds	Yes
2	2	0-2	100	211	76	Seconds	Seconds	Yes
3	3	0-3	120	311	15	Seconds	Seconds	Yes

Pattern	Timing Plan	Actuated Walk Rest	Sequence	Phase Reservice	Action Plan	XArt Pattern	Vehicle Perm 1	Vehicle Perm 2	Vehicle Perm 3
1	1	No	1	No	1	0	0	0	0
2	1	No	1	No	2	0	0	0	0
3	1	No	1	No	3	0	0	0	0

Pattern	Ring Split Ext 1	Ring Split Ext 2	Ring Split Ext 3	Ring Split Ext 4	Split Demand Pattern 1	Split Demand Pattern 2	Ring Displ 2	Ring Displ 3	Ring Displ 4
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0

Split Preference Phases

Pattern	Phase	Preference 1	Preference 2
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Special Functions

Pattern	Function Output
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Split Pattern Data (MM)3-3

Coord Phases				Split/Modes																
Split Pattern	Phase	Split	Split Pattern	Mode	Phase															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	14	1	Coord	X					X										
1	2	67	1	Vehicle Recall	X	X				X										
1	4	39	2	Coord	X					X										
1	5	14	2	Vehicle Recall	X	X				X										
1	6	67	3	Coord	X					X										
1	7	18	3	Vehicle Recall	X	X														
1	8	21	3	Coord	X					X										
2	1	12	3	Vehicle Recall	X	X				X										
2	2	53																		
2	4	35																		
2	5	12																		
2	6	53																		
2	7	17																		
2	8	18																		
3	1	14																		
3	2	67																		
3	4	39																		
3	5	14																		
3	6	67																		
3	7	18																		
3	8	21																		

Saturday

Louisville - S Boulder Rd & Main

Preemptor Preempt Plan (MM)4-1

Preempt	Phase	Preempt Phases							Special Function
		Track Clear Veh	Dwell Veh	Dwell Ped	Cycling Veh	Cycling Ped	Exit Phase	Exit Calls	
1	1	Yes	No	No	No	No	No	No	No
1	2	No	No	No	No	No	Yes	Yes	No
1	5	No	No	No	Yes	No	No	No	No
1	6	Yes	No	No	No	No	Yes	Yes	No
1	7	No	No	No	Yes	No	No	No	No
1	8	No	No	No	Yes	No	No	No	No
3	2	No	Yes	No	No	No	No	No	No
3	4	No	No	No	No	No	Yes	No	No
3	5	No	Yes	No	No	No	No	No	No
3	8	No	No	No	No	No	Yes	No	No
4	2	No	No	No	No	No	Yes	No	No
4	6	No	No	No	No	No	Yes	No	No
4	8	No	Yes	No	No	No	No	No	No
5	1	No	Yes	No	No	No	No	No	No
5	4	No	No	No	No	No	Yes	No	No
5	6	No	Yes	No	No	No	No	No	No
5	8	No	No	No	No	No	Yes	No	No
6	2	No	No	No	No	No	Yes	No	No
6	4	No	Yes	No	No	No	No	No	No
6	6	No	No	No	No	No	Yes	No	No
6	7	No	Yes	No	No	No	No	No	No

Preempt	Overlap	Preempt Overlaps			
		Track Clear	Enable Trailing	Dwell Overlap	Cycling Overlap
1	A	Yes	No	No	No
1	B	Yes	No	No	Yes
1	C	No	No	No	Yes
1	D	No	No	No	No
1	E	No	No	No	No
1	F	No	No	No	No
1	G	No	No	No	No
1	H	No	No	No	No
1	I	No	No	No	No
1	J	No	No	No	No
1	K	No	No	No	No
1	L	No	No	No	No
1	M	No	No	No	No
1	N	No	No	No	No
1	O	No	No	No	No
1	P	No	No	No	No
3	A	No	No	No	No
3	B	No	No	No	No
3	C	No	No	No	No
3	D	No	No	Yes	No
3	E	No	No	No	No
3	F	No	No	No	No
3	G	No	No	No	No
3	H	No	No	No	No
3	I	No	No	No	No
3	J	No	No	No	No
3	K	No	No	No	No

3	L	No	No	No	No
3	M	No	No	No	No
3	N	No	No	No	No
3	O	No	No	No	No
3	P	No	No	No	No
4	A	No	No	No	No
4	B	No	No	No	No
4	C	No	No	No	No
4	D	No	No	No	No
4	E	No	No	No	No
4	F	No	No	No	No
4	G	No	No	No	No
4	H	No	No	No	No
4	I	No	No	No	No
4	J	No	No	No	No
4	K	No	No	No	No
4	L	No	No	No	No
4	M	No	No	No	No
4	N	No	No	No	No
4	O	No	No	No	No
4	P	No	No	No	No
5	A	No	No	Yes	No
5	B	No	No	Yes	No
5	C	No	No	No	No
5	D	No	No	No	No
5	E	No	No	No	No
5	F	No	No	No	No
5	G	No	No	No	No
5	H	No	No	No	No
5	I	No	No	No	No
5	J	No	No	No	No
5	K	No	No	No	No
5	L	No	No	No	No
5	M	No	No	No	No
5	N	No	No	No	No
5	O	No	No	No	No
5	P	No	No	No	No
6	A	No	No	No	No
6	B	No	No	Yes	No
6	C	No	No	Yes	No
6	D	No	No	No	No
6	E	No	No	No	No
6	F	No	No	No	No
6	G	No	No	No	No
6	H	No	No	No	No
6	I	No	No	No	No
6	J	No	No	No	No
6	K	No	No	No	No
6	L	No	No	No	No
6	M	No	No	No	No
6	N	No	No	No	No
6	O	No	No	No	No
6	P	No	No	No	No

Preempt	Enable	Preempt Override	Interlock Enable	Detector Lock	Delay	Inhibit	Override Flash	Duration	CLR > GRN
1	Standard	Yes	No	Yes	0	0	No	10	No
2	No	Yes	No	Yes	0	0	No	0	No
3	Standard	No	No	Yes	0	0	No	10	No

4	Standard	No	No	Yes	0	0	No	10	No
5	Standard	No	No	Yes	0	0	No	10	No
6	Standard	No	No	Yes	0	0	No	10	No
7	No	Yes	No	Yes	0	0	No	0	No
8	No	Yes	No	Yes	0	0	No	0	No
9	No	Yes	No	Yes	0	0	No	0	No
10	No	Yes	No	Yes	0	0	No	0	No

Preempt	Term Overlap Asap	PC Through Yellow	Terminate Phase	Ped Dark	Track Clearance Re- service	Dwell Flash	Linked Pmt	Flash Exit Color	Preempt To Coord
1	No	Yes	No	No	No	Off	0	Green	No
2	No	No	No	No	No	Off	0	Green	No
3	No	Yes	No	No	No	Off	0	Green	No
4	No	Yes	No	No	No	Off	0	Green	No
5	No	Yes	No	No	No	Off	0	Green	No
6	No	Yes	No	No	No	Off	0	Green	No
7	No	No	No	No	No	Off	0	Green	No
8	No	No	No	No	No	Off	0	Green	No
9	No	No	No	No	No	Off	0	Green	No
10	No	No	No	No	No	Off	0	Green	No

Preempt	Exit Timing Plan	Reservice	Free During Pmt Ring 1	Free During Pmt Ring 2	Free During Pmt Ring 3	Free During Pmt Ring 4
1	0	0	No	No	No	No
2	0	0	No	No	No	No
3	0	0	No	No	No	No
4	0	0	No	No	No	No
5	0	0	No	No	No	No
6	0	0	No	No	No	No
7	0	0	No	No	No	No
8	0	0	No	No	No	No
9	0	0	No	No	No	No
10	0	0	No	No	No	No

Preempt	Entrance Walk	Entrance Ped Clear	Entrance Min Green	Entrance Yellow	Entrance Red	Track Clear Min Green	Gate Down Ext Green	Gate Down Max Green	Track Clear Yellow	Track Clear Red
1	0	5	5	4.0	1.0	6	0	0	4.0	1.0
2	0	255	5	4.0	1.0	0	0	0	4.0	1.0
3	0	5	5	4.0	1.0	0	0	0	4.0	1.0
4	0	6	5	4.0	1.0	0	0	0	4.0	1.0
5	0	6	5	4.0	1.0	0	0	0	4.0	1.0
6	0	6	5	4.0	1.0	0	0	0	4.0	1.0
7	0	255	5	4.0	1.0	0	0	0	4.0	1.0
8	0	255	5	4.0	1.0	0	0	0	4.0	1.0
9	0	255	5	4.0	1.0	0	0	0	4.0	1.0
10	0	255	5	4.0	1.0	0	0	0	4.0	1.0

Preempt	Min Dwell Time	Extend Preempt Input Time	Max Preempt Call Time	Exit Yellow Time	Exit Red Time	Preempt Active Out	Preempt Active Dwell	Other Priority Preempt	Non-Priority Preempt
1	0	0.0	0	4.0	1.0	On	No	Off	Off
2	0	0.0	0	4.0	1.0	On	No	Off	Off
3	0	0.0	120	4.0	1.0	On	No	Off	Off
4	0	0.0	120	4.0	1.0	On	No	Off	Off
5	0	0.0	120	4.0	1.0	On	No	Off	Off
6	0	0.0	120	4.0	1.0	On	No	Off	Off
7	0	0.0	0	4.0	1.0	On	No	Off	Off
8	0	0.0	0	4.0	1.0	On	No	Off	Off
9	0	0.0	0	4.0	1.0	On	No	Off	Off
10	0	0.0	0	4.0	1.0	On	No	Off	Off

Louisville - S Boulder Rd & Main

Preemptor Preempt Filtering

Enable Preempt Filtering and
TSP/SCP (MM)4-2

Input	Solid	Pulsing
3	Preemption -3	Preemption -7
4	Preemption -4	Preemption -8
5	Preemption -5	Preemption -9
6	Preemption -6	Preemption -10

Louisville - S Boulder Rd & Main

Time Base Clock/Calendar

Clock/Calendar Options (MM)5-1

Enable Action Plan: 0

Sync Reference Time: 12:00 AM

Sync Reference: Reference Time

Day Light Savings: No

Time Reset Input Set Time: 3:30:00

Standard Time From GMT: 0

Louisville - S Boulder Rd & Main

Time Base Action Plan

Action Plan (MM)5-2											
Plan	Pattern	Veh Det Plan	Flash	Red Reset	Controller Seq	Timing Plan	System Override	Detector Log	Veh Det Diag Plan	Ped Det Diag Plan	Dimming Enable
1	1	1	No	No	1	1	Yes	None	0	0	No
2	2	1	No	No	1	1	Yes	None	0	0	No
3	3	1	No	No	1	1	Yes	None	0	0	No
20	254 - FREE	1	No	No	1	1	Yes	None	0	0	No
100	Auto	2	No	No	1	1	Yes	None	0	0	No

Action Plan Phases											
Plan	Phase	Red Rcl	Walk 2	Vex 2	Veh Rcl	Max Rcl	Max 2	Max 3	CS Inhibit	Omit	

Acion Plan Special Functions		Action Plan Auxiliary Functions	
Plan	Function	Plan	Function

Logic Statement Control		
Plan	LP	Statement Control
1	1	E
2	1	E
3	1	E
20	1	E
100	1	E

Louisville - S Boulder Rd & Main

Time Base Day Plan/Schedule

Day Plan (MM)5-3			
Plan	Event	Action Plan	Start Time
1	1	1	6:30 AM
1	2	2	9:30 AM
1	3	3	3:00 PM
1	4	20	7:30 PM
2	1	20	8:00 AM

Schedule (MM)5-4				
Schedule Number	Day Plan Number	Months	Days of Week	Days of Month
1	1	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Mon, Tues, Wed, Thurs, Fri	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31
2	2	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sept, Oct, Nov, Dec	Sun, Sat	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Louisville - S Boulder Rd & Main

Time Base Exceptions

Day	Fixed/Float	Exception Day Program (MM)5-5			
		Month	Day of Week/Month	Week of Month/Year	Day Plan
1	FLOAT	0	0	0	0
2	FLOAT	0	0	0	0
3	FLOAT	0	0	0	0
4	FLOAT	0	0	0	0
5	FLOAT	0	0	0	0
6	FLOAT	0	0	0	0
7	FLOAT	0	0	0	0
8	FLOAT	0	0	0	0
9	FLOAT	0	0	0	0
10	FLOAT	0	0	0	0
11	FLOAT	0	0	0	0
12	FLOAT	0	0	0	0
13	FLOAT	0	0	0	0
14	FLOAT	0	0	0	0
15	FLOAT	0	0	0	0
16	FLOAT	0	0	0	0
17	FLOAT	0	0	0	0
18	FLOAT	0	0	0	0
19	FLOAT	0	0	0	0
20	FLOAT	0	0	0	0
21	FLOAT	0	0	0	0
22	FLOAT	0	0	0	0
23	FLOAT	0	0	0	0
24	FLOAT	0	0	0	0
25	FLOAT	0	0	0	0
26	FLOAT	0	0	0	0
27	FLOAT	0	0	0	0
28	FLOAT	0	0	0	0
29	FLOAT	0	0	0	0
30	FLOAT	0	0	0	0
31	FLOAT	0	0	0	0
32	FLOAT	0	0	0	0
33	FLOAT	0	0	0	0
34	FLOAT	0	0	0	0
35	FLOAT	0	0	0	0
36	FLOAT	0	0	0	0

Louisville - S Boulder Rd & Main

Detectors

Detectors Page 1

Vehicle Detectors Setup (MM)6-1	
Vehicle Plan	Detector Number Called

Vehicle Detector Setup (MM)6-2 continued

Detector Number	ECPI	TS2 Detector	Detector Description
13	0	No	
14	0	No	
15	0	No	
16	0	No	

Vehicle Detector Setup (MM)6-2 continued

Detector Number	Vehicle Plan	Assigned Phase	Switch Phase	Extend Time	Delay Time	Queue Limit	Yellow Lock	Added Option	Call Option	Passage Option	Queue Option	NTCIP Occupancy	NTCIP Volume	ECPI Log	Red Lock
1	1	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	2	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	3	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
1	4	1	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	1	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	2	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	3	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
2	4	2	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	1	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	2	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	3	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
3	4	3	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	1	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	2	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	3	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
4	4	4	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	1	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	2	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	3	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
5	4	5	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	1	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	2	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	3	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
6	4	6	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	1	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	2	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	3	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
7	4	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	1	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	2	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	3	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
8	4	8	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	1	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	2	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	3	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
9	4	9	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	1	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	2	7	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	3	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
10	4	10	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	2	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	3	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
11	4	11	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	2	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	3	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
12	4	12	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	2	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
13	3	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

13	4	13	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	2	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	3	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
14	4	14	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	2	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	3	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
15	4	15	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	2	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	3	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No
16	4	16	0	0.0	0.0	0	No	No	Yes	Yes	No	No	No	No	No

Ped and System Detector Options
(MM)6-4

Phase Ped Detector

Local Ped Detector	Number
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

Local System Detector

Local System Detector	Number
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Louisville - S Boulder Rd & Main

Detectors**Detectors Page 2**

Log - Speed Detector Setup (MM)6-5

NTCIP Log ECPI Log Period: Length Unit:
 Period: 60 TBAP Inch

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap Length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM)6-6

Plan	Detector	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
1	1	0	0	0	1	255	0
1	2	0	0	0	1	255	0
1	3	0	0	0	1	255	0
1	4	0	0	0	1	255	0
1	5	0	0	0	1	255	0
1	6	0	0	0	1	255	0
1	7	0	0	0	1	255	0
1	8	0	0	0	1	255	0
1	9	0	0	0	1	255	0
1	10	0	0	0	1	255	0
1	11	0	0	0	1	255	0
1	12	0	0	0	1	255	0
1	13	0	0	0	1	255	0
1	14	0	0	0	1	255	0
1	15	0	0	0	1	255	0
1	16	0	0	0	1	255	0
1	17	0	0	0	1	255	0
1	18	0	0	0	1	255	0
1	19	0	0	0	1	255	0
1	20	0	0	0	1	255	0
1	21	0	0	0	1	255	0
1	22	0	0	0	1	255	0
1	23	0	0	0	1	255	0
1	24	0	0	0	1	255	0
1	25	0	0	0	1	255	0
1	26	0	0	0	1	255	0
1	27	0	0	0	1	255	0
1	28	0	0	0	1	255	0

1	29	0	0	0	1	255	0
1	30	0	0	0	1	255	0
1	31	0	0	0	1	255	0
1	32	0	0	0	1	255	0
1	33	0	0	0	1	255	0
1	34	0	0	0	1	255	0
1	35	0	0	0	1	255	0
1	36	0	0	0	1	255	0
1	37	0	0	0	1	255	0
1	38	0	0	0	1	255	0
1	39	0	0	0	1	255	0
1	40	0	0	0	1	255	0
1	41	0	0	0	1	255	0
1	42	0	0	0	1	255	0
1	43	0	0	0	1	255	0
1	44	0	0	0	1	255	0
1	45	0	0	0	1	255	0
1	46	0	0	0	1	255	0
1	47	0	0	0	1	255	0
1	48	0	0	0	1	255	0
1	49	0	0	0	1	255	0
1	50	0	0	0	1	255	0
1	51	0	0	0	1	255	0
1	52	0	0	0	1	255	0
1	53	0	0	0	1	255	0
1	54	0	0	0	1	255	0
1	55	0	0	0	1	255	0
1	56	0	0	0	1	255	0
1	57	0	0	0	1	255	0
1	58	0	0	0	1	255	0
1	59	0	0	0	1	255	0
1	60	0	0	0	1	255	0
1	61	0	0	0	1	255	0
1	62	0	0	0	1	255	0
1	63	0	0	0	1	255	0
1	64	0	0	0	1	255	0
2	1	0	0	0	1	255	0
2	2	0	0	0	1	255	0
2	3	0	0	0	1	255	0
2	4	0	0	0	1	255	0
2	5	0	0	0	1	255	0
2	6	0	0	0	1	255	0
2	7	0	0	0	1	255	0
2	8	0	0	0	1	255	0
2	9	0	0	0	1	255	0
2	10	0	0	0	1	255	0
2	11	0	0	0	1	255	0
2	12	0	0	0	1	255	0
2	13	0	0	0	1	255	0
2	14	0	0	0	1	255	0
2	15	0	0	0	1	255	0
2	16	0	0	0	1	255	0
2	17	0	0	0	1	255	0
2	18	0	0	0	1	255	0
2	19	0	0	0	1	255	0
2	20	0	0	0	1	255	0
2	21	0	0	0	1	255	0
2	22	0	0	0	1	255	0
2	23	0	0	0	1	255	0
2	24	0	0	0	1	255	0

2	25	0	0	0	1	255	0
2	26	0	0	0	1	255	0
2	27	0	0	0	1	255	0
2	28	0	0	0	1	255	0
2	29	0	0	0	1	255	0
2	30	0	0	0	1	255	0
2	31	0	0	0	1	255	0
2	32	0	0	0	1	255	0
2	33	0	0	0	1	255	0
2	34	0	0	0	1	255	0
2	35	0	0	0	1	255	0
2	36	0	0	0	1	255	0
2	37	0	0	0	1	255	0
2	38	0	0	0	1	255	0
2	39	0	0	0	1	255	0
2	40	0	0	0	1	255	0
2	41	0	0	0	1	255	0
2	42	0	0	0	1	255	0
2	43	0	0	0	1	255	0
2	44	0	0	0	1	255	0
2	45	0	0	0	1	255	0
2	46	0	0	0	1	255	0
2	47	0	0	0	1	255	0
2	48	0	0	0	1	255	0
2	49	0	0	0	1	255	0
2	50	0	0	0	1	255	0
2	51	0	0	0	1	255	0
2	52	0	0	0	1	255	0
2	53	0	0	0	1	255	0
2	54	0	0	0	1	255	0
2	55	0	0	0	1	255	0
2	56	0	0	0	1	255	0
2	57	0	0	0	1	255	0
2	58	0	0	0	1	255	0
2	59	0	0	0	1	255	0
2	60	0	0	0	1	255	0
2	61	0	0	0	1	255	0
2	62	0	0	0	1	255	0
2	63	0	0	0	1	255	0
2	64	0	0	0	1	255	0
3	1	0	0	0	1	255	0
3	2	0	0	0	1	255	0
3	3	0	0	0	1	255	0
3	4	0	0	0	1	255	0
3	5	0	0	0	1	255	0
3	6	0	0	0	1	255	0
3	7	0	0	0	1	255	0
3	8	0	0	0	1	255	0
3	9	0	0	0	1	255	0
3	10	0	0	0	1	255	0
3	11	0	0	0	1	255	0
3	12	0	0	0	1	255	0
3	13	0	0	0	1	255	0
3	14	0	0	0	1	255	0
3	15	0	0	0	1	255	0
3	16	0	0	0	1	255	0
3	17	0	0	0	1	255	0
3	18	0	0	0	1	255	0
3	19	0	0	0	1	255	0
3	20	0	0	0	1	255	0

3	21	0	0	0	1	255	0
3	22	0	0	0	1	255	0
3	23	0	0	0	1	255	0
3	24	0	0	0	1	255	0
3	25	0	0	0	1	255	0
3	26	0	0	0	1	255	0
3	27	0	0	0	1	255	0
3	28	0	0	0	1	255	0
3	29	0	0	0	1	255	0
3	30	0	0	0	1	255	0
3	31	0	0	0	1	255	0
3	32	0	0	0	1	255	0
3	33	0	0	0	1	255	0
3	34	0	0	0	1	255	0
3	35	0	0	0	1	255	0
3	36	0	0	0	1	255	0
3	37	0	0	0	1	255	0
3	38	0	0	0	1	255	0
3	39	0	0	0	1	255	0
3	40	0	0	0	1	255	0
3	41	0	0	0	1	255	0
3	42	0	0	0	1	255	0
3	43	0	0	0	1	255	0
3	44	0	0	0	1	255	0
3	45	0	0	0	1	255	0
3	46	0	0	0	1	255	0
3	47	0	0	0	1	255	0
3	48	0	0	0	1	255	0
3	49	0	0	0	1	255	0
3	50	0	0	0	1	255	0
3	51	0	0	0	1	255	0
3	52	0	0	0	1	255	0
3	53	0	0	0	1	255	0
3	54	0	0	0	1	255	0
3	55	0	0	0	1	255	0
3	56	0	0	0	1	255	0
3	57	0	0	0	1	255	0
3	58	0	0	0	1	255	0
3	59	0	0	0	1	255	0
3	60	0	0	0	1	255	0
3	61	0	0	0	1	255	0
3	62	0	0	0	1	255	0
3	63	0	0	0	1	255	0
3	64	0	0	0	1	255	0
4	1	0	0	0	1	255	0
4	2	0	0	0	1	255	0
4	3	0	0	0	1	255	0
4	4	0	0	0	1	255	0
4	5	0	0	0	1	255	0
4	6	0	0	0	1	255	0
4	7	0	0	0	1	255	0
4	8	0	0	0	1	255	0
4	9	0	0	0	1	255	0
4	10	0	0	0	1	255	0
4	11	0	0	0	1	255	0
4	12	0	0	0	1	255	0
4	13	0	0	0	1	255	0
4	14	0	0	0	1	255	0
4	15	0	0	0	1	255	0
4	16	0	0	0	1	255	0

4	17	0	0	0	1	255	0
4	18	0	0	0	1	255	0
4	19	0	0	0	1	255	0
4	20	0	0	0	1	255	0
4	21	0	0	0	1	255	0
4	22	0	0	0	1	255	0
4	23	0	0	0	1	255	0
4	24	0	0	0	1	255	0
4	25	0	0	0	1	255	0
4	26	0	0	0	1	255	0
4	27	0	0	0	1	255	0
4	28	0	0	0	1	255	0
4	29	0	0	0	1	255	0
4	30	0	0	0	1	255	0
4	31	0	0	0	1	255	0
4	32	0	0	0	1	255	0
4	33	0	0	0	1	255	0
4	34	0	0	0	1	255	0
4	35	0	0	0	1	255	0
4	36	0	0	0	1	255	0
4	37	0	0	0	1	255	0
4	38	0	0	0	1	255	0
4	39	0	0	0	1	255	0
4	40	0	0	0	1	255	0
4	41	0	0	0	1	255	0
4	42	0	0	0	1	255	0
4	43	0	0	0	1	255	0
4	44	0	0	0	1	255	0
4	45	0	0	0	1	255	0
4	46	0	0	0	1	255	0
4	47	0	0	0	1	255	0
4	48	0	0	0	1	255	0
4	49	0	0	0	1	255	0
4	50	0	0	0	1	255	0
4	51	0	0	0	1	255	0
4	52	0	0	0	1	255	0
4	53	0	0	0	1	255	0
4	54	0	0	0	1	255	0
4	55	0	0	0	1	255	0
4	56	0	0	0	1	255	0
4	57	0	0	0	1	255	0
4	58	0	0	0	1	255	0
4	59	0	0	0	1	255	0
4	60	0	0	0	1	255	0
4	61	0	0	0	1	255	0
4	62	0	0	0	1	255	0
4	63	0	0	0	1	255	0
4	64	0	0	0	1	255	0

Pedestrian Detector Diagnostics (MM)6-7

Plan	Detector	Counts	Act	Pres	Multiplier
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Appendix E: Synchro Modeling Reports

1: Front Street & S Boulder Road
Year 2022 Existing AM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	738	1	2	3	1026	6	0	0	2	0	0
Future Volume (vph)	0	738	1	2	3	1026	6	0	0	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	802	1	0	5	1122	0	0	0	2	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	38.6%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2022 Existing AM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2022 Existing AM.syn

Intersection													
Int Delay, s/veh	0.1												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↓	↑↑				↑			↑
Traffic Vol, veh/h	0	738	1	2	3	1026	6	0	0	2	0	0	9
Future Vol, veh/h	0	738	1	2	3	1026	6	0	0	2	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	802	1	2	3	1115	7	0	0	2	0	0	10
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	802	803	0	0	-	-	401	-	-	561
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	445	817	-	-	0	0	599	0	0	471
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	612	612	-	-	-	-	599	-	-	471
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.1			11			12.8			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	599	-	-	612	-	-	471						
HCM Lane V/C Ratio	0.004	-	-	0.009	-	-	0.021						
HCM Control Delay (s)	11	-	-	10.9	-	-	12.8						
HCM Lane LOS	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2022 Existing AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	26	698	6	3	1	1000	10	1	0	6	18
Future Volume (vph)	8	26	698	6	3	1	1000	10	1	0	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.998			0.882		
Flt Protected		0.950				0.950				0.994		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3532	0	0	1633	0	0
Flt Permitted		0.950				0.950				0.994		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3532	0	0	1633	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	766	0	0	4	1098	0	0	8	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	40.7%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2022 Existing AM.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	23
Future Volume (vph)	0	23
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.925	
Flt Protected	0.978	
Satd. Flow (prot)	1685	0
Flt Permitted	0.978	
Satd. Flow (perm)	1685	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	45	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2022 Existing AM.syn

Intersection																			
Int Delay, s/veh	1.3																		
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR					
Lane Configurations																			
Traffic Vol, veh/h	8	26	698	6	3	1	1000	10	1	0	6	18	0	23					
Future Vol, veh/h	8	26	698	6	3	1	1000	10	1	0	6	18	0	23					
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop					
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None					
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-					
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	92	92					
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2					
Mvmt Flow	9	28	759	7	3	1	1087	11	1	0	7	20	0	25					
Major/Minor	Major1			Major2			Minor1			Minor2									
Conflicting Flow All	1098	1098	0	0	765	766	0	0	1389	1943	383	1555	1941	549					
Stage 1	-	-	-	-	-	-	-	-	837	837	-	1101	1101	-					
Stage 2	-	-	-	-	-	-	-	-	552	1106	-	454	840	-					
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32					
Pot Cap-1 Maneuver	287	631	-	-	470	843	-	-	102	64	615	77	64	480					
Stage 1	-	-	-	-	-	-	-	-	327	380	-	226	286	-					
Stage 2	-	-	-	-	-	-	-	-	486	284	-	555	379	-					
Platoon blocked, %			-	-			-	-											
Mov Cap-1 Maneuver	482	482	-	-	524	524	-	-	90	59	615	71	59	480					
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	90	59	-	71	59	-					
Stage 1	-	-	-	-	-	-	-	-	302	351	-	209	284	-					
Stage 2	-	-	-	-	-	-	-	-	457	282	-	507	350	-					
Approach	EB			WB			NB			SB									
HCM Control Delay, s	0.6			0			16			43.9									
HCM LOS							C			E									
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1											
Capacity (veh/h)	335	482	-	-	524	-	-	136											
HCM Lane V/C Ratio	0.023	0.077	-	-	0.008	-	-	0.328											
HCM Control Delay (s)	16	13.1	-	-	11.9	-	-	43.9											
HCM Lane LOS	C	B	-	-	B	-	-	E											
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	1.3											

3: SH 42 & S Boulder Road
Year 2022 Existing AM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	270	377	138	250	634	140	167	429	202	3	138	543
Future Volume (vph)	270	377	138	250	634	140	167	429	202	3	138	543
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270	220		0		185	
Storage Lanes	2		0	2		1	2		0		2	
Taper Length (ft)	80			135			70				155	
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.95	0.97	0.95
Frt		0.960				0.850		0.952				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3433	3398	0	3433	3539	1583	3433	3369	0	0	3433	3539
Flt Permitted	0.950			0.950			0.950				0.571	
Satd. Flow (perm)	3433	3398	0	3433	3539	1583	3433	3369	0	0	2063	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		44				182		71				
Link Speed (mph)		35			35			45				45
Link Distance (ft)		465			1815			418				1337
Travel Time (s)		9.1			35.4			6.3				20.3
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	293	560	0	272	689	152	182	686	0	0	153	590
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases	5	2		1	6		3	8			7	4
Permitted Phases						6				7		
Detector Phase	5	2		1	6	6	3	8		7	7	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	6.0		5.0	5.0	6.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	40.0		10.0	10.0	36.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	47.0		12.0	12.0	43.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	39.2%		10.0%	10.0%	35.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0			5.0	6.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	Max		None	None	Max
Act Effect Green (s)	15.0	36.3		13.7	35.0	35.0	10.3	41.0			7.0	37.7
Actuated g/C Ratio	0.12	0.30		0.11	0.29	0.29	0.09	0.34			0.06	0.31
v/c Ratio	0.68	0.53		0.69	0.67	0.26	0.62	0.57			1.27	0.53
Control Delay	59.1	34.3		60.8	41.2	3.6	62.3	31.0			218.4	36.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	59.1	34.3		60.8	41.2	3.6	62.3	31.0			218.4	36.2
LOS	E	C		E	D	A	E	C			F	D
Approach Delay		42.8			40.8			37.5				51.9
Approach LOS		D			D			D				D
Queue Length 50th (ft)	113	176		105	247	0	71	204			~77	199
Queue Length 95th (ft)	161	235		151	314	31	109	266			#147	257
Internal Link Dist (ft)		385			1735			338				1257

3: SH 42 & S Boulder Road
Year 2022 Existing AM.syn

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	354
Future Volume (vph)	354
Ideal Flow (vphpl)	1900
Storage Length (ft)	270
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	318
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	385
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	36.0
Total Split (s)	43.0
Total Split (%)	35.8%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	37.7
Actuated g/C Ratio	0.31
v/c Ratio	0.54
Control Delay	9.8
Queue Delay	0.0
Total Delay	9.8
LOS	A
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	37
Queue Length 95th (ft)	128
Internal Link Dist (ft)	

3: SH 42 & S Boulder Road
Year 2022 Existing AM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Turn Bay Length (ft)	150			225		270	220				185	
Base Capacity (vph)	429	1058		429	1032	590	314	1197			120	1110
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	0.68	0.53		0.63	0.67	0.26	0.58	0.57			1.27	0.53

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 43.7

Intersection LOS: D

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

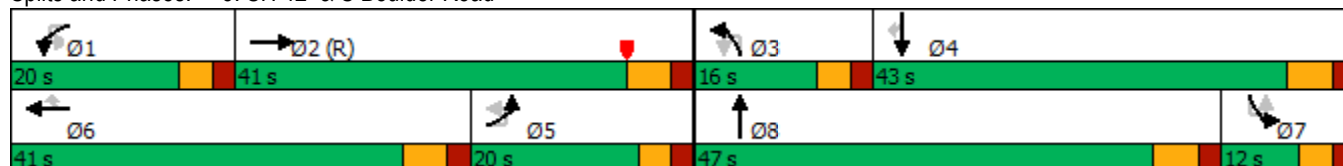
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2022 Existing AM.syn



Lane Group	SBR
Turn Bay Length (ft)	270
Base Capacity (vph)	715
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.54
Intersection Summary	

4: Front Street & Harper Street
Year 2022 Existing AM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	0	0	10	0	0
Future Volume (vph)	10	0	0	10	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	11	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2022 Existing AM.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	3	1	2	673	752	0
Future Volume (vph)	0	3	1	2	673	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	3	0	0	3	732	817	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	45.4%			ICU Level of Service A			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2022 Existing AM.syn

Intersection							
Int Delay, s/veh	0.1						
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	0	3	1	2	673	752	0
Future Vol, veh/h	0	3	1	2	673	752	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	3	1	2	732	817	0
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1553	409	817	817	0	-	0
Stage 1	817	-	-	-	-	-	-
Stage 2	736	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	114	592	334	809	-	-	-
Stage 1	396	-	-	-	-	-	-
Stage 2	473	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	113	592	547	547	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-	-
Stage 1	394	-	-	-	-	-	-
Stage 2	473	-	-	-	-	-	-
Approach	EB		NB		SB		
HCM Control Delay, s	11.1		0.1		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	547		-	592	-	-	
HCM Lane V/C Ratio	0.006		-	0.006	-	-	
HCM Control Delay (s)	11.6		-	11.1	-	-	
HCM Lane LOS	B		-	B	-	-	
HCM 95th %tile Q(veh)	0		-	0	-	-	

1: Front Street & S Boulder Road
Year 2022 Existing PM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1254	7	1	5	1219	5	0	0	12	0	0
Future Volume (vph)	0	1254	7	1	5	1219	5	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1363	8	0	6	1330	0	0	0	13	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.7%				ICU Level of Service A							
Analysis Period (min)	15											

1: Front Street & S Boulder Road
Year 2022 Existing PM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	13
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2022 Existing PM.syn

Intersection													
Int Delay, s/veh	0.2												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1254	7	1	5	1219	5	0	0	12	0	0	12
Future Vol, veh/h	0	1254	7	1	5	1219	5	0	0	12	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1363	8	1	5	1325	5	0	0	13	0	0	13
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1363	1371	0	0	-	-	682	-	-	665
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	194	497	-	-	0	0	392	0	0	403
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	390	390	-	-	-	-	392	-	-	403
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.1			14.5			14.2			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	392	-	-	390	-	-	403						
HCM Lane V/C Ratio	0.033	-	-	0.017	-	-	0.032						
HCM Control Delay (s)	14.5	-	-	14.4	-	-	14.2						
HCM Lane LOS	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2022 Existing PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	29	26	1208	11	2	14	1131	11	10	3	7	36
Future Volume (vph)	29	26	1208	11	2	14	1131	11	10	3	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.951		
Flt Protected		0.950				0.950				0.976		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1729	0	0
Flt Permitted		0.950				0.950				0.976		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1729	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	1325	0	0	17	1241	0	0	22	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.1%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2022 Existing PM.syn



Lane Group	SBT	SBR
Lane Configurations	↕	
Traffic Volume (vph)	1	31
Future Volume (vph)	1	31
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.938	
Flt Protected	0.974	
Satd. Flow (prot)	1702	0
Flt Permitted	0.974	
Satd. Flow (perm)	1702	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	74	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2022 Existing PM.syn

Intersection														
Int Delay, s/veh	19.4													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	26	1208	11	2	14	1131	11	10	3	7	36	1	31
Future Vol, veh/h	29	26	1208	11	2	14	1131	11	10	3	7	36	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	28	1313	12	2	15	1229	12	11	3	8	39	1	34
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1241	1241	0	0	1325	1325	0	0	2088	2714	663	2047	2714	621
Stage 1	-	-	-	-	-	-	-	-	1439	1439	-	1269	1269	-
Stage 2	-	-	-	-	-	-	-	-	649	1275	-	778	1445	-
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	232	557	-	-	205	517	-	-	30	21	404	~ 33	21	430
Stage 1	-	-	-	-	-	-	-	-	140	197	-	178	238	-
Stage 2	-	-	-	-	-	-	-	-	425	236	-	355	195	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	303	303	-	-	432	432	-	-	22	16	404	~ 23	16	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	22	16	-	~ 23	16	-
Stage 1	-	-	-	-	-	-	-	-	112	158	-	143	229	-
Stage 2	-	-	-	-	-	-	-	-	374	227	-	274	156	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.9			0.2			270.3			\$ 619.3				
HCM LOS							F			F				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	30	303	-	-	432	-	-	40						
HCM Lane V/C Ratio	0.725	0.197	-	-	0.04	-	-	1.848						
HCM Control Delay (s)	270.3	19.8	-	-	13.7	-	-	\$ 619.3						
HCM Lane LOS	F	C	-	-	B	-	-	F						
HCM 95th %tile Q(veh)	2.4	0.7	-	-	0.1	-	-	7.8						
Notes														
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon						

3: SH 42 & S Boulder Road
Year 2022 Existing PM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	472	628	140	270	586	136	4	148	659	258	6	182
Future Volume (vph)	472	628	140	270	586	136	4	148	659	258	6	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270		220		0		185
Storage Lanes	2		0	2		1		2		0		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95	0.97
Frt		0.973				0.850			0.958			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3444	0	3433	3539	1583	0	3433	3391	0	0	3433
Flt Permitted	0.950			0.950				0.364				0.571
Satd. Flow (perm)	3433	3444	0	3433	3539	1583	0	1315	3391	0	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		22				182			52			
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	513	835	0	293	637	148	0	165	996	0	0	205
Turn Type	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases						6	3				7	
Detector Phase	5	2		1	6	6	3	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	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)	5.0	6.0		5.0	6.0	6.0		5.0	6.0			5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	None	Max		None	None
Act Effect Green (s)	15.0	36.0		14.0	35.0	35.0		11.0	41.0			7.0
Actuated g/C Ratio	0.12	0.30		0.12	0.29	0.29		0.09	0.34			0.06
v/c Ratio	1.20	0.80		0.73	0.62	0.25		1.38	0.84			1.71
Control Delay	153.8	44.6		62.3	39.8	3.2		253.2	41.8			385.5
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	153.8	44.6		62.3	39.8	3.2		253.2	41.8			385.5
LOS	F	D		E	D	A		F	D			F
Approach Delay		86.1			40.9				71.9			
Approach LOS		F			D				E			
Queue Length 50th (ft)	~247	308		113	224	0		~87	355			~120
Queue Length 95th (ft)	#357	389		161	287	28		#160	443			#200
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2022 Existing PM.syn

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	561	306
Future Volume (vph)	561	306
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		331
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	610	333
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.0	37.0
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.56	0.46
Control Delay	37.1	5.7
Queue Delay	0.0	0.0
Total Delay	37.1	5.7
LOS	D	A
Approach Delay	90.2	
Approach LOS	F	
Queue Length 50th (ft)	207	1
Queue Length 95th (ft)	267	67
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road
Year 2022 Existing PM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150			225		270		220				185
Base Capacity (vph)	429	1047		429	1032	590		120	1192			120
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	1.20	0.80		0.68	0.62	0.25		1.38	0.84			1.71

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.71

Intersection Signal Delay: 73.3

Intersection LOS: E

Intersection Capacity Utilization 79.8%

ICU Level of Service D

Analysis Period (min) 15

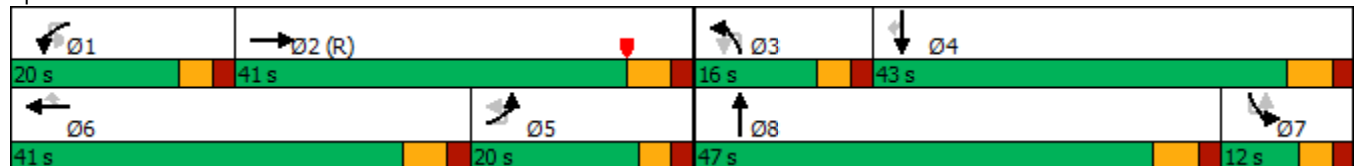
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2022 Existing PM.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1091	717
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.56	0.46
Intersection Summary		

4: Front Street & Harper Street
Year 2022 Existing PM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	0	12	0	0
Future Volume (vph)	12	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2022 Existing PM.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	1	2	0	1050	1086	1
Future Volume (vph)	0	1	2	0	1050	1086	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1	0	0	2	1141	1181	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	65.3%			ICU Level of Service C			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2022 Existing PM.syn

Intersection							
Int Delay, s/veh	0						
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	0	1	2	0	1050	1086	1
Future Vol, veh/h	0	1	2	0	1050	1086	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	0	1141	1180	1
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	2322	591	1182	1181	0	-	0
Stage 1	1181	-	-	-	-	-	-
Stage 2	1141	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	36	451	190	589	-	-	-
Stage 1	255	-	-	-	-	-	-
Stage 2	304	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	36	451	190	190	-	-	-
Mov Cap-2 Maneuver	36	-	-	-	-	-	-
Stage 1	252	-	-	-	-	-	-
Stage 2	304	-	-	-	-	-	-
Approach	EB	NB		SB			
HCM Control Delay, s	13	0		0			
HCM LOS	B						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	190	-	451	-	-		
HCM Lane V/C Ratio	0.011	-	0.002	-	-		
HCM Control Delay (s)	24.2	-	13	-	-		
HCM Lane LOS	C	-	B	-	-		
HCM 95th %tile Q(veh)	0	-	0	-	-		

1: Front Street & S Boulder Road
Year 2022 Existing SAT.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		 			 	 						
Traffic Volume (vph)	0	978	10	3	12	1038	3	0	0	25	0	0
Future Volume (vph)	0	978	10	3	12	1038	3	0	0	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1063	11	0	16	1131	0	0	0	27	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	38.8%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2022 Existing SAT.syn



Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	8
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2022 Existing SAT.syn

Intersection													
Int Delay, s/veh	0.3												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↓	↑↓				↑			↑
Traffic Vol, veh/h	0	978	10	3	12	1038	3	0	0	25	0	0	7
Future Vol, veh/h	0	978	10	3	12	1038	3	0	0	25	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1063	11	3	13	1128	3	0	0	27	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1063	1074	0	0	-	-	532	-	-	566
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	302	645	-	-	0	0	492	0	0	467
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	516	516	-	-	-	-	492	-	-	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.2			12.7			12.8			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	492	-	-	516	-	-	467						
HCM Lane V/C Ratio	0.055	-	-	0.032	-	-	0.016						
HCM Control Delay (s)	12.7	-	-	12.2	-	-	12.8						
HCM Lane LOS	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2022 Existing SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	36	956	10	3	26	968	7	9	1	12	23
Future Volume (vph)	3	36	956	10	3	26	968	7	9	1	12	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.998				0.999			0.927		
Flt Protected		0.950				0.950				0.980		
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	1692	0	0
Flt Permitted		0.950				0.950				0.980		
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	1692	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	1050	0	0	31	1060	0	0	24	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.3%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2022 Existing SAT.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	50
Future Volume (vph)	1	50
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.909	
Flt Protected	0.985	
Satd. Flow (prot)	1668	0
Flt Permitted	0.985	
Satd. Flow (perm)	1668	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	80	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2022 Existing SAT.syn

Intersection														
Int Delay, s/veh	3.6													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	36	956	10	3	26	968	7	9	1	12	23	1	50
Future Vol, veh/h	3	36	956	10	3	26	968	7	9	1	12	23	1	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	39	1039	11	3	28	1052	8	10	1	13	25	1	54
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1060	1060	0	0	1050	1050	0	0	1718	2251	525	1722	2252	530
Stage 1	-	-	-	-	-	-	-	-	1129	1129	-	1118	1118	-
Stage 2	-	-	-	-	-	-	-	-	589	1122	-	604	1134	-
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	304	653	-	-	308	659	-	-	58	41	497	57	41	493
Stage 1	-	-	-	-	-	-	-	-	217	277	-	221	281	-
Stage 2	-	-	-	-	-	-	-	-	461	279	-	452	276	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	590	590	-	-	587	587	-	-	46	36	497	49	36	493
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	46	36	-	49	36	-
Stage 1	-	-	-	-	-	-	-	-	202	257	-	205	266	-
Stage 2	-	-	-	-	-	-	-	-	386	264	-	407	256	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.4			0.3			59.7			76.3				
HCM LOS							F			F				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	89	590	-	-	587	-	-	124						
HCM Lane V/C Ratio	0.269	0.072	-	-	0.054	-	-	0.649						
HCM Control Delay (s)	59.7	11.6	-	-	11.5	-	-	76.3						
HCM Lane LOS	F	B	-	-	B	-	-	F						
HCM 95th %tile Q(veh)	1	0.2	-	-	0.2	-	-	3.4						

3: SH 42 & S Boulder Road
Year 2022 Existing SAT.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	283	433	91	261	489	92	1	87	347	185	4	99
Future Volume (vph)	283	433	91	261	489	92	1	87	347	185	4	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270		220		0		185
Storage Lanes	2		0	2		1		2		0		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95	0.97
Frt		0.974				0.850			0.948			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3447	0	3433	3539	1583	0	3433	3355	0	0	3433
Flt Permitted	0.950			0.950				0.374				0.571
Satd. Flow (perm)	3433	3447	0	3433	3539	1583	0	1352	3355	0	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		21				182			89			
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	308	570	0	284	532	100	0	96	578	0	0	112
Turn Type	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases						6	3				7	
Detector Phase	5	2		1	6	6	3	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	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)	5.0	6.0		5.0	6.0	6.0		5.0	6.0			5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	None	Max		None	None
Act Effect Green (s)	15.0	36.1		13.9	35.0	35.0		10.7	41.0			7.0
Actuated g/C Ratio	0.12	0.30		0.12	0.29	0.29		0.09	0.34			0.06
v/c Ratio	0.72	0.54		0.71	0.52	0.17		0.81	0.48			0.93
Control Delay	60.8	36.3		61.5	37.6	0.6		96.4	27.5			122.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	60.8	36.3		61.5	37.6	0.6		96.4	27.5			122.4
LOS	E	D		E	D	A		F	C			F
Approach Delay		44.9			41.0				37.3			
Approach LOS		D			D				D			
Queue Length 50th (ft)	120	189		109	181	0		38	155			45
Queue Length 95th (ft)	169	248		156	236	0		#86	210			#104
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2022 Existing SAT.syn



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	381	255
Future Volume (vph)	381	255
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		277
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	414	277
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.3	37.3
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.38	0.41
Control Delay	33.6	5.5
Queue Delay	0.0	0.0
Total Delay	33.6	5.5
LOS	C	A
Approach Delay	36.3	
Approach LOS	D	
Queue Length 50th (ft)	132	0
Queue Length 95th (ft)	177	61
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road
Year 2022 Existing SAT.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150			225		270		220				185
Base Capacity (vph)	429	1051		429	1032	590		123	1204			120
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	0.54		0.66	0.52	0.17		0.78	0.48			0.93

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 40.1

Intersection LOS: D

Intersection Capacity Utilization 60.3%

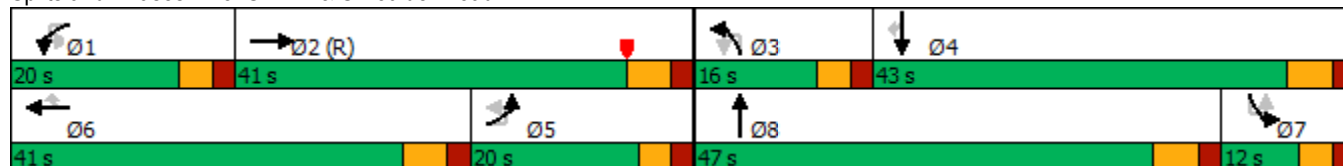
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2022 Existing SAT.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1101	683
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.38	0.41
Intersection Summary		

4: Front Street & Harper Street
Year 2022 Existing SAT.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	0	12	0	0
Future Volume (vph)	12	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2022 Existing SAT.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	5	1	2	778	876	1
Future Volume (vph)	0	5	1	2	778	876	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	5	0	0	3	846	953	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	50.9%			ICU Level of Service A			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2022 Existing SAT.syn

Intersection								
Int Delay, s/veh	0							
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR	
Lane Configurations								
Traffic Vol, veh/h	0	5	1	2	778	876	1	
Future Vol, veh/h	0	5	1	2	778	876	1	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	
RT Channelized	-	None	-	-	None	-	None	
Storage Length	0	-	-	140	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	0	-	
Grade, %	0	-	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	
Mvmt Flow	0	5	1	2	846	952	1	
Major/Minor	Minor2	Major1		Major2				
Conflicting Flow All	1803	477	953	953	0	-	0	
Stage 1	953	-	-	-	-	-	-	
Stage 2	850	-	-	-	-	-	-	
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-	
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-	
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-	
Pot Cap-1 Maneuver	79	535	271	719	-	-	-	
Stage 1	336	-	-	-	-	-	-	
Stage 2	418	-	-	-	-	-	-	
Platoon blocked, %					-	-	-	
Mov Cap-1 Maneuver	78	535	461	461	-	-	-	
Mov Cap-2 Maneuver	78	-	-	-	-	-	-	
Stage 1	334	-	-	-	-	-	-	
Stage 2	418	-	-	-	-	-	-	
Approach	EB	NB		SB				
HCM Control Delay, s	11.8	0		0				
HCM LOS	B							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	461	-	535	-	-			
HCM Lane V/C Ratio	0.007	-	0.01	-	-			
HCM Control Delay (s)	12.9	-	11.8	-	-			
HCM Lane LOS	B	-	B	-	-			
HCM 95th %tile Q(veh)	0	-	0	-	-			

1: Front Street & S Boulder Road
Year 2029 Background AM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	813	1	2	3	1131	6	0	0	2	0	0
Future Volume (vph)	0	813	1	2	3	1131	6	0	0	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	884	1	0	5	1236	0	0	0	2	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.5%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2029 Background AM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2029 Background AM.syn

Intersection													
Int Delay, s/veh	0.1												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	813	1	2	3	1131	6	0	0	2	0	0	9
Future Vol, veh/h	0	813	1	2	3	1131	6	0	0	2	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	884	1	2	3	1229	7	0	0	2	0	0	10
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	884	885	0	0	-	-	442	-	-	618
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	394	760	-	-	0	0	563	0	0	432
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	553	553	-	-	-	-	563	-	-	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.1			11.4			13.5			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	563	-	-	553	-	-	432						
HCM Lane V/C Ratio	0.004	-	-	0.01	-	-	0.023						
HCM Control Delay (s)	11.4	-	-	11.6	-	-	13.5						
HCM Lane LOS	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2029 Background AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	26	769	6	3	1	1102	10	1	0	6	18
Future Volume (vph)	8	26	769	6	3	1	1102	10	1	0	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.882		
Flt Protected		0.950				0.950				0.994		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1633	0	0
Flt Permitted		0.950				0.950				0.994		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1633	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	843	0	0	4	1209	0	0	8	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.2%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2029 Background AM.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	23
Future Volume (vph)	0	23
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.925	
Flt Protected	0.978	
Satd. Flow (prot)	1685	0
Flt Permitted	0.978	
Satd. Flow (perm)	1685	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	45	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2029 Background AM.syn

Intersection														
Int Delay, s/veh	1.6													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	26	769	6	3	1	1102	10	1	0	6	18	0	23
Future Vol, veh/h	8	26	769	6	3	1	1102	10	1	0	6	18	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	28	836	7	3	1	1198	11	1	0	7	20	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1209	1209	0	0	842	843	0	0	1521	2131	422	1704
Stage 1	-	-	-	-	-	-	-	-	914	914	-	1212
Stage 2	-	-	-	-	-	-	-	-	607	1217	-	492
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52
Pot Cap-1 Maneuver	244	573	-	-	419	789	-	-	81	49	580	59
Stage 1	-	-	-	-	-	-	-	-	294	350	-	193
Stage 2	-	-	-	-	-	-	-	-	450	252	-	527
Platoon blocked, %			-	-			-	-				
Mov Cap-1 Maneuver	425	425	-	-	471	471	-	-	71	44	580	54
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	71	44	-	54
Stage 1	-	-	-	-	-	-	-	-	268	320	-	176
Stage 2	-	-	-	-	-	-	-	-	421	250	-	476

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	17.9	61.6
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	287	425	-	-	471	-	-	106
HCM Lane V/C Ratio	0.027	0.087	-	-	0.009	-	-	0.42
HCM Control Delay (s)	17.9	14.3	-	-	12.7	-	-	61.6
HCM Lane LOS	C	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	1.8

3: SH 42 & S Boulder Road
Year 2029 Background AM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	294	416	150	270	690	151	182	461	219	3	149	584
Future Volume (vph)	294	416	150	270	690	151	182	461	219	3	149	584
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270	220		0		185	
Storage Lanes	2		0	2		1	2		0		2	
Taper Length (ft)	80			135			70				155	
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.95	0.97	0.95
Frt		0.960				0.850		0.952				
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	3433	3398	0	3433	3539	1583	3433	3369	0	0	3433	3539
Flt Permitted	0.950			0.950			0.950				0.571	
Satd. Flow (perm)	3433	3398	0	3433	3539	1583	3433	3369	0	0	2063	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		43				182		72				
Link Speed (mph)		35			35			45				45
Link Distance (ft)		465			1815			418				1337
Travel Time (s)		9.1			35.4			6.3				20.3
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	615	0	293	750	164	198	739	0	0	165	635
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		custom	Prot	NA
Protected Phases	5	2		1	6		3	8			7	4
Permitted Phases						6				7		
Detector Phase	5	2		1	6	6	3	8		7	7	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	6.0		5.0	5.0	6.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	40.0		10.0	10.0	36.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	47.0		12.0	12.0	43.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	39.2%		10.0%	10.0%	35.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0			5.0	6.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	Max		None	None	Max
Act Effect Green (s)	15.0	36.0		14.0	35.0	35.0	10.5	41.0			7.0	37.5
Actuated g/C Ratio	0.12	0.30		0.12	0.29	0.29	0.09	0.34			0.06	0.31
v/c Ratio	0.75	0.59		0.73	0.73	0.28	0.66	0.62			1.38	0.57
Control Delay	62.3	36.0		62.3	43.1	4.7	64.0	32.1			254.3	37.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0
Total Delay	62.3	36.0		62.3	43.1	4.7	64.0	32.1			254.3	37.2
LOS	E	D		E	D	A	E	C			F	D
Approach Delay		45.0			42.5			38.9				58.3
Approach LOS		D			D			D				E
Queue Length 50th (ft)	125	200		113	274	0	77	225			~87	217
Queue Length 95th (ft)	#177	262		161	346	40	118	292			#160	280
Internal Link Dist (ft)		385			1735			338				1257

3: SH 42 & S Boulder Road
Year 2029 Background AM.syn

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	385
Future Volume (vph)	385
Ideal Flow (vphpl)	1900
Storage Length (ft)	270
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	308
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	418
Turn Type	Perm
Protected Phases	
Permitted Phases	4
Detector Phase	4
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	36.0
Total Split (s)	43.0
Total Split (%)	35.8%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	37.5
Actuated g/C Ratio	0.31
v/c Ratio	0.59
Control Delay	13.0
Queue Delay	0.0
Total Delay	13.0
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	63
Queue Length 95th (ft)	171
Internal Link Dist (ft)	

3: SH 42 & S Boulder Road Year 2029 Background AM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Turn Bay Length (ft)	150			225		270	220				185	
Base Capacity (vph)	429	1048		429	1032	590	314	1198			120	1105
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	0.75	0.59		0.68	0.73	0.28	0.63	0.62			1.38	0.57

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.38

Intersection Signal Delay: 46.7

Intersection LOS: D

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

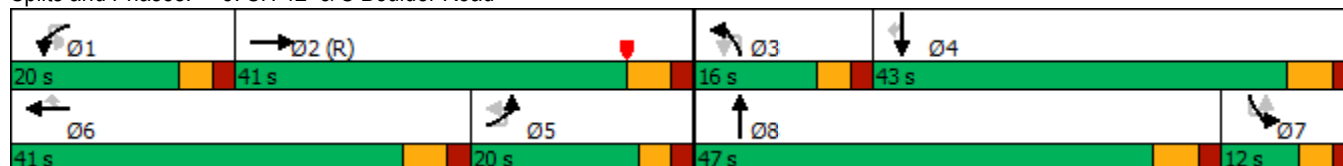
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2029 Background AM.syn



Lane Group	SBR
Turn Bay Length (ft)	270
Base Capacity (vph)	706
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.59
Intersection Summary	

4: Front Street & Harper Street
Year 2029 Background AM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	0	0	10	0	0
Future Volume (vph)	10	0	0	10	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	11	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2029 Background AM.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	3	1	2	724	808	0
Future Volume (vph)	0	3	1	2	724	808	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	3	0	0	3	787	878	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	48.1%			ICU Level of Service A			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2029 Background AM.syn

Intersection								
Int Delay, s/veh	0.1							
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR	
Lane Configurations								
Traffic Vol, veh/h	0	3	1	2	724	808	0	
Future Vol, veh/h	0	3	1	2	724	808	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	
RT Channelized	-	None	-	-	None	-	None	
Storage Length	0	-	-	140	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	0	-	
Grade, %	0	-	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	
Mvmt Flow	0	3	1	2	787	878	0	
Major/Minor	Minor2	Major1		Major2				
Conflicting Flow All	1669	439	878	878	0	-	0	
Stage 1	878	-	-	-	-	-	-	
Stage 2	791	-	-	-	-	-	-	
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-	
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-	
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-	
Pot Cap-1 Maneuver	96	567	304	767	-	-	-	
Stage 1	368	-	-	-	-	-	-	
Stage 2	446	-	-	-	-	-	-	
Platoon blocked, %					-	-	-	
Mov Cap-1 Maneuver	95	567	507	507	-	-	-	
Mov Cap-2 Maneuver	95	-	-	-	-	-	-	
Stage 1	366	-	-	-	-	-	-	
Stage 2	446	-	-	-	-	-	-	
Approach	EB	NB		SB				
HCM Control Delay, s	11.4	0.1		0				
HCM LOS	B							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	507	-	567	-	-			
HCM Lane V/C Ratio	0.006	-	0.006	-	-			
HCM Control Delay (s)	12.1	-	11.4	-	-			
HCM Lane LOS	B	-	B	-	-			
HCM 95th %tile Q(veh)	0	-	0	-	-			

1: Front Street & S Boulder Road
Year 2029 Background PM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1382	7	1	5	1344	5	0	0	12	0	0
Future Volume (vph)	0	1382	7	1	5	1344	5	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1502	8	0	6	1466	0	0	0	13	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 48.2%												
ICU Level of Service A												
Analysis Period (min) 15												

1: Front Street & S Boulder Road
Year 2029 Background PM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	13
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2029 Background PM.syn

Intersection													
Int Delay, s/veh	0.2												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1382	7	1	5	1344	5	0	0	12	0	0	12
Future Vol, veh/h	0	1382	7	1	5	1344	5	0	0	12	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1502	8	1	5	1461	5	0	0	13	0	0	13
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1502	1510	0	0	-	-	751	-	-	733
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	157	439	-	-	0	0	353	0	0	363
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	334	334	-	-	-	-	353	-	-	363
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.1			15.6			15.3			
HCM LOS							C			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	353	-	-	334	-	-	363						
HCM Lane V/C Ratio	0.037	-	-	0.02	-	-	0.036						
HCM Control Delay (s)	15.6	-	-	16	-	-	15.3						
HCM Lane LOS	C	-	-	C	-	-	C						
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2029 Background PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	29	26	1331	11	2	14	1247	11	10	3	7	36
Future Volume (vph)	29	26	1331	11	2	14	1247	11	10	3	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.951		
Flt Protected		0.950				0.950				0.976		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1729	0	0
Flt Permitted		0.950				0.950				0.976		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1729	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	1459	0	0	17	1367	0	0	22	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.5%					ICU Level of Service B						
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2029 Background PM.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	31
Future Volume (vph)	1	31
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.938	
Flt Protected	0.974	
Satd. Flow (prot)	1702	0
Flt Permitted	0.974	
Satd. Flow (perm)	1702	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	74	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2029 Background PM.syn

Intersection														
Int Delay, s/veh	34.3													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	26	1331	11	2	14	1247	11	10	3	7	36	1	31
Future Vol, veh/h	29	26	1331	11	2	14	1247	11	10	3	7	36	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	28	1447	12	2	15	1355	12	11	3	8	39	1	34
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1367	1367	0	0	1459	1459	0	0	2285	2974	730	2240	2974	684
Stage 1	-	-	-	-	-	-	-	-	1573	1573	-	1395	1395	-
Stage 2	-	-	-	-	-	-	-	-	712	1401	-	845	1579	-
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	192	498	-	-	168	459	-	-	21	14	365	~ 23	14	391
Stage 1	-	-	-	-	-	-	-	-	115	169	-	149	207	-
Stage 2	-	-	-	-	-	-	-	-	389	205	-	324	168	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	255	255	-	-	375	375	-	-	14	10	365	~ 14	10	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	14	10	-	~ 14	10	-
Stage 1	-	-	-	-	-	-	-	-	88	129	-	114	198	-
Stage 2	-	-	-	-	-	-	-	-	338	196	-	236	128	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.9			0.2			\$ 540.9			\$ 1210				
HCM LOS							F			F				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	19	255	-	-	375	-	-	25						
HCM Lane V/C Ratio	1.144	0.234	-	-	0.046	-	-	2.957						
HCM Control Delay (s)	\$ 540.9	23.4	-	-	15.1	-	-	\$ 1210						
HCM Lane LOS	F	C	-	-	C	-	-	F						
HCM 95th %tile Q(veh)	3	0.9	-	-	0.1	-	-	9.1						
Notes														
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon						

3: SH 42 & S Boulder Road
Year 2029 Background PM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	514	692	152	292	638	147	4	161	708	279	6	197
Future Volume (vph)	514	692	152	292	638	147	4	161	708	279	6	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270		220		0		185
Storage Lanes	2		0	2		1		2		0		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95	0.97
Frt		0.973				0.850			0.958			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3444	0	3433	3539	1583	0	3433	3391	0	0	3433
Flt Permitted	0.950			0.950				0.364				0.571
Satd. Flow (perm)	3433	3444	0	3433	3539	1583	0	1315	3391	0	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		22				182			53			
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	559	917	0	317	693	160	0	179	1073	0	0	221
Turn Type	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases						6	3				7	
Detector Phase	5	2		1	6	6	3	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	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)	5.0	6.0		5.0	6.0	6.0		5.0	6.0			5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	None	Max		None	None
Act Effect Green (s)	15.0	35.7		14.3	35.0	35.0		11.0	41.0			7.0
Actuated g/C Ratio	0.12	0.30		0.12	0.29	0.29		0.09	0.34			0.06
v/c Ratio	1.30	0.88		0.77	0.67	0.27		1.49	0.90			1.84
Control Delay	194.1	50.6		64.6	41.3	4.3		297.8	46.9			440.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	194.1	50.6		64.6	41.3	4.3		297.8	46.9			440.7
LOS	F	D		E	D	A		F	D			F
Approach Delay		105.0			42.5				82.8			
Approach LOS		F			D				F			
Queue Length 50th (ft)	~286	352		123	248	0		~98	396			~133
Queue Length 95th (ft)	#398	#470		173	316	37		#174	#523			#215
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2029 Background PM.syn



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	603	333
Future Volume (vph)	603	333
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		319
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	655	362
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.0	37.0
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.60	0.51
Control Delay	38.0	8.3
Queue Delay	0.0	0.0
Total Delay	38.0	8.3
LOS	D	A
Approach Delay	101.2	
Approach LOS	F	
Queue Length 50th (ft)	226	24
Queue Length 95th (ft)	289	105
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road Year 2029 Background PM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150			225		270		220				185
Base Capacity (vph)	429	1039		429	1032	590		120	1193			120
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	1.30	0.88		0.74	0.67	0.27		1.49	0.90			1.84

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.84

Intersection Signal Delay: 84.4

Intersection LOS: F

Intersection Capacity Utilization 84.9%

ICU Level of Service E

Analysis Period (min) 15

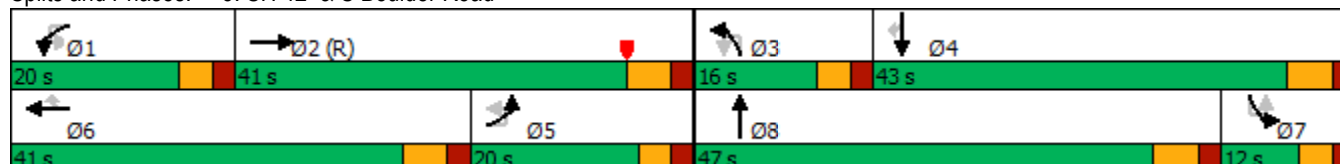
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2029 Background PM.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1091	708
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.60	0.51
Intersection Summary		

4: Front Street & Harper Street
Year 2029 Background PM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	0	12	0	0
Future Volume (vph)	12	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2029 Background PM.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	1	2	0	1129	1168	1
Future Volume (vph)	0	1	2	0	1129	1168	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	1	0	0	2	1227	1271	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization 69.4%				ICU Level of Service C			
Analysis Period (min) 15							

5: SH 42 & Cannon Circle
Year 2029 Background PM.syn

Intersection								
Int Delay, s/veh	0							
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR	
Lane Configurations								
Traffic Vol, veh/h	0	1	2	0	1129	1168	1	
Future Vol, veh/h	0	1	2	0	1129	1168	1	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	
RT Channelized	-	None	-	-	None	-	None	
Storage Length	0	-	-	140	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	0	-	
Grade, %	0	-	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	
Mvmt Flow	0	1	2	0	1227	1270	1	
Major/Minor	Minor2	Major1		Major2				
Conflicting Flow All	2498	636	1271	1271	0	-	0	
Stage 1	1271	-	-	-	-	-	-	
Stage 2	1227	-	-	-	-	-	-	
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-	
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-	
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-	
Pot Cap-1 Maneuver	27	421	165	544	-	-	-	
Stage 1	228	-	-	-	-	-	-	
Stage 2	276	-	-	-	-	-	-	
Platoon blocked, %					-	-	-	
Mov Cap-1 Maneuver	27	421	165	165	-	-	-	
Mov Cap-2 Maneuver	27	-	-	-	-	-	-	
Stage 1	225	-	-	-	-	-	-	
Stage 2	276	-	-	-	-	-	-	
Approach	EB	NB		SB				
HCM Control Delay, s	13.6	0		0				
HCM LOS	B							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	165	-	421	-	-			
HCM Lane V/C Ratio	0.013	-	0.003	-	-			
HCM Control Delay (s)	27.1	-	13.6	-	-			
HCM Lane LOS	D	-	B	-	-			
HCM 95th %tile Q(veh)	0	-	0	-	-			

1: Front Street & S Boulder Road
Year 2029 Background SAT.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1078	10	3	12	1144	3	0	0	25	0	0
Future Volume (vph)	0	1078	10	3	12	1144	3	0	0	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1172	11	0	16	1246	0	0	0	27	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.7%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2029 Background SAT.syn



Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	8
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2029 Background SAT.syn

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↓	↑↓				↑			↑
Traffic Vol, veh/h	0	1078	10	3	12	1144	3	0	0	25	0	0	7
Future Vol, veh/h	0	1078	10	3	12	1144	3	0	0	25	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1172	11	3	13	1243	3	0	0	27	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1172	1183	0	0	-	-	586	-	623
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	3.32
Pot Cap-1 Maneuver	0	-	-	257	586	-	-	0	0	454	0	429
Stage 1	0	-	-	-	-	-	-	0	0	-	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	457	457	-	-	-	-	454	-	429
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	13.4	13.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	454	-	-	457	-	-	429
HCM Lane V/C Ratio	0.06	-	-	0.036	-	-	0.018
HCM Control Delay (s)	13.4	-	-	13.2	-	-	13.5
HCM Lane LOS	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	-	0.1

2: Cannon Circle & S Boulder Road
Year 2029 Background SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	36	1054	10	3	26	1067	7	9	1	12	23
Future Volume (vph)	3	36	1054	10	3	26	1067	7	9	1	12	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.927		
Flt Protected		0.950				0.950				0.980		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1692	0	0
Flt Permitted		0.950				0.950				0.980		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1692	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	1157	0	0	31	1168	0	0	24	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	44.3%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2029 Background SAT.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	50
Future Volume (vph)	1	50
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.909	
Flt Protected	0.985	
Satd. Flow (prot)	1668	0
Flt Permitted	0.985	
Satd. Flow (perm)	1668	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	80	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2029 Background SAT.syn

Intersection														
Int Delay, s/veh	5.5													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	36	1054	10	3	26	1067	7	9	1	12	23	1	50
Future Vol, veh/h	3	36	1054	10	3	26	1067	7	9	1	12	23	1	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	39	1146	11	3	28	1160	8	10	1	13	25	1	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1167	1168	0	0	1157	1157	0	0	1879	2466	579	1884
Stage 1	-	-	-	-	-	-	-	-	1236	1236	-	1226
Stage 2	-	-	-	-	-	-	-	-	643	1230	-	658
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	6.54	5.54	-	6.54
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52
Pot Cap-1 Maneuver	259	594	-	-	263	600	-	-	44	30	458	43
Stage 1	-	-	-	-	-	-	-	-	187	246	-	189
Stage 2	-	-	-	-	-	-	-	-	428	248	-	420
Platoon blocked, %			-	-			-	-				
Mov Cap-1 Maneuver	530	530	-	-	527	527	-	-	34	26	458	36
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	34	26	-	36
Stage 1	-	-	-	-	-	-	-	-	172	227	-	174
Stage 2	-	-	-	-	-	-	-	-	352	233	-	374

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	86	136.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	67	530	-	-	527	-	-	94
HCM Lane V/C Ratio	0.357	0.08	-	-	0.06	-	-	0.856
HCM Control Delay (s)	86	12.4	-	-	12.3	-	-	136.5
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.3	0.3	-	-	0.2	-	-	4.7

3: SH 42 & S Boulder Road
Year 2029 Background SAT.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	308	477	99	282	532	100	1	95	373	200	4	107
Future Volume (vph)	308	477	99	282	532	100	1	95	373	200	4	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	225		270		220		0		185
Storage Lanes	2		0	2		1		2		0		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95	0.97
Frt		0.974				0.850			0.948			
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3447	0	3433	3539	1583	0	3433	3355	0	0	3433
Flt Permitted	0.950			0.950				0.367				0.571
Satd. Flow (perm)	3433	3447	0	3433	3539	1583	0	1326	3355	0	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		21				182			90			
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	335	626	0	307	578	109	0	104	622	0	0	120
Turn Type	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases						6	3				7	
Detector Phase	5	2		1	6	6	3	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	41.0		20.0	41.0	41.0	16.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	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)	5.0	6.0		5.0	6.0	6.0		5.0	6.0			5.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max		None	Max	Max	None	None	Max		None	None
Act Effect Green (s)	15.0	35.8		14.2	35.0	35.0		10.9	41.0			7.0
Actuated g/C Ratio	0.12	0.30		0.12	0.29	0.29		0.09	0.34			0.06
v/c Ratio	0.78	0.60		0.76	0.56	0.18		0.87	0.52			1.00
Control Delay	64.5	37.8		63.8	38.5	0.7		106.0	28.5			139.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	64.5	37.8		63.8	38.5	0.7		106.0	28.5			139.0
LOS	E	D		E	D	A		F	C			F
Approach Delay		47.1			42.2				39.6			
Approach LOS		D			D				D			
Queue Length 50th (ft)	131	213		119	199	0		41	171			48
Queue Length 95th (ft)	#195	276		169	259	1		#95	229			#113
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2029 Background SAT.syn



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	410	278
Future Volume (vph)	410	278
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		302
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	446	302
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.1	37.1
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.41	0.43
Control Delay	34.2	5.5
Queue Delay	0.0	0.0
Total Delay	34.2	5.5
LOS	C	A
Approach Delay	38.7	
Approach LOS	D	
Queue Length 50th (ft)	143	0
Queue Length 95th (ft)	192	64
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road

Year 2029 Background SAT.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150			225		270		220				185
Base Capacity (vph)	429	1043		429	1032	590		121	1205			120
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	0.78	0.60		0.72	0.56	0.18		0.86	0.52			1.00

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 42.1

Intersection LOS: D

Intersection Capacity Utilization 63.6%

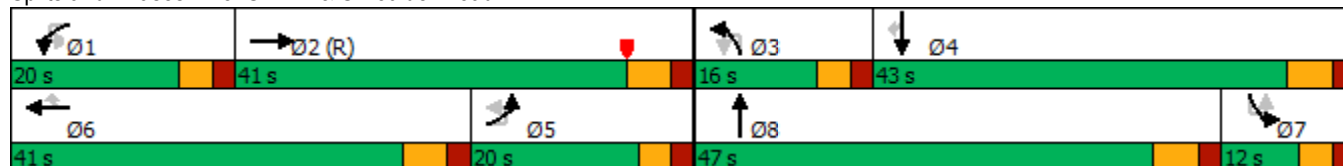
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2029 Background SAT.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1093	697
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.41	0.43
Intersection Summary		

4: Front Street & Harper Street
Year 2029 Background SAT.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	0	12	0	0
Future Volume (vph)	12	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.865					
Fl _t Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Fl _t Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2029 Background SAT.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	5	1	2	836	942	1
Future Volume (vph)	0	5	1	2	836	942	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	5	0	0	3	909	1025	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	54.0%			ICU Level of Service A			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2029 Background SAT.syn

Intersection								
Int Delay, s/veh	0							
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR	
Lane Configurations								
Traffic Vol, veh/h	0	5	1	2	836	942	1	
Future Vol, veh/h	0	5	1	2	836	942	1	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	
RT Channelized	-	None	-	-	None	-	None	
Storage Length	0	-	-	140	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	0	-	
Grade, %	0	-	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	
Mvmt Flow	0	5	1	2	909	1024	1	
Major/Minor	Minor2	Major1		Major2				
Conflicting Flow All	1938	513	1025	1025	0	-	0	
Stage 1	1025	-	-	-	-	-	-	
Stage 2	913	-	-	-	-	-	-	
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-	
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-	
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-	
Pot Cap-1 Maneuver	64	507	242	675	-	-	-	
Stage 1	308	-	-	-	-	-	-	
Stage 2	390	-	-	-	-	-	-	
Platoon blocked, %					-	-	-	
Mov Cap-1 Maneuver	64	507	421	421	-	-	-	
Mov Cap-2 Maneuver	64	-	-	-	-	-	-	
Stage 1	306	-	-	-	-	-	-	
Stage 2	390	-	-	-	-	-	-	
Approach	EB	NB		SB				
HCM Control Delay, s	12.2	0		0				
HCM LOS	B							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	421	-	507	-	-			
HCM Lane V/C Ratio	0.008	-	0.011	-	-			
HCM Control Delay (s)	13.6	-	12.2	-	-			
HCM Lane LOS	B	-	B	-	-			
HCM 95th %tile Q(veh)	0	-	0	-	-			

1: Front Street & S Boulder Road
Year 2050 Background AM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1089	1	2	3	1514	6	0	0	2	0	0
Future Volume (vph)	0	1089	1	2	3	1514	6	0	0	2	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1184	1	0	5	1653	0	0	0	2	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.0%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2050 Background AM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2050 Background AM.syn

Intersection													
Int Delay, s/veh	0.1												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↓	↑↑				↑			↑
Traffic Vol, veh/h	0	1089	1	2	3	1514	6	0	0	2	0	0	9
Future Vol, veh/h	0	1089	1	2	3	1514	6	0	0	2	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1184	1	2	3	1646	7	0	0	2	0	0	10
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1184	1185	0	0	-	-	592	-	-	827
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	253	585	-	-	0	0	449	0	0	315
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	383	383	-	-	-	-	449	-	-	315
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0			13.1			16.8			
HCM LOS							B			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	449	-	-	383	-	-	315						
HCM Lane V/C Ratio	0.005	-	-	0.014	-	-	0.031						
HCM Control Delay (s)	13.1	-	-	14.5	-	-	16.8						
HCM Lane LOS	B	-	-	B	-	-	C						
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2050 Background AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	26	1030	6	3	1	1476	10	1	0	6	18
Future Volume (vph)	8	26	1030	6	3	1	1476	10	1	0	6	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.882		
Flt Protected		0.950				0.950				0.994		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1633	0	0
Flt Permitted		0.950				0.950				0.994		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1633	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	1127	0	0	4	1615	0	0	8	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	53.5%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2050 Background AM.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	0	23
Future Volume (vph)	0	23
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.925	
Flt Protected	0.978	
Satd. Flow (prot)	1685	0
Flt Permitted	0.978	
Satd. Flow (perm)	1685	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	45	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2050 Background AM.syn

Intersection																												
Int Delay, s/veh	5.2																											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR														
Lane Configurations																												
Traffic Vol, veh/h	8	26	1030	6	3	1	1476	10	1	0	6	18	0	23														
Future Vol, veh/h	8	26	1030	6	3	1	1476	10	1	0	6	18	0	23														
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0														
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop														
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None														
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-														
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	92	92														
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2														
Mvmt Flow	9	28	1120	7	3	1	1604	11	1	0	7	20	0	25														
Major/Minor	Major1			Major2			Minor1			Minor2																		
Conflicting Flow All	1615	1615	0	0	1126	1127	0	0	2008	2821	564	2252	2819	808														
Stage 1	-	-	-	-	-	-	-	-	1198	1198	-	1618	1618	-														
Stage 2	-	-	-	-	-	-	-	-	810	1623	-	634	1201	-														
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32														
Pot Cap-1 Maneuver	133	400	-	-	275	616	-	-	35	18	469	23	18	324														
Stage 1	-	-	-	-	-	-	-	-	197	257	-	108	161	-														
Stage 2	-	-	-	-	-	-	-	-	340	160	-	434	256	-														
Platoon blocked, %			-	-			-	-																				
Mov Cap-1 Maneuver	263	263	-	-	315	315	-	-	29	15	469	20	15	324														
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	29	15	-	20	15	-														
Stage 1	-	-	-	-	-	-	-	-	169	221	-	93	159	-														
Stage 2	-	-	-	-	-	-	-	-	310	158	-	368	220	-														
Approach	EB			WB			NB			SB																		
HCM Control Delay, s	0.7			0			30.6			\$ 307.2																		
HCM LOS							D			F																		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1																				
Capacity (veh/h)	148	263	-	-	315	-	-	42																				
HCM Lane V/C Ratio	0.051	0.141	-	-	0.014	-	-	1.061																				
HCM Control Delay (s)	30.6	20.9	-	-	16.6	-	-	\$ 307.2																				
HCM Lane LOS	D	C	-	-	C	-	-	F																				
HCM 95th %tile Q(veh)	0.2	0.5	-	-	0	-	-	4.3																				
Notes																												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon																						

3: SH 42 & S Boulder Road
Year 2050 Background AM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	379	556	194	342	890	192	3	235	573	277	3	189
Future Volume (vph)	379	556	194	342	890	192	3	235	573	277	3	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	225		270		220		200		185
Storage Lanes	2		1	2		1		2		1		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0	3433
Flt Permitted	0.950			0.950				0.364				0.571
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	0	1315	3539	1583	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			197			182				301		
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	412	604	211	372	967	209	0	258	623	301	0	208
Turn Type	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases			2			6	3			8	7	
Detector Phase	5	2	2	1	6	6	3	3	8	8	7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0	5.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0	10.0
Total Split (s)	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0	12.0
Total Split (%)	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%	10.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None	None
Act Effect Green (s)	15.0	35.1	35.1	14.9	35.0	35.0		11.0	41.0	41.0		7.0
Actuated g/C Ratio	0.12	0.29	0.29	0.12	0.29	0.29		0.09	0.34	0.34		0.06
v/c Ratio	0.96	0.58	0.35	0.88	0.94	0.35		2.15	0.52	0.41		1.73
Control Delay	87.0	39.0	7.3	73.3	58.2	8.6		570.9	33.4	4.9		395.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	87.0	39.0	7.3	73.3	58.2	8.6		570.9	33.4	4.9		395.7
LOS	F	D	A	E	E	A		F	C	A		F
Approach Delay		49.7			55.1				143.5			
Approach LOS		D			E				F			
Queue Length 50th (ft)	165	210	8	147	384	15		~164	201	0		~122
Queue Length 95th (ft)	#267	271	66	#229	#514	74		#251	260	60		#202
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2050 Background AM.syn



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	725	497
Future Volume (vph)	725	497
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		289
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	788	540
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.0	37.0
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.72	0.79
Control Delay	41.5	26.4
Queue Delay	0.0	0.0
Total Delay	41.5	26.4
LOS	D	C
Approach Delay	84.1	
Approach LOS	F	
Queue Length 50th (ft)	285	185
Queue Length 95th (ft)	358	338
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road Year 2050 Background AM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150		150	225		270		220		200		185
Base Capacity (vph)	429	1035	602	429	1032	590		120	1209	739		120
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	0.96	0.58	0.35	0.87	0.94	0.35		2.15	0.52	0.41		1.73

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.15

Intersection Signal Delay: 81.0

Intersection LOS: F

Intersection Capacity Utilization 91.3%

ICU Level of Service F

Analysis Period (min) 15

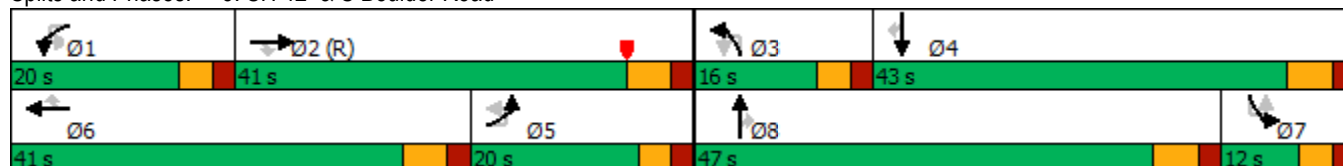
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2050 Background AM.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1091	687
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.72	0.79
Intersection Summary		

4: Front Street & Harper Street
Year 2050 Background AM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	0	0	10	0	0
Future Volume (vph)	10	0	0	10	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	0	11	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2050 Background AM.syn

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					 	
Traffic Volume (vph)	0	3	0	902	1006	2
Future Volume (vph)	0	3	0	902	1006	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	3	0	980	1095	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.8%			ICU Level of Service A		
Analysis Period (min)	15					

5: SH 42 & Cannon Circle
Year 2050 Background AM.syn

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↑↑	
Traffic Vol, veh/h	0	3	0	902	1006	2
Future Vol, veh/h	0	3	0	902	1006	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	0	980	1093	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	548	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	481	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	481	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.5	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 481		-	-		
HCM Lane V/C Ratio	- 0.007		-	-		
HCM Control Delay (s)	- 12.5		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0		-	-		

1: Front Street & S Boulder Road
Year 2050 Background PM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1851	7	1	5	1799	5	0	0	12	0	0
Future Volume (vph)	0	1851	7	1	5	1799	5	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2012	8	0	6	1960	0	0	0	13	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.2%						ICU Level of Service B					
Analysis Period (min)	15											

1: Front Street & S Boulder Road
Year 2050 Background PM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	13
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2050 Background PM.syn

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↓	↑↓				↑			↑
Traffic Vol, veh/h	0	1851	7	1	5	1799	5	0	0	12	0	0	12
Future Vol, veh/h	0	1851	7	1	5	1799	5	0	0	12	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2012	8	1	5	1955	5	0	0	13	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	2012	2020	0	0	-	-	1006	-	-	980
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	73	278	-	-	0	0	239	0	0	249
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	185	185	-	-	-	-	239	-	-	249
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	20.9	20.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	239	-	-	185	-	-	249
HCM Lane V/C Ratio	0.055	-	-	0.035	-	-	0.052
HCM Control Delay (s)	20.9	-	-	25.2	-	-	20.3
HCM Lane LOS	C	-	-	D	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	-	0.2

2: Cannon Circle & S Boulder Road
Year 2050 Background PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	29	26	1783	11	2	14	1669	11	10	3	7	36
Future Volume (vph)	29	26	1783	11	2	14	1669	11	10	3	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.951		
Flt Protected		0.950				0.950				0.976		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1729	0	0
Flt Permitted		0.950				0.950				0.976		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1729	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	1950	0	0	17	1826	0	0	22	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.3%						ICU Level of Service B					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2050 Background PM.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	31
Future Volume (vph)	1	31
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.938	
Flt Protected	0.974	
Satd. Flow (prot)	1702	0
Flt Permitted	0.974	
Satd. Flow (perm)	1702	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	74	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2050 Background PM.syn

Intersection															
Int Delay, s/veh	28.6														
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations															
Traffic Vol, veh/h	29	26	1783	11	2	14	1669	11	10	3	7	36	1	31	
Future Vol, veh/h	29	26	1783	11	2	14	1669	11	10	3	7	36	1	31	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None	
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-	
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	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	32	28	1938	12	2	15	1814	12	11	3	8	39	1	34	
Major/Minor	Major1				Major2				Minor1				Minor2		
Conflicting Flow All	1826	1826	0	0	1950	1950	0	0	3006	3924	975	2945	3924	913	
Stage 1	-	-	-	-	-	-	-	-	2064	2064	-	1854	1854	-	
Stage 2	-	-	-	-	-	-	-	-	942	1860	-	1091	2070	-	
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32	
Pot Cap-1 Maneuver	97	331	-	-	80	296	-	-	~ 6	~ 3	251	~ 7	3	276	
Stage 1	-	-	-	-	-	-	-	-	56	96	-	76	122	-	
Stage 2	-	-	-	-	-	-	-	-	283	121	-	229	95	-	
Platoon blocked, %			-	-			-	-							
Mov Cap-1 Maneuver	132	132	-	-	219	219	-	-	~ 2	~ 2	251	-	2	276	
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	~ 2	~ 2	-	-	2	-	
Stage 1	-	-	-	-	-	-	-	-	31	52	-	41	113	-	
Stage 2	-	-	-	-	-	-	-	-	227	112	-	114	52	-	
Approach	EB				WB				NB				SB		
HCM Control Delay, s	1.6				0.2				\$ 5037						
HCM LOS									F				-		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1							
Capacity (veh/h)	3	132	-	-	219	-	-	-							
HCM Lane V/C Ratio	7.246	0.453	-	-	0.079	-	-	-							
HCM Control Delay (s)	\$ 5037	52.9	-	-	22.8	-	-	-							
HCM Lane LOS	F	F	-	-	C	-	-	-							
HCM 95th %tile Q(veh)	4.3	2	-	-	0.3	-	-	-							
Notes															
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon					

3: SH 42 & S Boulder Road
Year 2050 Background PM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	663	927	197	370	823	186	6	208	880	353	6	249
Future Volume (vph)	663	927	197	370	823	186	6	208	880	353	6	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	225		270		220		200		185
Storage Lanes	2		1	2		1		2		1		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0	3433
Flt Permitted	0.950			0.950				0.364				0.571
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	0	1315	3539	1583	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			173			182				312		
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	721	1008	214	402	895	202	0	233	957	384	0	278
Turn Type	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases			2			6	3			8	7	
Detector Phase	5	2	2	1	6	6	3	3	8	8	7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0	5.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0	10.0
Total Split (s)	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0	12.0
Total Split (%)	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%	10.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None	None
Act Effect Green (s)	15.0	35.0	35.0	15.0	35.0	35.0		11.0	41.0	41.0		7.0
Actuated g/C Ratio	0.12	0.29	0.29	0.12	0.29	0.29		0.09	0.34	0.34		0.06
v/c Ratio	1.68	0.98	0.37	0.94	0.87	0.34		1.94	0.79	0.51		2.32
Control Delay	349.4	65.3	9.9	82.5	50.5	8.0		482.1	41.4	9.1		643.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	349.4	65.3	9.9	82.5	50.5	8.0		482.1	41.4	9.1		643.1
LOS	F	E	A	F	D	A		F	D	A		F
Approach Delay		164.6			53.4				98.8			
Approach LOS		F			D				F			
Queue Length 50th (ft)	~420	406	23	161	345	11		~143	350	38		~180
Queue Length 95th (ft)	#542	#550	85	#257	#440	68		#227	432	125		#270
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2050 Background PM.syn



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	750	430
Future Volume (vph)	750	430
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		294
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	815	467
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.0	37.0
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.75	0.68
Control Delay	42.4	18.3
Queue Delay	0.0	0.0
Total Delay	42.4	18.3
LOS	D	B
Approach Delay	142.2	
Approach LOS	F	
Queue Length 50th (ft)	297	114
Queue Length 95th (ft)	373	239
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road Year 2050 Background PM.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150		150	225		270		220		200		185
Base Capacity (vph)	429	1032	584	429	1032	590		120	1209	746		120
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	1.68	0.98	0.37	0.94	0.87	0.34		1.94	0.79	0.51		2.32

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.32

Intersection Signal Delay: 118.2

Intersection LOS: F

Intersection Capacity Utilization 92.7%

ICU Level of Service F

Analysis Period (min) 15

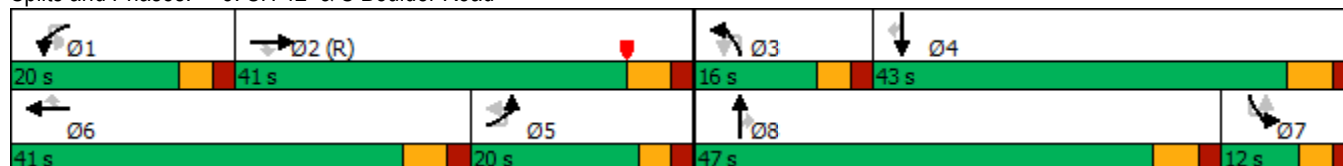
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2050 Background PM.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1091	691
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.75	0.68
Intersection Summary		

4: Front Street & Harper Street
Year 2050 Background PM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	0	12	0	0
Future Volume (vph)	12	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2050 Background PM.syn

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1	0	1406	1454	1
Future Volume (vph)	0	1	0	1406	1454	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	0	1528	1581	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.3%			ICU Level of Service D		
Analysis Period (min)	15					

5: SH 42 & Cannon Circle
Year 2050 Background PM.syn

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	1406	1454	1
Future Vol, veh/h	0	1	0	1406	1454	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	0	1528	1580	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	791	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	333	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	333	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.8	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 333		-	-		
HCM Lane V/C Ratio	- 0.003		-	-		
HCM Control Delay (s)	- 15.8		-	-		
HCM Lane LOS	- C		-	-		
HCM 95th %tile Q(veh)	- 0		-	-		

1: Front Street & S Boulder Road
Year 2050 Background SAT.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1443	10	3	12	1532	3	0	0	25	0	0
Future Volume (vph)	0	1443	10	3	12	1532	3	0	0	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1568	11	0	16	1668	0	0	0	27	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.4%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2050 Background SAT.syn



Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	8
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2050 Background SAT.syn

Intersection													
Int Delay, s/veh	0.3												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1443	10	3	12	1532	3	0	0	25	0	0	7
Future Vol, veh/h	0	1443	10	3	12	1532	3	0	0	25	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1568	11	3	13	1665	3	0	0	27	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1568	1579	0	0	-	-	784	-	-	834
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	142	413	-	-	0	0	336	0	0	311
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	289	289	-	-	-	-	336	-	-	311
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.2			16.7			16.9			
HCM LOS							C			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	336	-	-	289	-	-	311						
HCM Lane V/C Ratio	0.081	-	-	0.056	-	-	0.024						
HCM Control Delay (s)	16.7	-	-	18.2	-	-	16.9						
HCM Lane LOS	C	-	-	C	-	-	C						
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2050 Background SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	36	1411	10	3	26	1429	7	9	1	12	23
Future Volume (vph)	3	36	1411	10	3	26	1429	7	9	1	12	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		0	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999			0.927		
Flt Protected		0.950				0.950				0.980		
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	1692	0	0
Flt Permitted		0.950				0.950				0.980		
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	1692	0	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	1545	0	0	31	1561	0	0	24	0	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	51.6%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2050 Background SAT.syn



Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1	50
Future Volume (vph)	1	50
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		0
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt	0.909	
Flt Protected	0.985	
Satd. Flow (prot)	1668	0
Flt Permitted	0.985	
Satd. Flow (perm)	1668	0
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	80	0
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2050 Background SAT.syn

Intersection															
Int Delay, s/veh	28.6														
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations															
Traffic Vol, veh/h	3	36	1411	10	3	26	1429	7	9	1	12	23	1	50	
Future Vol, veh/h	3	36	1411	10	3	26	1429	7	9	1	12	23	1	50	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None	
Storage Length	-	90	-	-	-	80	-	-	-	-	-	-	-	-	
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	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	3	39	1534	11	3	28	1553	8	10	1	13	25	1	54	
Major/Minor	Major1			Major2				Minor1			Minor2				
Conflicting Flow All	1561	1561	0	0	1545	1545	0	0	2463	3247	773	2471	3248	781	
Stage 1	-	-	-	-	-	-	-	-	1624	1624	-	1619	1619	-	
Stage 2	-	-	-	-	-	-	-	-	839	1623	-	852	1629	-	
Critical Hdwy	6.44	4.14	-	-	6.44	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	2.52	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32	
Pot Cap-1 Maneuver	144	419	-	-	147	426	-	-	16	9	342	~ 15	9	338	
Stage 1	-	-	-	-	-	-	-	-	107	159	-	108	160	-	
Stage 2	-	-	-	-	-	-	-	-	326	160	-	321	159	-	
Platoon blocked, %			-	-			-	-							
Mov Cap-1 Maneuver	354	354	-	-	353	353	-	-	10	7	342	~ 11	7	338	
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	10	7	-	~ 11	7	-	
Stage 1	-	-	-	-	-	-	-	-	94	140	-	95	145	-	
Stage 2	-	-	-	-	-	-	-	-	247	145	-	270	140	-	
Approach	EB			WB				NB			SB				
HCM Control Delay, s	0.4			0.3				\$ 543.3			\$ 994.1				
HCM LOS								F			F				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1							
Capacity (veh/h)	20	354	-	-	353	-	-	31							
HCM Lane V/C Ratio	1.196	0.12	-	-	0.089	-	-	2.595							
HCM Control Delay (s)	\$ 543.3	16.6	-	-	16.2	-	-	\$ 994.1							
HCM Lane LOS	F	C	-	-	C	-	-	F							
HCM 95th %tile Q(veh)	3.2	0.4	-	-	0.3	-	-	9.4							
Notes															
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon					

3: SH 42 & S Boulder Road
Year 2050 Background SAT.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	397	639	128	358	687	126	4	122	464	253	4	136
Future Volume (vph)	397	639	128	358	687	126	4	122	464	253	4	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	225		270		220		200		185
Storage Lanes	2		1	2		1		2		1		2
Taper Length (ft)	80			135				70				155
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95	0.97
Frt			0.850			0.850				0.850		
Flt Protected	0.950			0.950				0.950				0.950
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0	3433
Flt Permitted	0.950			0.950				0.364				0.571
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	0	1315	3539	1583	0	2063
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)			173			182				275		
Link Speed (mph)		35			35				45			
Link Distance (ft)		465			1815				418			
Travel Time (s)		9.1			35.4				6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	432	695	139	389	747	137	0	137	504	275	0	152
Turn Type	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom	Prot
Protected Phases	5	2		1	6			3	8			7
Permitted Phases			2			6	3			8	7	
Detector Phase	5	2	2	1	6	6	3	3	8	8	7	7
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0	5.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0	10.0
Total Split (s)	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0	12.0
Total Split (%)	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%	10.0%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0		5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None	None
Act Effect Green (s)	15.0	35.0	35.0	15.0	35.0	35.0		11.0	41.0	41.0		7.0
Actuated g/C Ratio	0.12	0.29	0.29	0.12	0.29	0.29		0.09	0.34	0.34		0.06
v/c Ratio	1.01	0.67	0.24	0.91	0.72	0.23		1.14	0.42	0.38		1.27
Control Delay	97.6	41.3	3.2	77.5	43.0	2.6		173.8	31.6	4.9		215.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
Total Delay	97.6	41.3	3.2	77.5	43.0	2.6		173.8	31.6	4.9		215.5
LOS	F	D	A	E	D	A		F	C	A		F
Approach Delay		56.3			49.2				44.9			
Approach LOS		E			D				D			
Queue Length 50th (ft)	~176	249	0	155	273	0		~63	156	0		~76
Queue Length 95th (ft)	#284	318	27	#245	345	20		#130	206	58		#146
Internal Link Dist (ft)		385			1735				338			

3: SH 42 & S Boulder Road
Year 2050 Background SAT.syn



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	509	358
Future Volume (vph)	509	358
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		329
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	553	389
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.0	37.0
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.51	0.54
Control Delay	36.0	9.3
Queue Delay	0.0	0.0
Total Delay	36.0	9.3
LOS	D	A
Approach Delay	51.4	
Approach LOS	D	
Queue Length 50th (ft)	184	33
Queue Length 95th (ft)	241	123
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road

Year 2050 Background SAT.syn

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)	150		150	225		270		220		200		185
Base Capacity (vph)	429	1032	584	429	1032	590		120	1209	721		120
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	1.01	0.67	0.24	0.91	0.72	0.23		1.14	0.42	0.38		1.27

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 50.8

Intersection LOS: D

Intersection Capacity Utilization 75.0%

ICU Level of Service D

Analysis Period (min) 15

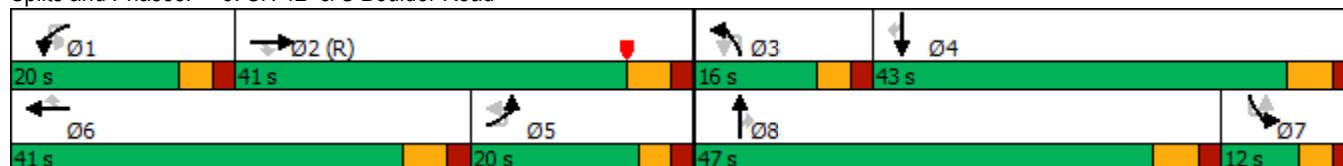
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2050 Background SAT.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1091	715
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.51	0.54
Intersection Summary		

4: Front Street & Harper Street
Year 2050 Background SAT.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	0	12	0	0
Future Volume (vph)	12	0	0	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	0	1611	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	0	1611	0	0
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	13	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

5: SH 42 & Cannon Circle
Year 2050 Background SAT.syn

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	0	1044	1173	3
Future Volume (vph)	0	5	0	1044	1173	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	5	0	1135	1278	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	58.3%			ICU Level of Service B		
Analysis Period (min)	15					

5: SH 42 & Cannon Circle
Year 2050 Background SAT.syn

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↑↑	
Traffic Vol, veh/h	0	5	0	1044	1173	3
Future Vol, veh/h	0	5	0	1044	1173	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	0	1135	1275	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	639	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	420	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	420	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.7	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 420		-	-		
HCM Lane V/C Ratio	- 0.013		-	-		
HCM Control Delay (s)	- 13.7		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0		-	-		

1: Front Street & S Boulder Road
Year 2029 Total AM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	806	19	20	4	1154	6	0	0	34	0	0
Future Volume (vph)	0	806	19	20	4	1154	6	0	0	34	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	876	21	0	26	1261	0	0	0	37	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	42.1%											
Analysis Period (min)	15											
	ICU Level of Service A											

1: Front Street & S Boulder Road
Year 2029 Total AM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2029 Total AM.syn

Intersection													
Int Delay, s/veh	0.4												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	806	19	20	4	1154	6	0	0	34	0	0	9
Future Vol, veh/h	0	806	19	20	4	1154	6	0	0	34	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	876	21	22	4	1254	7	0	0	37	0	0	10
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	876	897	0	0	-	-	438	-	-	631
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	399	753	-	-	0	0	567	0	0	424
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	409	409	-	-	-	-	567	-	-	424
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.3			11.8			13.7			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	567	-	-	409	-	-	424						
HCM Lane V/C Ratio	0.065	-	-	0.064	-	-	0.023						
HCM Control Delay (s)	11.8	-	-	14.4	-	-	13.7						
HCM Lane LOS	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2029 Total AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	26	809	10	3	32	1126	10	0	0	77	0
Future Volume (vph)	8	26	809	10	3	32	1126	10	0	0	77	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.998				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	890	0	0	38	1235	0	0	0	84	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.4%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2029 Total AM.syn



Lane Group	SBT	SBR
Lane Configurations		↗
Traffic Volume (vph)	0	41
Future Volume (vph)	0	41
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	45
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2029 Total AM.syn

Intersection														
Int Delay, s/veh	1.1													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	26	809	10	3	32	1126	10	0	0	77	0	0	41
Future Vol, veh/h	8	26	809	10	3	32	1126	10	0	0	77	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	28	879	11	3	35	1224	11	0	0	84	0	0	45
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1235	1235	0	0	890	890	0	0	-	-	445	-	-	618
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	234	560	-	-	391	757	-	-	0	0	561	0	0	432
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	404	404	-	-	684	684	-	-	-	-	561	-	-	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.6			0.3			12.5			14.3				
HCM LOS							B			B				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	561	404	-	-	684	-	-	432						
HCM Lane V/C Ratio	0.149	0.091	-	-	0.056	-	-	0.103						
HCM Control Delay (s)	12.5	14.8	-	-	10.6	-	-	14.3						
HCM Lane LOS	B	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0.5	0.3	-	-	0.2	-	-	0.3						

3: SH 42 & S Boulder Road
Year 2029 Total AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	28	330	446	150	270	703	151	182	461	219	3	149
Future Volume (vph)	28	330	446	150	270	703	151	182	461	219	3	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270	220		0		185
Storage Lanes		2		0	2		1	2		0		2
Taper Length (ft)		80			135			70				155
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.97	0.95	0.95	0.95	0.97
Frt			0.962				0.850		0.952			
Flt Protected		0.950			0.950			0.950				0.950
Satd. Flow (prot)	0	3433	3405	0	3433	3539	1583	3433	3369	0	0	3433
Flt Permitted		0.362			0.950			0.950				0.571
Satd. Flow (perm)	0	1308	3405	0	3433	3539	1583	3433	3369	0	0	2063
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)			39				182		72			
Link Speed (mph)			35			35			45			
Link Distance (ft)			465			1815			418			
Travel Time (s)			9.1			35.4			6.3			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	389	648	0	293	764	164	198	739	0	0	165
Turn Type	custom	Prot	NA		Prot	NA	Perm	Prot	NA		custom	Prot
Protected Phases		5	2		1	6		3	8			7
Permitted Phases	5						6				7	
Detector Phase	5	5	2		1	6	6	3	8		7	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	6.0		5.0	5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	40.0		10.0	10.0
Total Split (s)	20.0	20.0	41.0		20.0	41.0	41.0	16.0	47.0		12.0	12.0
Total Split (%)	16.7%	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	39.2%		10.0%	10.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	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)		5.0	6.0		5.0	6.0	6.0	5.0	6.0			5.0
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead		Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	Max		None	None
Act Effect Green (s)		15.0	36.0		14.0	35.0	35.0	10.5	41.0			7.0
Actuated g/C Ratio		0.12	0.30		0.12	0.29	0.29	0.09	0.34			0.06
v/c Ratio		2.39	0.62		0.73	0.74	0.28	0.66	0.62			1.38
Control Delay		666.2	36.9		62.3	43.6	4.7	64.0	32.1			254.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0
Total Delay		666.2	36.9		62.3	43.6	4.7	64.0	32.1			254.3
LOS		F	D		E	D	A	E	C			F
Approach Delay			272.9			42.8			38.9			
Approach LOS			F			D			D			
Queue Length 50th (ft)		~258	213		113	281	0	77	225			~87
Queue Length 95th (ft)		#360	278		161	354	40	118	292			#160
Internal Link Dist (ft)			385			1735			338			

3: SH 42 & S Boulder Road

Year 2029 Total AM.syn

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	584	401
Future Volume (vph)	584	401
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		270
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3539	1583
Flt Permitted		
Satd. Flow (perm)	3539	1583
Right Turn on Red		Yes
Satd. Flow (RTOR)		234
Link Speed (mph)	45	
Link Distance (ft)	1337	
Travel Time (s)	20.3	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	635	436
Turn Type	NA	Perm
Protected Phases	4	
Permitted Phases		4
Detector Phase	4	4
Switch Phase		
Minimum Initial (s)	6.0	6.0
Minimum Split (s)	36.0	36.0
Total Split (s)	43.0	43.0
Total Split (%)	35.8%	35.8%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lag	Lag
Lead-Lag Optimize?		
Recall Mode	Max	Max
Act Effct Green (s)	37.5	37.5
Actuated g/C Ratio	0.31	0.31
v/c Ratio	0.57	0.67
Control Delay	37.2	21.7
Queue Delay	0.0	0.0
Total Delay	37.2	21.7
LOS	D	C
Approach Delay	60.7	
Approach LOS	E	
Queue Length 50th (ft)	217	136
Queue Length 95th (ft)	280	257
Internal Link Dist (ft)	1257	

3: SH 42 & S Boulder Road

Year 2029 Total AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Turn Bay Length (ft)		150			225		270	220				185
Base Capacity (vph)		163	1047		429	1032	590	314	1198			120
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		2.39	0.62		0.68	0.74	0.28	0.63	0.62			1.38

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.39

Intersection Signal Delay: 100.8

Intersection LOS: F

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

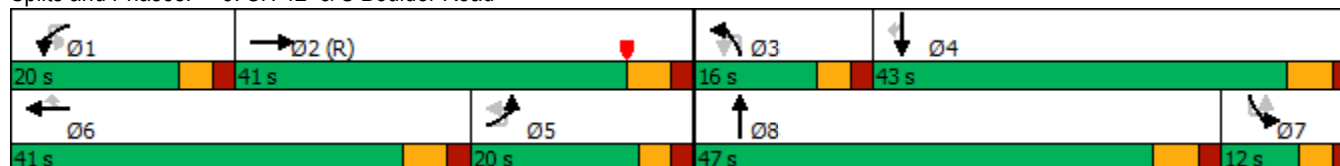
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2029 Total AM.syn



Lane Group	SBT	SBR
Turn Bay Length (ft)		270
Base Capacity (vph)	1105	655
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.57	0.67
Intersection Summary		

4: Front Street & Harper Street
Year 2029 Total AM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	0	3	10	0	6
Future Volume (vph)	10	0	3	10	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1665	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1665	0	0	1863
Link Speed (mph)	20	20		20		
Link Distance (ft)	820	375		848		
Travel Time (s)	28.0	12.8		28.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	14	0	0	7
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

4: Front Street & Harper Street
Year 2029 Total AM.syn

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	3	10	0	6
Future Vol, veh/h	10	0	3	10	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	3	11	0	7
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	16	9	0	0	14	0
Stage 1	9	-	-	-	-	-
Stage 2	7	-	-	-	-	-
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	1002	1073	-	-	1604	-
Stage 1	1014	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1002	1073	-	-	1604	-
Mov Cap-2 Maneuver	1002	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1002		1604	-	
HCM Lane V/C Ratio	-	- 0.011		-	-	
HCM Control Delay (s)	-	- 8.6		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	

5: SH 42 & Cannon Circle
Year 2029 Total AM.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	27	1	13	724	808	0
Future Volume (vph)	0	27	1	13	724	808	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	29	0	0	15	787	878	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	48.1%			ICU Level of Service A			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2029 Total AM.syn

Intersection							
Int Delay, s/veh	0.3						
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	0	27	1	13	724	808	0
Future Vol, veh/h	0	27	1	13	724	808	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	29	1	14	787	878	0
Major/Minor	Minor2	Major1		Major2			
Conflicting Flow All	1693	439	878	878	0	-	0
Stage 1	878	-	-	-	-	-	-
Stage 2	815	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	93	567	304	767	-	-	-
Stage 1	368	-	-	-	-	-	-
Stage 2	434	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	91	567	686	686	-	-	-
Mov Cap-2 Maneuver	91	-	-	-	-	-	-
Stage 1	360	-	-	-	-	-	-
Stage 2	434	-	-	-	-	-	-
Approach	EB	NB		SB			
HCM Control Delay, s	11.7	0.2		0			
HCM LOS	B						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	686	-	567	-	-		
HCM Lane V/C Ratio	0.022	-	0.052	-	-		
HCM Control Delay (s)	10.4	-	11.7	-	-		
HCM Lane LOS	B	-	B	-	-		
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-		

1: Front Street & S Boulder Road
Year 2029 Total PM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1368	50	38	8	1360	5	0	0	34	0	0
Future Volume (vph)	0	1368	50	38	8	1360	5	0	0	34	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1487	54	0	50	1483	0	0	0	37	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	48.2%					ICU Level of Service A						
Analysis Period (min)	15											

1: Front Street & S Boulder Road
Year 2029 Total PM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2029 Total PM.syn

Intersection													
Int Delay, s/veh	0.8												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1368	50	38	8	1360	5	0	0	34	0	0	9
Future Vol, veh/h	0	1368	50	38	8	1360	5	0	0	34	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1487	54	41	9	1478	5	0	0	37	0	0	10
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1487	1541	0	0	-	-	744	-	-	742
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	161	427	-	-	0	0	357	0	0	358
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	165	165	-	-	-	-	357	-	-	358
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			1.2			16.2			15.3			
HCM LOS							C			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	357	-	-	165	-	-	358						
HCM Lane V/C Ratio	0.104	-	-	0.303	-	-	0.027						
HCM Control Delay (s)	16.2	-	-	36.1	-	-	15.3						
HCM Lane LOS	C	-	-	E	-	-	C						
HCM 95th %tile Q(veh)	0.3	-	-	1.2	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2029 Total PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	29	26	1381	19	2	99	1274	14	0	0	77	0
Future Volume (vph)	29	26	1381	19	2	99	1274	14	0	0	77	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.998				0.998				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3532	0	0	1770	3532	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3532	0	0	1770	3532	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	1522	0	0	110	1400	0	0	0	84	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	59.1%						ICU Level of Service B					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2029 Total PM.syn



Lane Group	SBT	SBR
Lane Configurations		↗
Traffic Volume (vph)	0	41
Future Volume (vph)	0	41
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	45
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2029 Total PM.syn

Intersection														
Int Delay, s/veh	1.8													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	26	1381	19	2	99	1274	14	0	0	77	0	0	41
Future Vol, veh/h	29	26	1381	19	2	99	1274	14	0	0	77	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	28	1501	21	2	108	1385	15	0	0	84	0	0	45
Major/Minor	Major1			Major2				Minor1			Minor2			
Conflicting Flow All	1400	1400	0	0	1522	1522	0	0	-	-	761	-	-	700
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	183	484	-	-	153	434	-	-	0	0	348	0	0	382
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	237	237	-	-	412	412	-	-	-	-	348	-	-	382
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB				NB			SB			
HCM Control Delay, s	1			1.2				18.6			15.7			
HCM LOS								C			C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	348	237	-	-	412	-	-	382						
HCM Lane V/C Ratio	0.241	0.252	-	-	0.266	-	-	0.117						
HCM Control Delay (s)	18.6	25.2	-	-	16.9	-	-	15.7						
HCM Lane LOS	C	D	-	-	C	-	-	C						
HCM 95th %tile Q(veh)	0.9	1	-	-	1.1	-	-	0.4						

3: SH 42 & S Boulder Road

Year 2029 Total PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	38	543	716	152	292	675	147	4	161	708	279	6
Future Volume (vph)	38	543	716	152	292	675	147	4	161	708	279	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		220		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Frt			0.974				0.850			0.958		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3447	0	3433	3539	1583	0	3433	3391	0	0
Flt Permitted		0.373			0.950				0.364			
Satd. Flow (perm)	0	1348	3447	0	3433	3539	1583	0	1315	3391	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			21				182			53		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	631	943	0	317	734	160	0	179	1073	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	20.0	20.0	41.0		20.0	41.0	41.0	16.0	16.0	47.0		12.0
Total Split (%)	16.7%	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	13.3%	39.2%		10.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effect Green (s)		15.0	35.7		14.3	35.0	35.0		11.0	41.0		
Actuated g/C Ratio		0.12	0.30		0.12	0.29	0.29		0.09	0.34		
v/c Ratio		3.76	0.91		0.77	0.71	0.27		1.49	0.90		
Control Delay		1270.0	52.9		64.6	42.5	4.3		297.8	46.9		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		1270.0	52.9		64.6	42.5	4.3		297.8	46.9		
LOS		F	D		E	D	A		F	D		
Approach Delay			540.8			43.3				82.8		
Approach LOS			F			D				F		
Queue Length 50th (ft)		~460	363		123	267	0		~98	396		
Queue Length 95th (ft)		#578	#492		173	338	37		#174	#523		
Internal Link Dist (ft)			385			1735				338		

3: SH 42 & S Boulder Road
Year 2029 Total PM.syn

			
Lane Group	SBL	SBT	SBR
Lane Configurations	 	 	
Traffic Volume (vph)	197	603	377
Future Volume (vph)	197	603	377
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1583
Right Turn on Red			Yes
Satd. Flow (RTOR)			220
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	221	655	410
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effect Green (s)	7.0	37.0	37.0
Actuated g/C Ratio	0.06	0.31	0.31
v/c Ratio	1.84	0.60	0.64
Control Delay	440.7	38.0	21.1
Queue Delay	0.0	0.0	0.0
Total Delay	440.7	38.0	21.1
LOS	F	D	C
Approach Delay		101.8	
Approach LOS		F	
Queue Length 50th (ft)	~133	226	125
Queue Length 95th (ft)	#215	289	239
Internal Link Dist (ft)		1257	

3: SH 42 & S Boulder Road

Year 2029 Total PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Turn Bay Length (ft)		150			225		270		220			
Base Capacity (vph)		168	1039		429	1032	590		120	1193		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		3.76	0.91		0.74	0.71	0.27		1.49	0.90		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 3.76

Intersection Signal Delay: 213.8

Intersection LOS: F

Intersection Capacity Utilization 87.8%

ICU Level of Service E

Analysis Period (min) 15

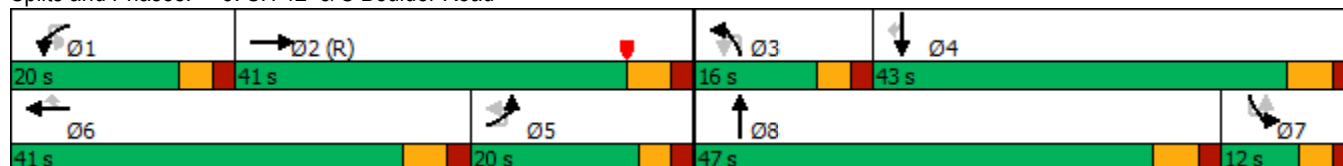
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2029 Total PM.syn



Lane Group	SBL	SBT	SBR
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1091	640
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.84	0.60	0.64
Intersection Summary			

4: Front Street & Harper Street
Year 2029 Total PM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	7	12	0	5
Future Volume (vph)	12	0	7	12	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.916					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1706	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1706	0	0	1863
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	21	0	0	5
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

4: Front Street & Harper Street
Year 2029 Total PM.syn

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	0	7	12	0	5
Future Vol, veh/h	12	0	7	12	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	8	13	0	5
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	20	15	0	0	21	0
Stage 1	15	-	-	-	-	-
Stage 2	5	-	-	-	-	-
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	997	1065	-	-	1595	-
Stage 1	1008	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	997	1065	-	-	1595	-
Mov Cap-2 Maneuver	997	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 997		1595	-	
HCM Lane V/C Ratio	-	- 0.013		-	-	
HCM Control Delay (s)	-	- 8.7		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	

5: SH 42 & Cannon Circle
Year 2029 Total PM.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	20	2	29	1129	1168	1
Future Volume (vph)	0	20	2	29	1129	1168	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	22	0	0	34	1227	1271	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	69.4%			ICU Level of Service C			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2029 Total PM.syn

Intersection							
Int Delay, s/veh	0.3						
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	0	20	2	29	1129	1168	1
Future Vol, veh/h	0	20	2	29	1129	1168	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	-	-	140	-	-	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	22	2	32	1227	1270	1
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	2562	636	1271	1271	0	-	0
Stage 1	1271	-	-	-	-	-	-
Stage 2	1291	-	-	-	-	-	-
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-
Pot Cap-1 Maneuver	25	421	165	544	-	-	-
Stage 1	228	-	-	-	-	-	-
Stage 2	257	-	-	-	-	-	-
Platoon blocked, %					-	-	-
Mov Cap-1 Maneuver	23	421	469	469	-	-	-
Mov Cap-2 Maneuver	23	-	-	-	-	-	-
Stage 1	212	-	-	-	-	-	-
Stage 2	257	-	-	-	-	-	-
Approach	EB		NB		SB		
HCM Control Delay, s	14		0.4		0		
HCM LOS	B						
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	469		-	421	-	-	
HCM Lane V/C Ratio	0.072		-	0.052	-	-	
HCM Control Delay (s)	13.3		-	14	-	-	
HCM Lane LOS	B		-	B	-	-	
HCM 95th %tile Q(veh)	0.2		-	0.2	-	-	

1: Front Street & S Boulder Road
Year 2029 Total SAT.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		 			 	 						
Traffic Volume (vph)	0	1071	34	27	13	1158	3	0	0	47	0	0
Future Volume (vph)	0	1071	34	27	13	1158	3	0	0	47	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1164	37	0	43	1262	0	0	0	51	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	43.2%						ICU Level of Service A					
Analysis Period (min)	15											

1: Front Street & S Boulder Road
Year 2029 Total SAT.syn



Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	8
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2029 Total SAT.syn

Intersection													
Int Delay, s/veh	0.7												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1071	34	27	13	1158	3	0	0	47	0	0	7
Future Vol, veh/h	0	1071	34	27	13	1158	3	0	0	47	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1164	37	29	14	1259	3	0	0	51	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1164	1201	0	0	-	-	582	-	-	631
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	260	577	-	-	0	0	456	0	0	424
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	289	289	-	-	-	-	456	-	-	424
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.7			13.9			13.6			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	456	-	-	289	-	-	424						
HCM Lane V/C Ratio	0.112	-	-	0.15	-	-	0.018						
HCM Control Delay (s)	13.9	-	-	19.7	-	-	13.6						
HCM Lane LOS	B	-	-	C	-	-	B						
HCM 95th %tile Q(veh)	0.4	-	-	0.5	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2029 Total SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	36	1090	14	3	74	1090	8	0	0	68	0
Future Volume (vph)	3	36	1090	14	3	74	1090	8	0	0	68	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.998				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	1200	0	0	83	1194	0	0	0	74	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.1%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2029 Total SAT.syn



Lane Group	SBT	SBR
Lane Configurations		↗
Traffic Volume (vph)	0	74
Future Volume (vph)	0	74
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	80
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2029 Total SAT.syn

Intersection														
Int Delay, s/veh	1.4													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	36	1090	14	3	74	1090	8	0	0	68	0	0	74
Future Vol, veh/h	3	36	1090	14	3	74	1090	8	0	0	68	0	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	39	1185	15	3	80	1185	9	0	0	74	0	0	80
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1193	1194	0	0	1200	1200	0	0	-	-	600	-	-	597
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	249	580	-	-	247	577	-	-	0	0	444	0	0	446
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	510	510	-	-	540	540	-	-	-	-	444	-	-	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.4			0.8			14.7			14.8				
HCM LOS							B			B				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	444	510	-	-	540	-	-	446						
HCM Lane V/C Ratio	0.166	0.083	-	-	0.155	-	-	0.18						
HCM Control Delay (s)	14.7	12.7	-	-	12.9	-	-	14.8						
HCM Lane LOS	B	B	-	-	B	-	-	B						
HCM 95th %tile Q(veh)	0.6	0.3	-	-	0.5	-	-	0.7						

3: SH 42 & S Boulder Road
Year 2029 Total SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	28	331	496	99	282	553	100	1	95	373	200	4
Future Volume (vph)	28	331	496	99	282	553	100	1	95	373	200	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		0	225		270		220		0	
Storage Lanes		2		0	2		1		2		0	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	0.95	0.97	0.95	1.00	0.95	0.97	0.95	0.95	0.95
Frt			0.975				0.850			0.948		
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3451	0	3433	3539	1583	0	3433	3355	0	0
Flt Permitted		0.425			0.950				0.367			
Satd. Flow (perm)	0	1536	3451	0	3433	3539	1583	0	1326	3355	0	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)			20				182			90		
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	390	647	0	307	601	109	0	104	622	0	0
Turn Type	custom	Prot	NA		Prot	NA	Perm	custom	Prot	NA		custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5						6	3				7
Detector Phase	5	5	2		1	6	6	3	3	8		7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0		5.0	10.0	10.0	5.0	5.0	6.0		5.0
Minimum Split (s)	10.0	10.0	37.0		10.0	37.0	37.0	10.0	10.0	40.0		10.0
Total Split (s)	20.0	20.0	41.0		20.0	41.0	41.0	16.0	16.0	47.0		12.0
Total Split (%)	16.7%	16.7%	34.2%		16.7%	34.2%	34.2%	13.3%	13.3%	39.2%		10.0%
Yellow Time (s)	3.0	3.0	4.0		3.0	4.0	4.0	3.0	3.0	4.0		3.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		5.0	6.0		5.0	6.0	6.0		5.0	6.0		
Lead/Lag	Lag	Lag	Lag		Lead	Lead	Lead	Lead	Lead	Lead		Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max		None	Max	Max	None	None	Max		None
Act Effect Green (s)		15.0	35.8		14.2	35.0	35.0		10.9	41.0		
Actuated g/C Ratio		0.12	0.30		0.12	0.29	0.29		0.09	0.34		
v/c Ratio		2.03	0.62		0.76	0.58	0.18		0.87	0.52		
Control Delay		509.6	38.3		63.8	39.0	0.7		106.0	28.5		
Queue Delay		0.0	0.0		0.0	0.0	0.0		0.0	0.0		
Total Delay		509.6	38.3		63.8	39.0	0.7		106.0	28.5		
LOS		F	D		E	D	A		F	C		
Approach Delay			215.6			42.4				39.6		
Approach LOS			F			D				D		
Queue Length 50th (ft)		~244	222		119	208	0		41	171		
Queue Length 95th (ft)		#344	286		169	270	1		#95	229		
Internal Link Dist (ft)			385			1735				338		

3: SH 42 & S Boulder Road
Year 2029 Total SAT.syn

			
Lane Group	SBL	SBT	SBR
Lane Configurations	 	 	
Traffic Volume (vph)	107	410	303
Future Volume (vph)	107	410	303
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1583
Right Turn on Red			Yes
Satd. Flow (RTOR)			293
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	120	446	329
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effect Green (s)	7.0	37.1	37.1
Actuated g/C Ratio	0.06	0.31	0.31
v/c Ratio	1.00	0.41	0.48
Control Delay	139.0	34.2	7.9
Queue Delay	0.0	0.0	0.0
Total Delay	139.0	34.2	7.9
LOS	F	C	A
Approach Delay		38.6	
Approach LOS		D	
Queue Length 50th (ft)	48	143	20
Queue Length 95th (ft)	#113	192	95
Internal Link Dist (ft)		1257	

3: SH 42 & S Boulder Road

Year 2029 Total SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Turn Bay Length (ft)		150			225		270		220			
Base Capacity (vph)		192	1044		429	1032	590		121	1205		
Starvation Cap Reductn		0	0		0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0		0	0		
Storage Cap Reductn		0	0		0	0	0		0	0		
Reduced v/c Ratio		2.03	0.62		0.72	0.58	0.18		0.86	0.52		

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.03

Intersection Signal Delay: 89.8

Intersection LOS: F

Intersection Capacity Utilization 66.8%

ICU Level of Service C

Analysis Period (min) 15

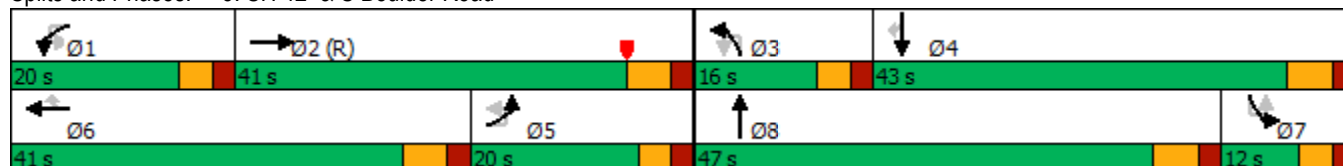
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2029 Total SAT.syn



Lane Group	SBL	SBT	SBR
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1093	691
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.00	0.41	0.48
Intersection Summary			

4: Front Street & Harper Street
Year 2029 Total SAT.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	4	12	0	4
Future Volume (vph)	12	0	4	12	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1671	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1671	0	0	1863
Link Speed (mph)	20	20		20		
Link Distance (ft)	820	375		848		
Travel Time (s)	28.0	12.8		28.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	17	0	0	4
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

4: Front Street & Harper Street
Year 2029 Total SAT.syn

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	0	4	12	0	4
Future Vol, veh/h	12	0	4	12	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	4	13	0	4
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	15	11	0	0	17	0
Stage 1	11	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1004	1070	-	-	1600	-
Stage 1	1012	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1004	1070	-	-	1600	-
Mov Cap-2 Maneuver	1004	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1004		1600	-	
HCM Lane V/C Ratio	-	- 0.013		-	-	
HCM Control Delay (s)	-	- 8.6		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	

5: SH 42 & Cannon Circle
Year 2029 Total SAT.syn

							
Lane Group	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations						 	
Traffic Volume (vph)	0	20	1	19	836	942	1
Future Volume (vph)	0	20	1	19	836	942	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140			0
Storage Lanes	1	0		1			0
Taper Length (ft)	25			100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt	0.865						
Flt Protected				0.950			
Satd. Flow (prot)	1611	0	0	1770	1863	3539	0
Flt Permitted				0.950			
Satd. Flow (perm)	1611	0	0	1770	1863	3539	0
Link Speed (mph)	20				45	45	
Link Distance (ft)	418				430	418	
Travel Time (s)	14.3				6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)							
Lane Group Flow (vph)	22	0	0	22	909	1025	0
Sign Control	Stop				Free	Free	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	54.0%			ICU Level of Service A			
Analysis Period (min)	15						

5: SH 42 & Cannon Circle
Year 2029 Total SAT.syn

Intersection								
Int Delay, s/veh	0.3							
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR	
Lane Configurations								
Traffic Vol, veh/h	0	20	1	19	836	942	1	
Future Vol, veh/h	0	20	1	19	836	942	1	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	
RT Channelized	-	None	-	-	None	-	None	
Storage Length	0	-	-	140	-	-	-	
Veh in Median Storage, #	0	-	-	-	0	0	-	
Grade, %	0	-	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	2	
Mvmt Flow	0	22	1	21	909	1024	1	
Major/Minor	Minor2	Major1		Major2				
Conflicting Flow All	1976	513	1025	1025	0	-	0	
Stage 1	1025	-	-	-	-	-	-	
Stage 2	951	-	-	-	-	-	-	
Critical Hdwy	6.63	6.93	6.93	4.13	-	-	-	
Critical Hdwy Stg 1	5.83	-	-	-	-	-	-	
Critical Hdwy Stg 2	5.43	-	-	-	-	-	-	
Follow-up Hdwy	3.519	3.319	3.119	2.219	-	-	-	
Pot Cap-1 Maneuver	61	507	242	675	-	-	-	
Stage 1	308	-	-	-	-	-	-	
Stage 2	374	-	-	-	-	-	-	
Platoon blocked, %					-	-	-	
Mov Cap-1 Maneuver	59	507	616	616	-	-	-	
Mov Cap-2 Maneuver	59	-	-	-	-	-	-	
Stage 1	297	-	-	-	-	-	-	
Stage 2	374	-	-	-	-	-	-	
Approach	EB	NB		SB				
HCM Control Delay, s	12.4	0.3		0				
HCM LOS	B							
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR			
Capacity (veh/h)	616	-	507	-	-			
HCM Lane V/C Ratio	0.035	-	0.043	-	-			
HCM Control Delay (s)	11.1	-	12.4	-	-			
HCM Lane LOS	B	-	B	-	-			
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-			

1: Front Street & S Boulder Road
Year 2050 Total AM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	0	1082	19	20	4	1537	6	0	0	34	0	0
Future Volume (vph)	0	1082	19	20	4	1537	6	0	0	34	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.999				0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3536	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1176	21	0	26	1678	0	0	0	37	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.7%						ICU Level of Service A					
Analysis Period (min)	15											

1: Front Street & S Boulder Road
Year 2050 Total AM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	10
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2050 Total AM.syn

Intersection													
Int Delay, s/veh	0.4												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1082	19	20	4	1537	6	0	0	34	0	0	9
Future Vol, veh/h	0	1082	19	20	4	1537	6	0	0	34	0	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1176	21	22	4	1671	7	0	0	37	0	0	10
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1176	1197	0	0	-	-	588	-	-	839
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	256	579	-	-	0	0	452	0	0	309
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	263	263	-	-	-	-	452	-	-	309
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.3			13.7			17			
HCM LOS							B			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	452	-	-	263	-	-	309						
HCM Lane V/C Ratio	0.082	-	-	0.099	-	-	0.032						
HCM Control Delay (s)	13.7	-	-	20.2	-	-	17						
HCM Lane LOS	B	-	-	C	-	-	C						
HCM 95th %tile Q(veh)	0.3	-	-	0.3	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2050 Total AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	26	1070	10	3	32	1500	10	0	0	77	0
Future Volume (vph)	8	26	1070	10	3	32	1500	10	0	0	77	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	1174	0	0	38	1641	0	0	0	84	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	51.8%						ICU Level of Service A					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2050 Total AM.syn



Lane Group	SBT	SBR
Lane Configurations		↗
Traffic Volume (vph)	0	41
Future Volume (vph)	0	41
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	45
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2050 Total AM.syn

Intersection														
Int Delay, s/veh	1.1													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	8	26	1070	10	3	32	1500	10	0	0	77	0	0	41
Future Vol, veh/h	8	26	1070	10	3	32	1500	10	0	0	77	0	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	28	1163	11	3	35	1630	11	0	0	84	0	0	45
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1641	1641	0	0	1174	1174	0	0	-	-	587	-	-	821
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	128	391	-	-	257	591	-	-	0	0	453	0	0	318
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	245	245	-	-	513	513	-	-	-	-	453	-	-	318
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.7			0.3			14.7			18.2				
HCM LOS							B			C				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	453	245	-	-	513	-	-	318						
HCM Lane V/C Ratio	0.185	0.151	-	-	0.074	-	-	0.14						
HCM Control Delay (s)	14.7	22.3	-	-	12.6	-	-	18.2						
HCM Lane LOS	B	C	-	-	B	-	-	C						
HCM 95th %tile Q(veh)	0.7	0.5	-	-	0.2	-	-	0.5						

3: SH 42 & S Boulder Road
Year 2050 Total AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	28	415	586	194	342	903	192	3	235	573	277	3
Future Volume (vph)	28	415	586	194	342	903	192	3	235	573	277	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		150	225		270		220		200	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.292			0.950				0.364			
Satd. Flow (perm)	0	1055	3539	1583	3433	3539	1583	0	1315	3539	1583	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				187			182				301	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	481	637	211	372	982	209	0	258	623	301	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	20.0	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0
Total Split (%)	16.7%	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effect Green (s)		15.0	35.1	35.1	14.9	35.0	35.0		11.0	41.0	41.0	
Actuated g/C Ratio		0.12	0.29	0.29	0.12	0.29	0.29		0.09	0.34	0.34	
v/c Ratio		3.67	0.62	0.35	0.88	0.95	0.35		2.15	0.52	0.41	
Control Delay		1236.7	39.7	8.3	73.3	60.5	8.6		570.9	33.4	4.9	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		1236.7	39.7	8.3	73.3	60.5	8.6		570.9	33.4	4.9	
LOS		F	D	A	E	E	A		F	C	A	
Approach Delay			467.9			56.6				143.5		
Approach LOS			F			E				F		
Queue Length 50th (ft)		~344	224	13	147	392	15		~164	201	0	
Queue Length 95th (ft)		#453	287	73	#229	#527	74		#251	260	60	
Internal Link Dist (ft)			385			1735				338		

3: SH 42 & S Boulder Road
Year 2050 Total AM.syn

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	189	725	513
Future Volume (vph)	189	725	513
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1583
Right Turn on Red			Yes
Satd. Flow (RTOR)			215
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	208	788	558
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effect Green (s)	7.0	37.0	37.0
Actuated g/C Ratio	0.06	0.31	0.31
v/c Ratio	1.73	0.72	0.88
Control Delay	395.7	41.5	40.3
Queue Delay	0.0	0.0	0.0
Total Delay	395.7	41.5	40.3
LOS	F	D	D
Approach Delay		88.5	
Approach LOS		F	
Queue Length 50th (ft)	~122	285	270
Queue Length 95th (ft)	#202	358	#483
Internal Link Dist (ft)		1257	

3: SH 42 & S Boulder Road

Year 2050 Total AM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Turn Bay Length (ft)		150		150	225		270		220		200	
Base Capacity (vph)		131	1035	595	429	1032	590		120	1209	739	
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		3.67	0.62	0.35	0.87	0.95	0.35		2.15	0.52	0.41	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 3.67

Intersection Signal Delay: 180.8

Intersection LOS: F

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

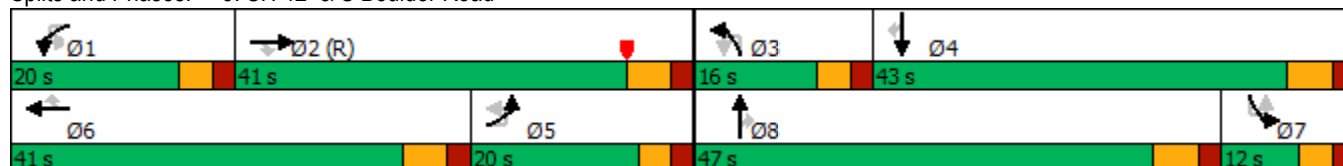
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2050 Total AM.syn



Lane Group	SBL	SBT	SBR
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1091	636
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.73	0.72	0.88
Intersection Summary			

4: Front Street & Harper Street
Year 2050 Total AM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	0	13	10	0	6
Future Volume (vph)	10	0	13	10	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.941					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1753	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1753	0	0	1863
Link Speed (mph)	20	20		20		
Link Distance (ft)	820	375		848		
Travel Time (s)	28.0	12.8		28.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	25	0	0	7
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

4: Front Street & Harper Street
Year 2050 Total AM.syn

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	13	10	0	6
Future Vol, veh/h	10	0	13	10	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	0	14	11	0	7
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	27	20	0	0	25	0
Stage 1	20	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	988	1058	-	-	1589	-
Stage 1	1003	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	988	1058	-	-	1589	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 988		1589	-	
HCM Lane V/C Ratio	-	- 0.011		-	-	
HCM Control Delay (s)	-	- 8.7		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	

5: SH 42 & Cannon Circle
Year 2050 Total AM.syn

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					 	
Traffic Volume (vph)	0	27	0	902	1006	2
Future Volume (vph)	0	27	0	902	1006	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	0	980	1095	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.8%			ICU Level of Service A		
Analysis Period (min)	15					

5: SH 42 & Cannon Circle
Year 2050 Total AM.syn

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↑↑	
Traffic Vol, veh/h	0	27	0	902	1006	2
Future Vol, veh/h	0	27	0	902	1006	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	0	980	1093	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	548	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	481	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	481	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 481		-	-		
HCM Lane V/C Ratio	- 0.061		-	-		
HCM Control Delay (s)	- 13		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.2		-	-		

1: Front Street & S Boulder Road

Year 2050 Total PM.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		 			 	 						
Traffic Volume (vph)	0	1837	50	38	8	1815	5	0	0	45	0	0
Future Volume (vph)	0	1837	50	38	8	1815	5	0	0	45	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1997	54	0	50	1978	0	0	0	49	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 60.8%	ICU Level of Service B											
Analysis Period (min) 15												

1: Front Street & S Boulder Road
Year 2050 Total PM.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	13
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2050 Total PM.syn

Intersection													
Int Delay, s/veh	2												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↘	↑↑				↗			↗
Traffic Vol, veh/h	0	1837	50	38	8	1815	5	0	0	45	0	0	12
Future Vol, veh/h	0	1837	50	38	8	1815	5	0	0	45	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1997	54	41	9	1973	5	0	0	49	0	0	13
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1997	2051	0	0	-	-	999	-	-	989
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	75	270	-	-	0	0	242	0	0	246
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-			-	-						
Mov Cap-1 Maneuver	-	-	-	70	70	-	-	-	-	242	-	-	246
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			3.3			23.6			20.5			
HCM LOS							C			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	242	-	-	70	-	-	246						
HCM Lane V/C Ratio	0.202	-	-	0.714	-	-	0.053						
HCM Control Delay (s)	23.6	-	-	134.1	-	-	20.5						
HCM Lane LOS	C	-	-	F	-	-	C						
HCM 95th %tile Q(veh)	0.7	-	-	3.3	-	-	0.2						

2: Cannon Circle & S Boulder Road
Year 2050 Total PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	29	26	1833	19	2	99	1696	14	0	0	82	0
Future Volume (vph)	29	26	1833	19	2	99	1696	14	0	0	82	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.998				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3532	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	2013	0	0	110	1858	0	0	0	89	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	71.9%						ICU Level of Service C					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2050 Total PM.syn



Lane Group	SBT	SBR
Lane Configurations		↗
Traffic Volume (vph)	0	68
Future Volume (vph)	0	68
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	74
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2050 Total PM.syn

Intersection														
Int Delay, s/veh	2.8													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	29	26	1833	19	2	99	1696	14	0	0	82	0	0	68
Future Vol, veh/h	29	26	1833	19	2	99	1696	14	0	0	82	0	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	28	1992	21	2	108	1843	15	0	0	89	0	0	74
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1859	1858	0	0	2013	2013	0	0	-	-	1007	-	-	929
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	92	322	-	-	73	280	-	-	0	0	239	0	0	269
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	110	110	-	-	256	256	-	-	-	-	239	-	-	269
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	2.1			1.6			28.8			23.4				
HCM LOS							D			C				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	239	110	-	-	256	-	-	269						
HCM Lane V/C Ratio	0.373	0.543	-	-	0.429	-	-	0.275						
HCM Control Delay (s)	28.8	71.5	-	-	29.3	-	-	23.4						
HCM Lane LOS	D	F	-	-	D	-	-	C						
HCM 95th %tile Q(veh)	1.6	2.5	-	-	2	-	-	1.1						

3: SH 42 & S Boulder Road
Year 2050 Total PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	38	692	951	197	370	860	186	6	208	880	353	6
Future Volume (vph)	38	692	951	197	370	860	186	6	208	880	353	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		150	225		270		220		200	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.306			0.950				0.364			
Satd. Flow (perm)	0	1106	3539	1583	3433	3539	1583	0	1315	3539	1583	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				173			182				312	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	793	1034	214	402	935	202	0	233	957	384	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	20.0	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0
Total Split (%)	16.7%	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effect Green (s)		15.0	35.0	35.0	15.0	35.0	35.0		11.0	41.0	41.0	
Actuated g/C Ratio		0.12	0.29	0.29	0.12	0.29	0.29		0.09	0.34	0.34	
v/c Ratio		5.75	1.00	0.37	0.94	0.91	0.34		1.94	0.79	0.51	
Control Delay		2161.8	71.2	9.9	82.5	54.2	8.0		482.1	41.4	9.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		2161.8	71.2	9.9	82.5	54.2	8.0		482.1	41.4	9.1	
LOS		F	E	A	F	D	A		F	D	A	
Approach Delay			877.0			55.5				98.8		
Approach LOS			F			E				F		
Queue Length 50th (ft)		~601	~423	23	161	367	11		~143	350	38	
Queue Length 95th (ft)		#725	#573	85	#257	#486	68		#227	432	125	
Internal Link Dist (ft)			385			1735				338		

3: SH 42 & S Boulder Road
Year 2050 Total PM.syn

			
Lane Group	SBL	SBT	SBR
Lane Configurations	 	 	
Traffic Volume (vph)	249	750	474
Future Volume (vph)	249	750	474
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1583
Right Turn on Red			Yes
Satd. Flow (RTOR)			198
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	278	815	515
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effect Green (s)	7.0	37.0	37.0
Actuated g/C Ratio	0.06	0.31	0.31
v/c Ratio	2.32	0.75	0.82
Control Delay	643.1	42.4	35.6
Queue Delay	0.0	0.0	0.0
Total Delay	643.1	42.4	35.6
LOS	F	D	D
Approach Delay		144.1	
Approach LOS		F	
Queue Length 50th (ft)	~180	297	239
Queue Length 95th (ft)	#270	373	#426
Internal Link Dist (ft)		1257	

3: SH 42 & S Boulder Road

Year 2050 Total PM.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Turn Bay Length (ft)		150		150	225		270		220		200	
Base Capacity (vph)		138	1032	584	429	1032	590		120	1209	746	
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		5.75	1.00	0.37	0.94	0.91	0.34		1.94	0.79	0.51	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 5.75

Intersection Signal Delay: 334.6

Intersection LOS: F

Intersection Capacity Utilization 98.4%

ICU Level of Service F

Analysis Period (min) 15

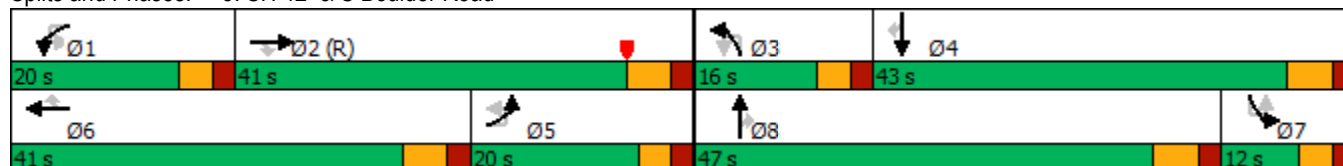
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2050 Total PM.syn



Lane Group	SBL	SBT	SBR
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1091	625
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	2.32	0.75	0.82
Intersection Summary			

4: Front Street & Harper Street
Year 2050 Total PM.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	37	12	0	5
Future Volume (vph)	12	0	37	12	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.967					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1801	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1801	0	0	1863
Link Speed (mph)	20		20			20
Link Distance (ft)	820		375			848
Travel Time (s)	28.0		12.8			28.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	53	0	0	5
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

4: Front Street & Harper Street
Year 2050 Total PM.syn

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	0	37	12	0	5
Future Vol, veh/h	12	0	37	12	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	40	13	0	5
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	52	47	0	0	53	0
Stage 1	47	-	-	-	-	-
Stage 2	5	-	-	-	-	-
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	957	1022	-	-	1553	-
Stage 1	975	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	957	1022	-	-	1553	-
Mov Cap-2 Maneuver	957	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.8	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	957	1553	-	
HCM Lane V/C Ratio	-	-	0.014	-	-	
HCM Control Delay (s)	-	-	8.8	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

5: SH 42 & Cannon Circle
Year 2050 Total PM.syn

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					 	
Traffic Volume (vph)	0	20	0	1406	1454	1
Future Volume (vph)	0	20	0	1406	1454	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	0	1528	1581	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.3%			ICU Level of Service D		
Analysis Period (min)	15					

5: SH 42 & Cannon Circle
Year 2050 Total PM.syn

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↑↑	
Traffic Vol, veh/h	0	20	0	1406	1454	1
Future Vol, veh/h	0	20	0	1406	1454	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	0	1528	1580	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	791	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	333	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	333	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.6	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 333		-	-		
HCM Lane V/C Ratio	- 0.065		-	-		
HCM Control Delay (s)	- 16.6		-	-		
HCM Lane LOS	- C		-	-		
HCM 95th %tile Q(veh)	- 0.2		-	-		

1: Front Street & S Boulder Road
Year 2050 Total SAT.syn

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↗		↘	↑↑				↗		
Traffic Volume (vph)	0	1436	34	27	13	1546	3	0	0	47	0	0
Future Volume (vph)	0	1436	34	27	13	1546	3	0	0	47	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50		70		0	0		0	0	
Storage Lanes	0		1		1		0	0		1	0	
Taper Length (ft)	25				75			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.865		
Flt Protected					0.950							
Satd. Flow (prot)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	3539	1583	0	1770	3539	0	0	0	1611	0	0
Link Speed (mph)		35				35			20			20
Link Distance (ft)		1036				360			848			476
Travel Time (s)		20.2				7.0			28.9			16.2
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1561	37	0	43	1683	0	0	0	51	0	0
Sign Control		Free				Free			Stop			Stop
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	52.8%						ICU Level of Service A					
Analysis Period (min)	15											

1: Front Street & S Boulder Road
Year 2050 Total SAT.syn



Lane Group	SBR
Lane Configurations	↗
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.865
Flt Protected	
Satd. Flow (prot)	1611
Flt Permitted	
Satd. Flow (perm)	1611
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Shared Lane Traffic (%)	
Lane Group Flow (vph)	8
Sign Control	
Intersection Summary	

1: Front Street & S Boulder Road
Year 2050 Total SAT.syn

Intersection													
Int Delay, s/veh	0.8												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↓	↑↓				↑			↑
Traffic Vol, veh/h	0	1436	34	27	13	1546	3	0	0	47	0	0	7
Future Vol, veh/h	0	1436	34	27	13	1546	3	0	0	47	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	-	50	-	70	-	-	-	-	0	-	-	0
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1561	37	29	14	1680	3	0	0	51	0	0	8
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	-	0	0	1561	1598	0	0	-	-	781	-	-	842
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	144	406	-	-	0	0	338	0	0	308
Stage 1	0	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	0	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	160	160	-	-	-	-	338	-	-	308
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0			0.9			17.5			17			
HCM LOS							C			C			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	338	-	-	160	-	-	308						
HCM Lane V/C Ratio	0.151	-	-	0.272	-	-	0.025						
HCM Control Delay (s)	17.5	-	-	35.7	-	-	17						
HCM Lane LOS	C	-	-	E	-	-	C						
HCM 95th %tile Q(veh)	0.5	-	-	1	-	-	0.1						

2: Cannon Circle & S Boulder Road
Year 2050 Total SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	36	1447	14	3	74	1452	8	0	0	68	0
Future Volume (vph)	3	36	1447	14	3	74	1452	8	0	0	68	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		90		0		80		0	0		0	0
Storage Lanes		1		0		1		0	0		1	0
Taper Length (ft)		75				80			25			25
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.999				0.999				0.865	
Flt Protected		0.950				0.950						
Satd. Flow (prot)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Flt Permitted		0.950				0.950						
Satd. Flow (perm)	0	1770	3536	0	0	1770	3536	0	0	0	1611	0
Link Speed (mph)			35				35			20		
Link Distance (ft)			360				465			598		
Travel Time (s)			7.0				9.1			20.4		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	42	1588	0	0	83	1587	0	0	0	74	0
Sign Control			Free				Free			Stop		
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	58.9%						ICU Level of Service B					
Analysis Period (min)	15											

2: Cannon Circle & S Boulder Road
Year 2050 Total SAT.syn



Lane Group	SBT	SBR
Lane Configurations		↗
Traffic Volume (vph)	0	74
Future Volume (vph)	0	74
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		0
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	1.00	1.00
Frt		0.865
Flt Protected		
Satd. Flow (prot)	0	1611
Flt Permitted		
Satd. Flow (perm)	0	1611
Link Speed (mph)	20	
Link Distance (ft)	431	
Travel Time (s)	14.7	
Peak Hour Factor	0.92	0.92
Shared Lane Traffic (%)		
Lane Group Flow (vph)	0	80
Sign Control	Stop	
Intersection Summary		

2: Cannon Circle & S Boulder Road
Year 2050 Total SAT.syn

Intersection														
Int Delay, s/veh	1.5													
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	36	1447	14	3	74	1452	8	0	0	68	0	0	74
Future Vol, veh/h	3	36	1447	14	3	74	1452	8	0	0	68	0	0	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	-	None	-	-	None	-	-	None
Storage Length	-	90	-	-	-	80	-	-	-	-	0	-	-	0
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	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	39	1573	15	3	80	1578	9	0	0	74	0	0	80
Major/Minor	Major1			Major2			Minor1			Minor2				
Conflicting Flow All	1587	1587	0	0	1588	1588	0	0	-	-	794	-	-	794
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.44	4.14	-	-	6.44	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.52	2.22	-	-	2.52	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	138	410	-	-	138	410	-	-	0	0	331	0	0	331
Stage 1	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %			-	-			-	-						
Mov Cap-1 Maneuver	337	337	-	-	371	371	-	-	-	-	331	-	-	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB				
HCM Control Delay, s	0.4			0.9			19			19.3				
HCM LOS							C			C				
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1						
Capacity (veh/h)	331	337	-	-	371	-	-	331						
HCM Lane V/C Ratio	0.223	0.126	-	-	0.226	-	-	0.243						
HCM Control Delay (s)	19	17.2	-	-	17.5	-	-	19.3						
HCM Lane LOS	C	C	-	-	C	-	-	C						
HCM 95th %tile Q(veh)	0.8	0.4	-	-	0.9	-	-	0.9						

3: SH 42 & S Boulder Road
Year 2050 Total SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	28	420	658	128	358	708	126	4	122	464	253	4
Future Volume (vph)	28	420	658	128	358	708	126	4	122	464	253	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		150		150	225		270		220		200	
Storage Lanes		2		1	2		1		2		1	
Taper Length (ft)		80			135				70			
Lane Util. Factor	0.95	0.97	0.95	1.00	0.97	0.95	1.00	0.95	0.97	0.95	1.00	0.95
Frt				0.850			0.850				0.850	
Flt Protected		0.950			0.950				0.950			
Satd. Flow (prot)	0	3433	3539	1583	3433	3539	1583	0	3433	3539	1583	0
Flt Permitted		0.360			0.950				0.364			
Satd. Flow (perm)	0	1301	3539	1583	3433	3539	1583	0	1315	3539	1583	0
Right Turn on Red				Yes			Yes				Yes	
Satd. Flow (RTOR)				173			182				275	
Link Speed (mph)			35			35				45		
Link Distance (ft)			465			1815				418		
Travel Time (s)			9.1			35.4				6.3		
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	487	715	139	389	770	137	0	137	504	275	0
Turn Type	custom	Prot	NA	Perm	Prot	NA	Perm	custom	Prot	NA	Perm	custom
Protected Phases		5	2		1	6			3	8		
Permitted Phases	5			2			6	3			8	7
Detector Phase	5	5	2	2	1	6	6	3	3	8	8	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	5.0	6.0	6.0	5.0
Minimum Split (s)	10.0	10.0	37.0	37.0	10.0	37.0	37.0	10.0	10.0	40.0	40.0	10.0
Total Split (s)	20.0	20.0	41.0	41.0	20.0	41.0	41.0	16.0	16.0	47.0	47.0	12.0
Total Split (%)	16.7%	16.7%	34.2%	34.2%	16.7%	34.2%	34.2%	13.3%	13.3%	39.2%	39.2%	10.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)		5.0	6.0	6.0	5.0	6.0	6.0		5.0	6.0	6.0	
Lead/Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	C-Max	C-Max	None	Max	Max	None	None	Max	Max	None
Act Effect Green (s)		15.0	35.0	35.0	15.0	35.0	35.0		11.0	41.0	41.0	
Actuated g/C Ratio		0.12	0.29	0.29	0.12	0.29	0.29		0.09	0.34	0.34	
v/c Ratio		3.01	0.69	0.24	0.91	0.75	0.23		1.14	0.42	0.38	
Control Delay		938.3	41.9	3.2	77.5	43.8	2.6		173.8	31.6	4.9	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay		938.3	41.9	3.2	77.5	43.8	2.6		173.8	31.6	4.9	
LOS		F	D	A	E	D	A		F	C	A	
Approach Delay			363.4			49.6				44.9		
Approach LOS			F			D				D		
Queue Length 50th (ft)		~337	258	0	155	284	0		~63	156	0	
Queue Length 95th (ft)		#444	327	27	#245	357	20		#130	206	58	
Internal Link Dist (ft)			385			1735				338		

3: SH 42 & S Boulder Road
Year 2050 Total SAT.syn

			
Lane Group	SBL	SBT	SBR
Lane Configurations	 	 	
Traffic Volume (vph)	136	509	383
Future Volume (vph)	136	509	383
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	185		270
Storage Lanes	2		1
Taper Length (ft)	155		
Lane Util. Factor	0.97	0.95	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	3433	3539	1583
Flt Permitted	0.571		
Satd. Flow (perm)	2063	3539	1583
Right Turn on Red			Yes
Satd. Flow (RTOR)			253
Link Speed (mph)		45	
Link Distance (ft)		1337	
Travel Time (s)		20.3	
Peak Hour Factor	0.92	0.92	0.92
Shared Lane Traffic (%)			
Lane Group Flow (vph)	152	553	416
Turn Type	Prot	NA	Perm
Protected Phases	7	4	
Permitted Phases			4
Detector Phase	7	4	4
Switch Phase			
Minimum Initial (s)	5.0	6.0	6.0
Minimum Split (s)	10.0	36.0	36.0
Total Split (s)	12.0	43.0	43.0
Total Split (%)	10.0%	35.8%	35.8%
Yellow Time (s)	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag
Lead-Lag Optimize?			
Recall Mode	None	Max	Max
Act Effect Green (s)	7.0	37.0	37.0
Actuated g/C Ratio	0.06	0.31	0.31
v/c Ratio	1.27	0.51	0.63
Control Delay	215.5	36.0	18.0
Queue Delay	0.0	0.0	0.0
Total Delay	215.5	36.0	18.0
LOS	F	D	B
Approach Delay		53.7	
Approach LOS		D	
Queue Length 50th (ft)	~76	184	104
Queue Length 95th (ft)	#146	241	217
Internal Link Dist (ft)		1257	

3: SH 42 & S Boulder Road

Year 2050 Total SAT.syn

												
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Turn Bay Length (ft)		150		150	225		270		220		200	
Base Capacity (vph)		162	1032	584	429	1032	590		120	1209	721	
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		3.01	0.69	0.24	0.91	0.75	0.23		1.14	0.42	0.38	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 35 (29%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 3.01

Intersection Signal Delay: 139.7

Intersection LOS: F

Intersection Capacity Utilization 78.6%

ICU Level of Service D

Analysis Period (min) 15

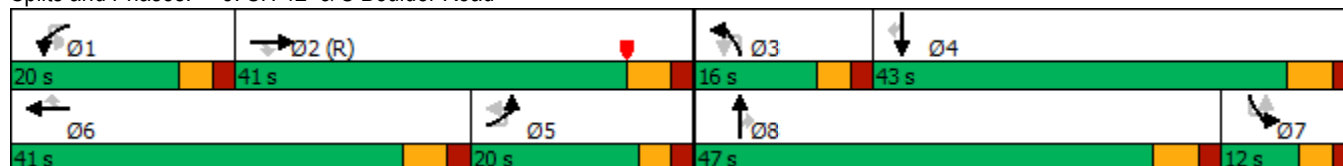
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3: SH 42 & S Boulder Road



3: SH 42 & S Boulder Road
Year 2050 Total SAT.syn



Lane Group	SBL	SBT	SBR
Turn Bay Length (ft)	185		270
Base Capacity (vph)	120	1091	663
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	1.27	0.51	0.63
Intersection Summary			

4: Front Street & Harper Street
Year 2050 Total SAT.syn

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	0	21	12	0	4
Future Volume (vph)	12	0	21	12	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1771	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1771	0	0	1863
Link Speed (mph)	20	20		20		
Link Distance (ft)	820	375		848		
Travel Time (s)	28.0	12.8		28.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	36	0	0	4
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

4: Front Street & Harper Street

Year 2050 Total SAT.syn

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	0	21	12	0	4
Future Vol, veh/h	12	0	21	12	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	23	13	0	4
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	34	30	0	0	36	0
Stage 1	30	-	-	-	-	-
Stage 2	4	-	-	-	-	-
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	979	1044	-	-	1575	-
Stage 1	993	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	979	1044	-	-	1575	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	979	1575	-	
HCM Lane V/C Ratio	-	-	0.013	-	-	
HCM Control Delay (s)	-	-	8.7	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

5: SH 42 & Cannon Circle
Year 2050 Total SAT.syn

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					 	
Traffic Volume (vph)	0	20	0	1044	1173	3
Future Volume (vph)	0	20	0	1044	1173	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	140			0
Storage Lanes	0	1	0			0
Taper Length (ft)	25		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.865				
Flt Protected						
Satd. Flow (prot)	0	1611	0	1863	3539	0
Flt Permitted						
Satd. Flow (perm)	0	1611	0	1863	3539	0
Link Speed (mph)	20			45	45	
Link Distance (ft)	418			430	418	
Travel Time (s)	14.3			6.5	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	22	0	1135	1278	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	58.3%			ICU Level of Service B		
Analysis Period (min)	15					

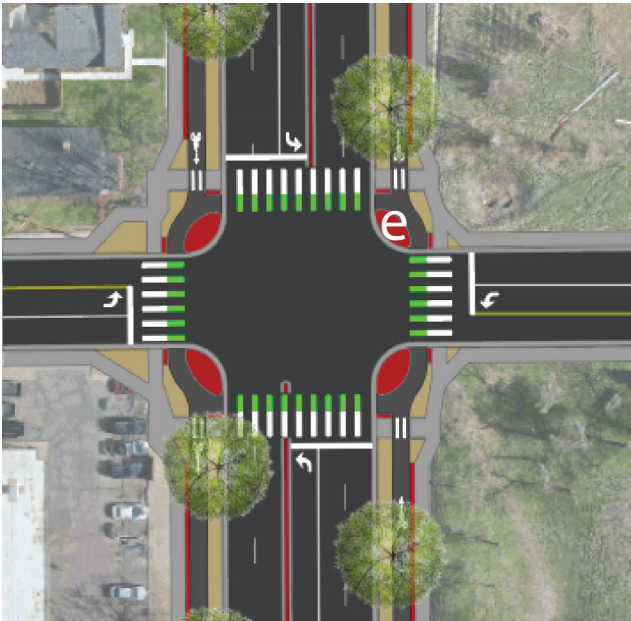
5: SH 42 & Cannon Circle
Year 2050 Total SAT.syn

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑	↑↑	
Traffic Vol, veh/h	0	20	0	1044	1173	3
Future Vol, veh/h	0	20	0	1044	1173	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	0	1135	1275	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	-	639	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.93	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.319	-	-	-	-
Pot Cap-1 Maneuver	0	420	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	420	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT EBLn1		SBT	SBR		
Capacity (veh/h)	- 420		-	-		
HCM Lane V/C Ratio	- 0.052		-	-		
HCM Control Delay (s)	- 14		-	-		
HCM Lane LOS	- B		-	-		
HCM 95th %tile Q(veh)	- 0.2		-	-		

Appendix F: Future 42 Excerpt of Preferred South Boulder Road and SH 42 Design

- e) *Protected intersections* are proposed to provide slower turning speeds, create more visibility to vulnerable users at conflict points, and make the overall experience safer for all modes of transportation. (South Boulder Road will not utilize a *protected intersection* design due to its large footprint)

Other safety improvements included: Adding protected left-turn signal phasing at Pine Street/Empire Road is projected to reduce crashes by 6 total crashes over 5 years.

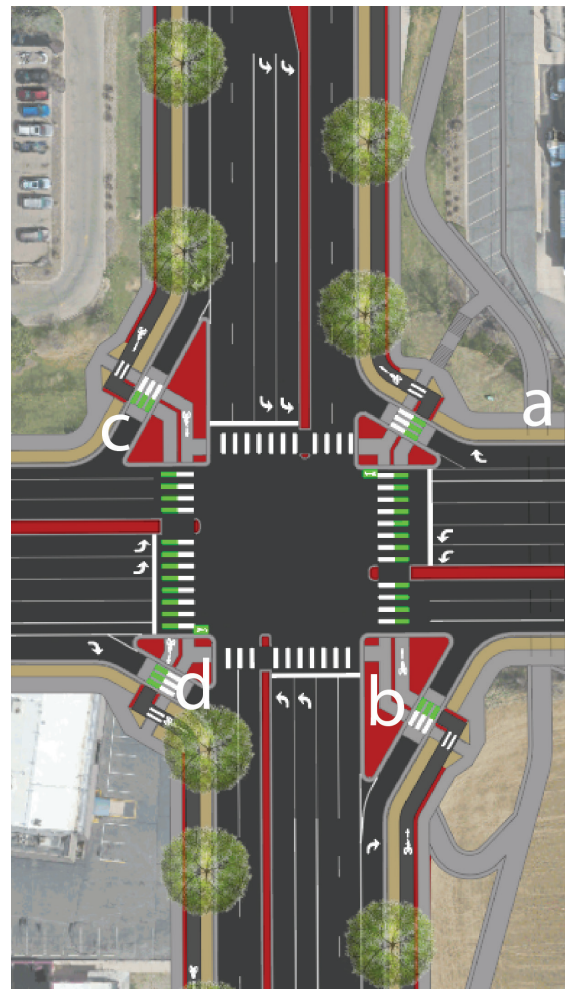


South Boulder Road Intersection

South Boulder Road has a large volume of traffic, making it a busy intersection with CO-42. Due to this congestion, a *protected intersection* would likely create a bottleneck in traffic, therefore a more traditional intersection with channelized right-turn lanes was proposed. Proposed improvements include:

- a) A bicycle and pedestrian underpass under the east leg of the intersection and exploration should happen for a southern leg underpass as well. This will allow pedestrians and bicyclists to cross without the potential for conflict with vehicular traffic.

- b) Channelizing islands at South Boulder Road will allow pedestrians to cross at grade safely. These islands help to shorten the crossing distance of crossing all of the lanes at once and allow for a pedestrian to safely cross using two light cycles.
- c) Speed tables to assist in slowing and alerting drivers to crossing bicyclists and pedestrians.
- d) Channelized right turn islands are oversized to allow space at South Boulder Road for the expected queue jumps that will be needed to accommodate future *BRT*.



Appendix G: City of Louisville Transportation Master Plan Excerpt of South Boulder Road Corridor Improvements and Commercial Driveway

PROJECT 1: CORRIDOR IMPROVEMENTS, CONT.

CP5: SOUTH BOULDER ROAD STUDY

Summary

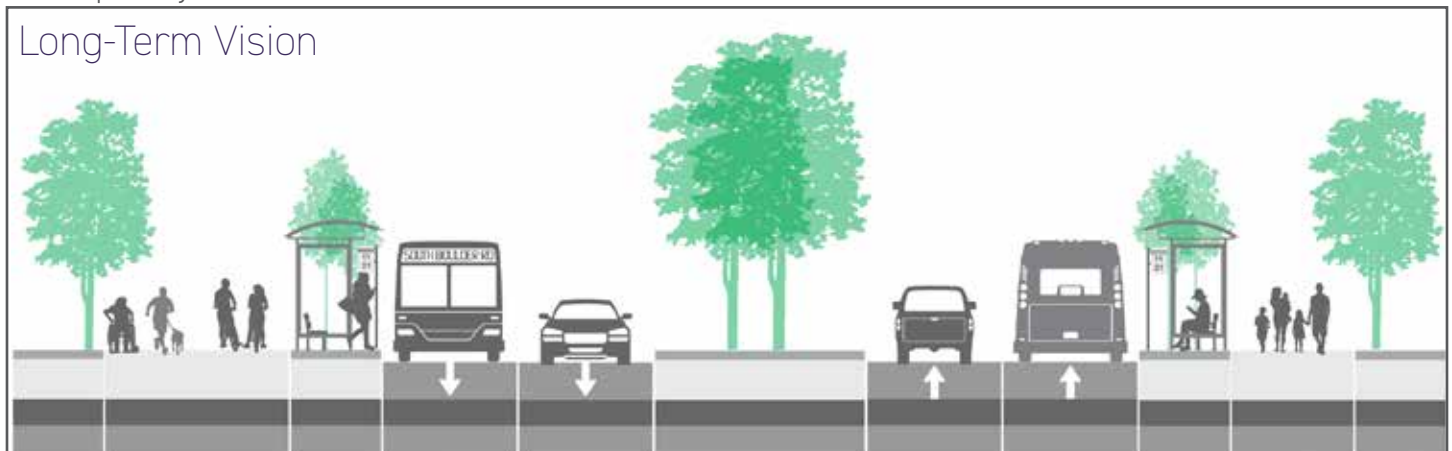
South Boulder Road is a key regional and local corridor that serves neighborhoods and many office and commercial developments along the corridor. Current issues include congestion, safety concerns at intersections, and an uncomfortable bicycle lane.

The City should complete a study in partnership with Boulder County and the Cities of Lafayette and Boulder to develop long-term design and operations for the corridor with a focus on accommodation of improved transit service and multi-modal access and safety improvements.

Implementation

The City should partner with Lafayette, Boulder County and City of Boulder on a regional study that focuses on how to prioritize transit in the corridor. The study should also focus on preferred allocation of the right-of-way and regional consistency along the corridor for all modes of travel. Funding sources for final implementation will likely include multiple sources.

A vision for the corridor that can be utilized for future consideration and project development is provided in the example cross-section and modal priority below.



Key Considerations

- South Boulder Road is identified in the Northwest Area Mobility Study (NAMS) for bus rapid transit. This project will evaluate the best options to accommodate bus service within existing right of way.
- Improvements to bus stops and frequency of transit service can help improve ridership and reduce congestion.
- Eliminating the right-turn lanes along the road would have minimal impact on vehicle mobility, while freeing space for sidewalks and a bikeway along the corridor, and decreasing crossing distances for people walking.
- The community desires additional underpasses along the corridor and several at-grade crossing improvements are currently planned as short-term high-priority projects.

PROJECT 1: CORRIDOR IMPROVEMENTS, CONT.

CP6 & 7: KAYLIX AND CTC CONNECTORS

Summary

Corridor Project 6 is a recommendation for a new street connection completing the gaps in Kaylix Drive between Summit View Drive and South Boulder Road. As these properties redevelop, new streets designed with Great Street principles should be constructed to allow additional connections into the Kestrel neighborhood and Lanterns and Steel Ranch to the north.

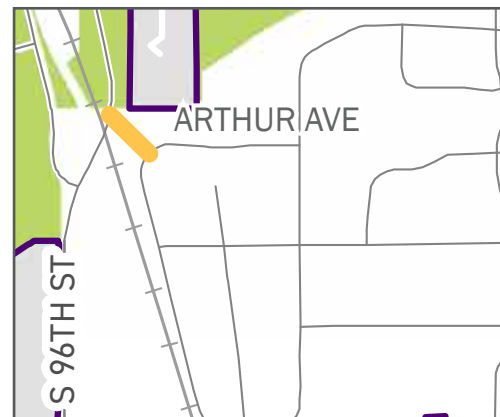
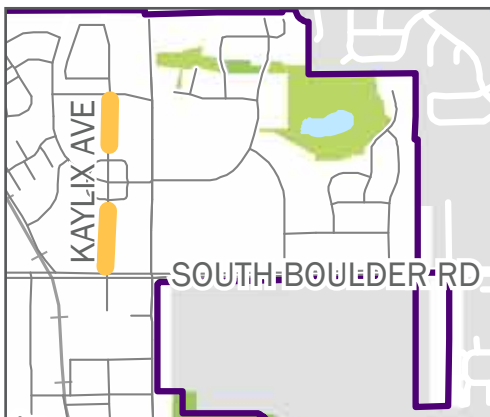
Corridor Project 7 is a new street connecting Arthur Avenue to S 96th St in the CTC. This new connection will allow employees in the CTC a more direct connection to S 96th Street and Downtown Louisville.

Key Considerations

- The Kaylix Connector could develop in phases, beginning with facilities for walking and biking.
- The Kaylix Connector would provide better access to transit stops on South Boulder Road for those in the Kestrel and Steel Ranch neighborhood.
- The CTC Connector should anticipate a future trail connection along the BNSF railroad alignment or multi-use path along S 96th Street and provide pedestrian and bicycling access to these regional trail corridors.

Implementation

Funding and right of way for improvements included in these recommendations could come from private redevelopment on the properties adjacent to these connections. The City should continue to work with the property owners to determine appropriate timing and cost sharing to complete these connections.

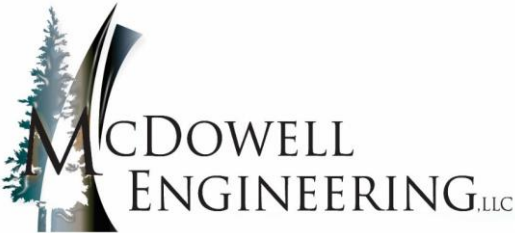
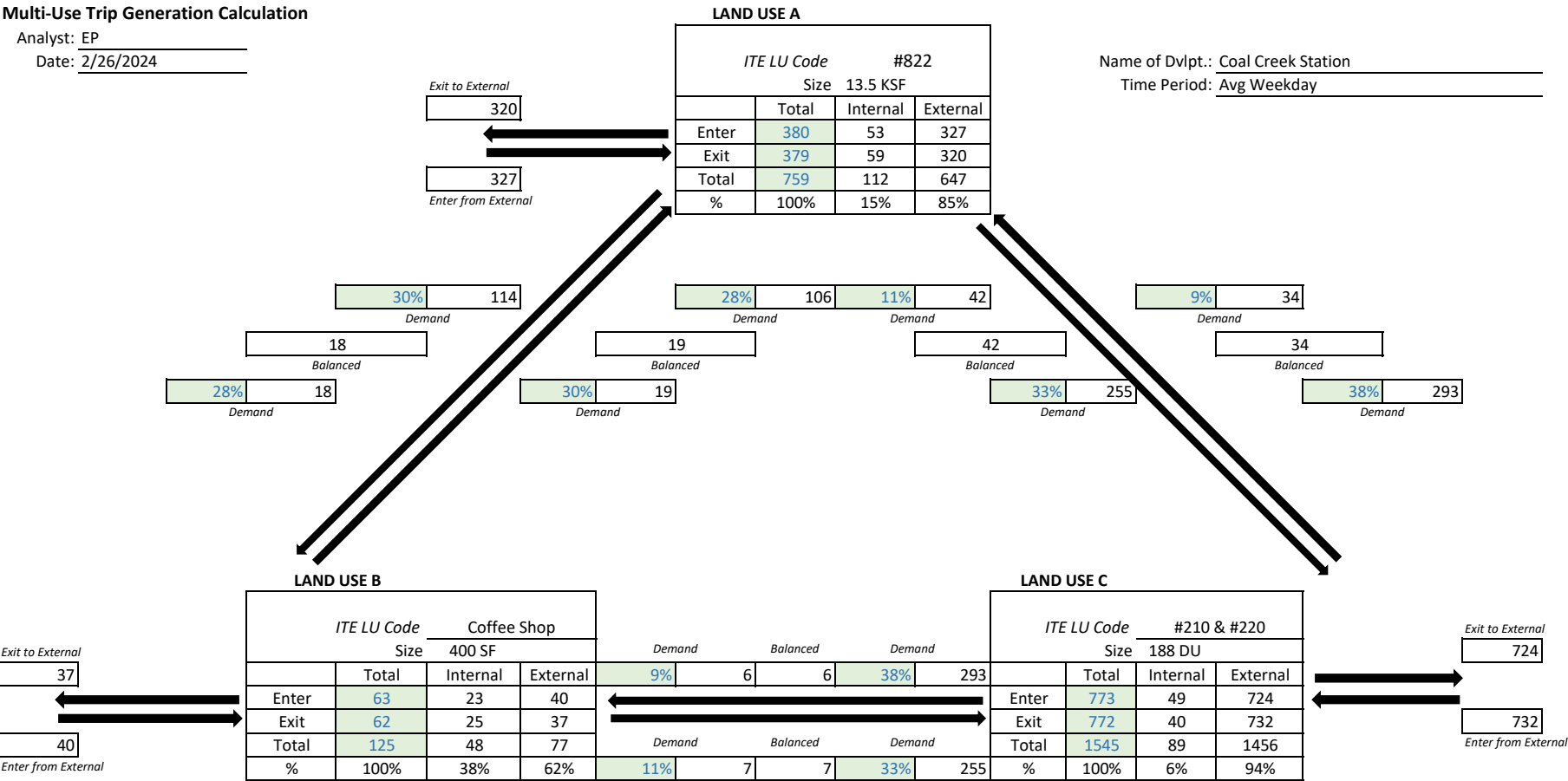


Appendix H: Internal Reduction Calculations

Multi-Use Trip Generation Calculation

Analyst: EP
Date: 2/26/2024

Name of Dvlpt.: Coal Creek Station
Time Period: Avg Weekday



Internal Trip Reduction Calculation Model

Analyst: EP

Date: 2/26/2024

LAND USE A

ITE LU Code #822			
Size 13.5 KSF			
	Total	Internal	External
Enter	48	8	40
Exit	48	9	39
Total	96	17	79
%	100%	18%	82%

Name of Dvlpt.: Coal Creek Station

Time Period: AM Peak

Exit to External
39

40
Enter from External

29% 14
Demand

6
Balanced

31% 6
Demand

31% 15
Demand

5
Balanced

29% 5
Demand

7% 3
Demand

3
Balanced

37% 12
Demand

5% 2
Demand

2
Balanced

34% 33
Demand

LAND USE B

ITE LU Code Coffee Shop			
Size 400 SF			
	Total	Internal	External
Enter	19	7	12
Exit	18	6	12
Total	37	13	24
%	100%	35%	65%

Exit to External
12

12
Enter from External

Demand Balanced Demand

5% 1 1 34% 33

Demand Balanced Demand

7% 1 1 37% 12

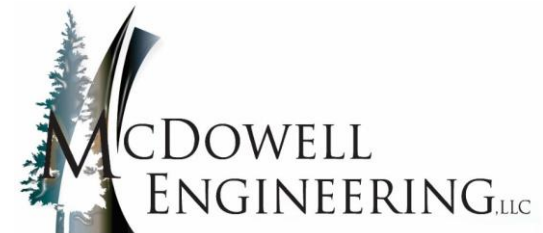
LAND USE C

ITE LU Code #210 & #220			
Size 188 DU			
	Total	Internal	External
Enter	32	5	27
Exit	96	3	93
Total	128	8	120
%	100%	6%	94%

Exit to External
27

93
Enter from External

Net External Trips for Multi-Use Development				
	LAND A	LAND B	LAND C	Total
Enter	40	12	27	79
Exit	39	12	93	144
Total	79	24	120	223
Single Use Trip Gen.	96	37	128	261
				12.8%



Internal Trip Reduction Calculation Model

Analyst: EP

Date: 2/26/2024

LAND USE A

ITE LU Code		#822	
		Size 13.5 kSF	
	Total	Internal	External
Enter	92	10	82
Exit	78	11	67
Total	170	21	149
%	100%	12%	88%

Name of Dvlpt.: Coal Creek Station

Time Period: PM Peak

Exit to External
67

82
Enter from External

20% 16
Demand

1
Balanced

20% 1
Demand

20% 18 12% 9
Demand Demand

1
Balanced

20% 1
Demand

9
Balanced

31% 32
Demand

9% 8
Demand

8
Balanced

53% 32
Demand

LAND USE B

ITE LU Code		Coffee Shop	
		Size 400sf	
	Total	Internal	External
Enter	7	2	5
Exit	7	2	5
Total	14	4	10
%	100%	29%	71%

Exit to External
5

5
Enter from External

Demand Balanced Demand
9% 1 1 53% 32

Demand Balanced Demand
12% 1 1 31% 32

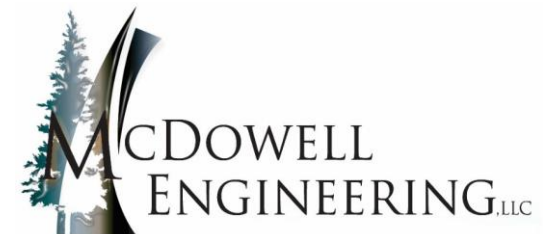
LAND USE C

ITE LU Code		#210 & #220	
		Size 188 DU	
	Total	Internal	External
Enter	103	10	93
Exit	61	9	52
Total	164	19	145
%	100%	12%	88%

Exit to External
93

52
Enter from External

Net External Trips for Multi-Use Development				
	LAND A	LAND B	LAND C	Total
Enter	82	5	93	180
Exit	67	5	52	124
Total	149	10	145	304
Single Use Trip Gen.	170	14	164	348
				12.9%



Internal Trip Reduction Calculation Model

Analyst: EP

Date: 2/26/2024

LAND USE A

ITE LU Code		#822	
		Size 13.5 kSF	
	Total	Internal	External
Enter	43	6	37
Exit	41	7	34
Total	84	13	71
%	100%	15%	85%

Name of Dvlpt.: Coal Creek Station

Time Period: SAT Peak

Exit to External
34

37
Enter from External

20% 8
Demand

2
Balanced

20% 2
Demand

20% 9
Demand

2
Balanced

20% 2
Demand

12% 5
Demand

5
Balanced

31% 20
Demand

9% 4
Demand

4
Balanced

53% 31
Demand

LAND USE B

ITE LU Code		Coffee Shop	
		Size 400sf	
	Total	Internal	External
Enter	10	3	7
Exit	11	4	7
Total	21	7	14
%	100%	33%	67%

Exit to External
7

7
Enter from External

Demand Balanced Demand

9% 1 1 53% 31

Demand Balanced Demand

12% 1 1 31% 20

LAND USE C

ITE LU Code		#210 & #220	
		Size 188 DU	
	Total	Internal	External
Enter	65	6	59
Exit	58	5	53
Total	123	11	112
%	100%	9%	91%

Exit to External
59

53
Enter from External

Net External Trips for Multi-Use Development				
	LAND A	LAND B	LAND C	Total
Enter	37	7	59	103
Exit	34	7	53	94
Total	71	14	112	197
Single Use Trip Gen.	84	21	123	228
				12.5%

