

November 17, 2023



Shea Homes  
9380 Station Street, Suite 600  
Lone Tree, CO 80124

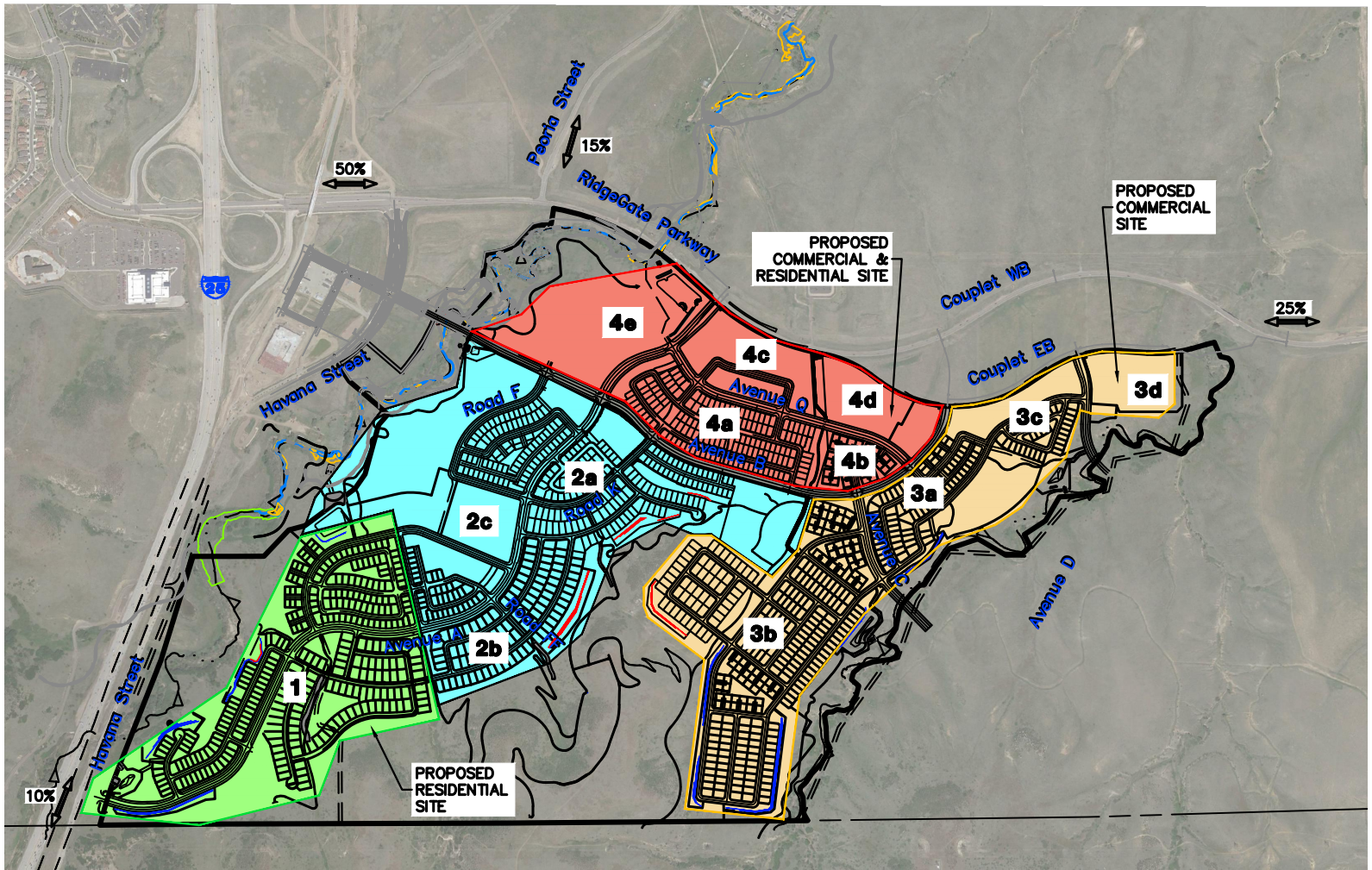
**Re: Traffic Letter for Revised Ridgeway Southwest Village Site Plan, a Supplement to Ridgeway – Southwest Village Traffic Impact Study in Lone Tree, CO dated October 22, 2020**

To Whom It May Concern:

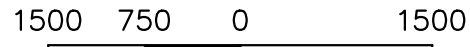
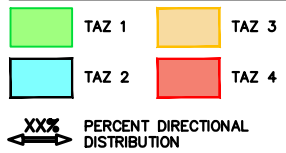
This Traffic Compliance Letter has been prepared to provide a supplement to the approved *Ridgeway – Southwest Village Traffic Impact Study (TIS)* dated October 22, 2020 and prepared by JR Engineering. The scope of this letter will be limited to the effects of the site generated traffic from three recent site plans:

- The site at the southwest corner of RidgeGate Parkway and Avenue B (High Note Avenue)
- The site at the southeast corner of RidgeGate Parkway and Avenue D (Rhapsody Road)
- The site northeast of Havana Street and Avenue A (Lyric Street)

The locations of these three sites are shown in **Figure 1**. The amended preliminary site plan for Ridgeway Southwest Village dated **November 17, 2023** is included as an attachment to this letter.



**LEGEND**



ORIGINAL SCALE: 1" = 1500'

FIGURE 1 – TAZ'S AND DISTRIBUTION OF SITE GENERATED TRAFFIC  
 RIDGEGATE SOUTHWEST VILLAGE  
 PAGE 2  
 PROJ. NO. 15950.00



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### Site Southwest of RidgeGate & Avenue B

The site at the southwest corner of Ridgegate Parkway and Avenue B (High Note Avenue) was originally studied as 85,000 SF of shopping center land use (ITE 820). The revised site plan is proposed as 21,000 SF of shopping center land use and 130 dwelling units of low-rise multi-family residential land use (ITE 220). The square footage of the shopping center is based on 15% floor area ratio (FAR), consistent with the original site plan. The number of dwelling units is a conservative estimate based on the density of other multi-family sites in Ridgegate Southwest Village. Trip generation reports are attached to this letter.

A comparison of trip generation values is shown in the table below:

Site Plan	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Original	5,383	194	482
Revised	3,022	223	246
Difference	-2,361	+29	-236

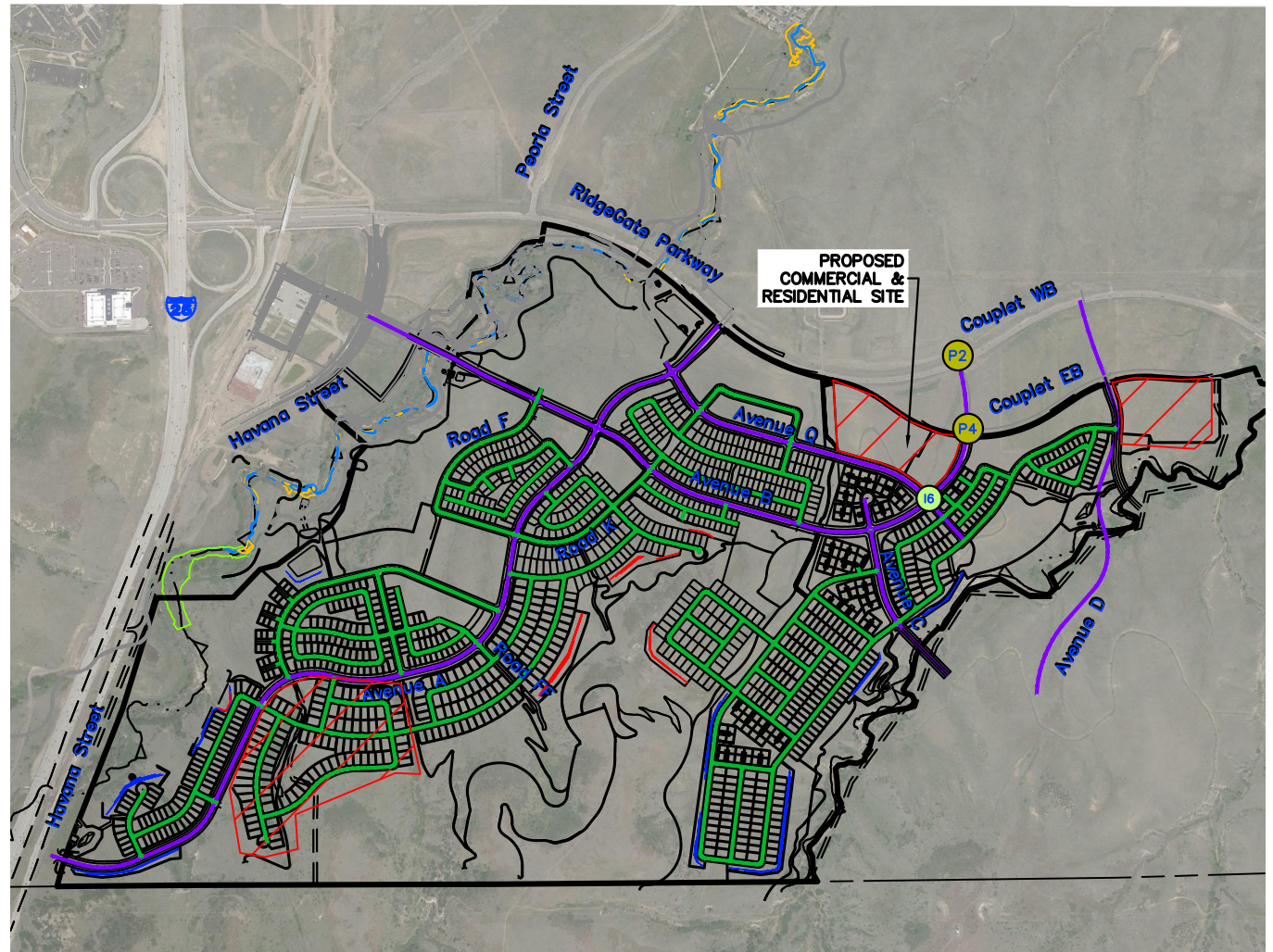
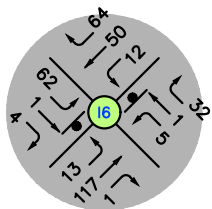
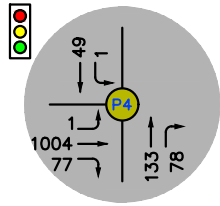
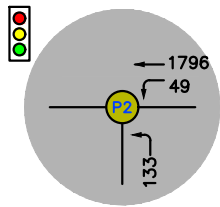
The revised site plan generates significantly fewer trips daily and in the PM peak hour. AM peak hour trips are slightly higher with the revised site plan. Therefore, JR did additional analysis on nearby intersections in the AM peak hour to ensure that the additional trips will not adversely affect traffic operations. The following intersections were analyzed:

- P2 – RidgeGate WB Couplet & Avenue B (High Note Avenue)
- P4 – RidgeGate EB Couplet & Avenue B (High Note Avenue)
- I6 – Avenue B (High Note Avenue) & Avenue Q (Octave Avenue)

JR routed the additional AM peak hour trips through the above intersections, and then added those trips to the volumes in the approved TIS. The new traffic volumes are shown in **Figure 2**.

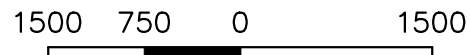






**LEGEND**

- |    |                                  |  |                   |
|----|----------------------------------|--|-------------------|
|    | PROPOSED INTERSECTION - EXTERNAL |  | COLLECTOR ROAD    |
|    | PROPOSED INTERSECTION - INTERNAL |  | LOCAL ROAD        |
| XX | AM PEAK HOUR TRIP DISTRIBUTION   |  | PROJECT SITE      |
|    | SIGNAL CONTROL                   |  | STOP SIGN CONTROL |



ORIGINAL SCALE: 1" = 1500'

FIGURE 2 – YEAR 2026  
TOTAL TRAFFIC  
RIDGEGATE SOUTHWEST VILLAGE  
PAGE 4  
PROJ. NO. 15950.00



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The table below shows levels of service (LOS) for the selected intersections in the Year 2026, comparing results from the approved TIS with results from the revised site plan:

Intersection	Movement	AM Peak Hour LOS	
		Approved TIS	Revised Site
P2 – RidgeGate WB Couplet & High Note Avenue	WB Left	A	A
	WB Through	A	A
	NB Left	A	A
P4 – RidgeGate EB Couplet & High Note Avenue	EB Left	A	A
	EB Through	A	A
	EB Right	A	A
	NB Through	D	D
	NB Right	C	C
	SB Left	C	C
	SB Through	D	D
I6 – High Note Avenue & Octave Avenue	EB Approach	B	B
	WB Approach	A	A
	NB Approach	A	A
	SB Approach	A	A

The revised site plan has little effect on the levels of service at Intersections P2, P4, and I6. All movements are considered acceptable because they do not exceed the established threshold of LOS D.

Synchro HCM 6<sup>th</sup> Edition reports are included in the attachments.



### Site Southeast of RidgeGate & Avenue D

This site was not included in the approved traffic impact study. Therefore, additional analysis was done to ensure the trips generated by the site will not adversely affect traffic operations.

The site is proposed as 10 acres of commercial land use. It was studied as 66,000 SF of shopping center space (ITE 820). This represents 15% FAR, which is consistent with the other commercial site in Ridgegate Southwest Village. Trip generation reports are attached to this letter.

The trip generation of the site is summarized in the table below:

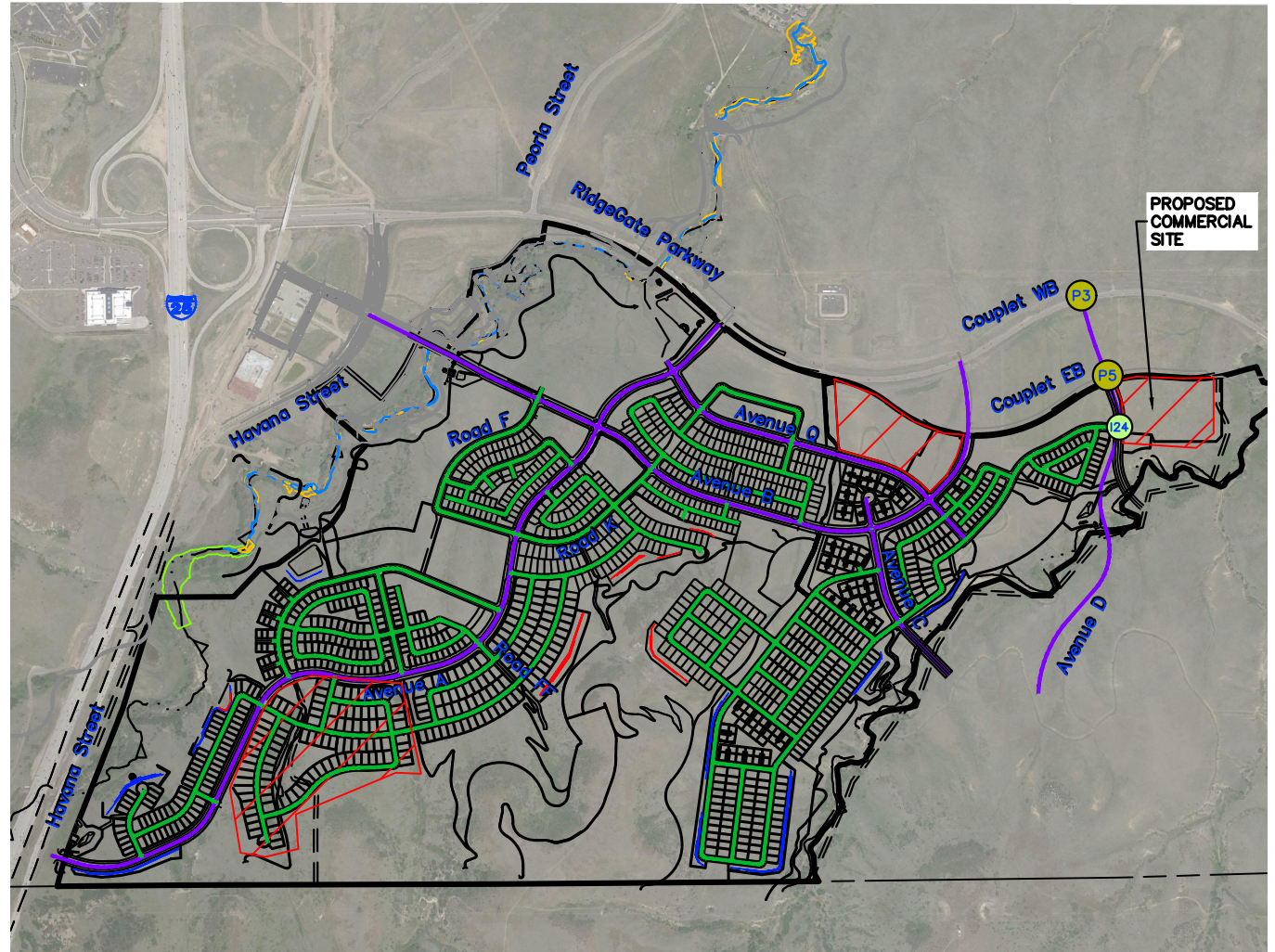
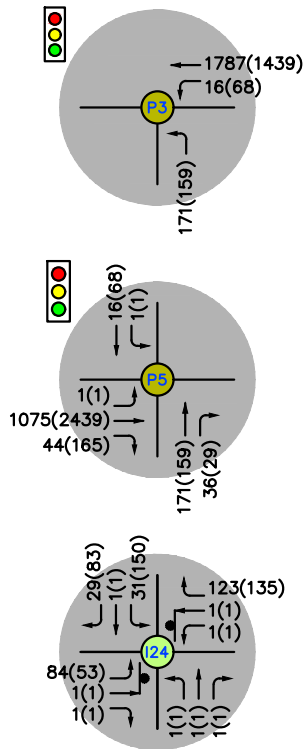
Land Use	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
66,000 SF Shopping Center (ITE 820)	4,532	185	400

JR routed site generated trips through the intersections that are expected to be most impacted by the additional traffic. JR then analyzed the intersections for level of service in the Year 2026. The following intersections were analyzed:

- P3 – RidgeGate WB Couplet & Avenue D (Rhapsody Road)
- P5 – RidgeGate EB Couplet & Avenue D (Rhapsody Road)
- I24 – Avenue D (Rhapsody Road) & Site Access

JR routed the site generated trips through the above intersections, and then added those trips to the volumes in the approved TIS. The new traffic volumes are shown in **Figure 3**. It should be noted that the site has a right-in, right-out access along Ridgegate Parkway. 50% of trips entering from the west and exiting to the east were routed through this RIRO access.





**LEGEND**








-  PROPOSED INTERSECTION - EXTERNAL
-  PROPOSED INTERSECTION - INTERNAL
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
-  SIGNAL CONTROL
-  COLLECTOR ROAD
-  LOCAL ROAD
-  PROJECT SITE
-  STOP SIGN CONTROL



FIGURE 3 – YEAR 2026  
TOTAL TRAFFIC  
RIDGEGATE SOUTHWEST VILLAGE  
PAGE 7  
PROJ. NO. 15950.00



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The table below shows levels of service for the selected intersections in the Year 2026, comparing results from the approved TIS with results from the analysis with the shopping center site:

Intersection	Movement	AM Peak Hour LOS		PM Peak Hour LOS	
		Approved TIS	Approved TIS + Shopping Center	Approved TIS	Approved TIS + Shopping Center
P3 – RidgeGate WB Couplet & Rhapsody Road	WB Left	A	A	A	A
	WB Through	A	A	A	A
	NB Left	A	A	A	A
P5 – RidgeGate EB Couplet & Rhapsody Road	EB Left	A	A	A	A
	EB Through	A	A	A	C
	EB Right	A	A	A	A
	NB Through	D	D	D	D
	NB Right	C	C	D	D
	SB Left	D	D	C	C
I24 – Rhapsody Road & Site Access	SB Through	D	D	C	C
	EB Approach	B	B	B	C
	WB Approach	N/A	A	N/A	A
	NB Approach	A	A	A	A
	SB Approach	A	A	A	A

The addition of the shopping center site has little effect on the levels of service at Intersections P3 and I24. The eastbound through movement at Intersection P5 worsens to LOS C in the PM peak hour. However, this is considered acceptable because it does not exceed the established threshold of LOS D.

Synchro HCM 6<sup>th</sup> Edition reports are included in the attachments.



### Site Northeast of Havana Street and Avenue A

The site at the northeast corner of Havana Street and Avenue A was originally studied as 303 single family detached dwelling units land use (ITE 210). The revised plan is proposed as 309 single family detached dwelling units land use (ITE 210). Trip generation reports are attached to this letter.

A comparison of trip generation values is shown in the table below:

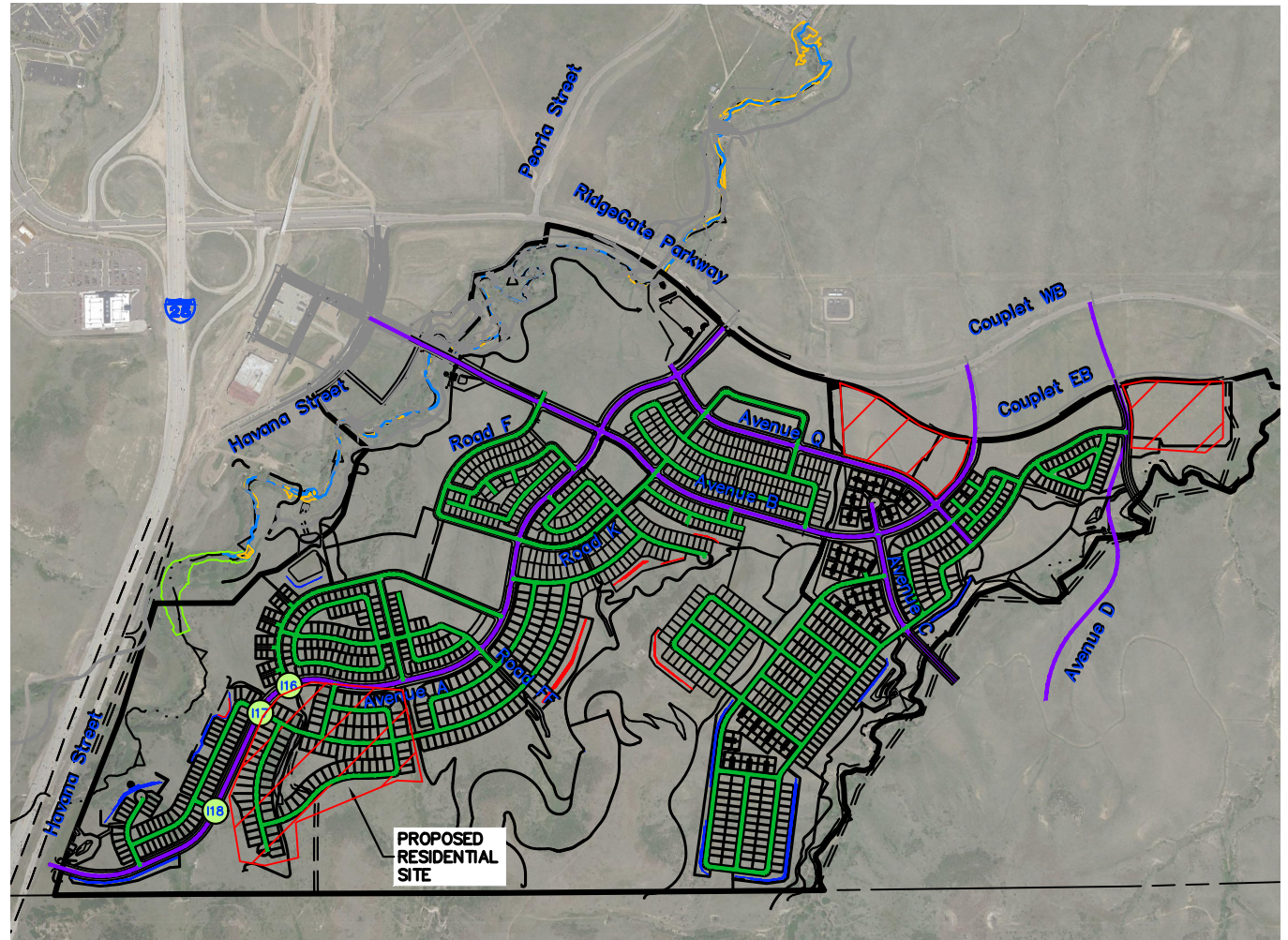
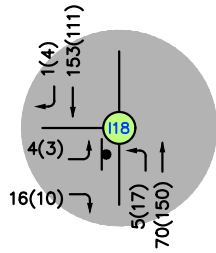
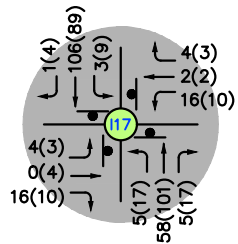
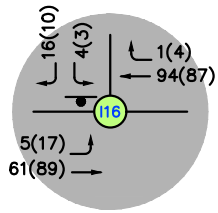
Site Plan	Daily Trips	AM Peak Hour Trips	PM Peak Hour Trips
Original	2,883	220	294
Revised	2,936	224	300
Difference	+53	+4	+6

The revised site plan generates additional daily trips, AM Peak Hour trips, and PM Peak Hour trips. However, the increase to Peak Hour trips is not expected to adversely affect traffic operations within Zone 1. Because the revised site plan generates a 2% increase in trips, JR rerouted site generated trips through the following intersections:

- I16 – Avenue A (High Note Avenue) & Copperton Road
- I17 – Avenue A (High Note Avenue) & Tenor Trail
- I18 – Avenue A (High Note Avenue) & Adage Road

Both the 2% increase in site generated trips and rerouting yielded minimal increases to trips going through these intersections. As such, JR did not perform analysis on these intersections due to the negligible impact of these changes. The site layout and rerouted traffic volumes are shown in **Figure 4**.





**LEGEND**

- PROPOSED INTERSECTION - EXTERNAL
- PROPOSED INTERSECTION - INTERNAL
- XX (XX) AM (PM) PEAK HOUR TRIP DISTRIBUTION
- SIGNAL CONTROL
- COLLECTOR ROAD
- LOCAL ROAD
- PROJECT SITE
- STOP SIGN CONTROL



FIGURE 4 – YEAR 2026  
TOTAL TRAFFIC  
RIDGEGATE SOUTHWEST VILLAGE  
PAGE 7  
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## **Conclusion**

JR concludes that the approved traffic impact study and roadway improvements are not adversely impacted by the revised site plans.

If you have any questions or comments, feel free to contact me at [efarney@jrengineering.com](mailto:efarney@jrengineering.com) or 303-267-6183.

Sincerely,  
JR Engineering, LLC

Eli Farney, PE, PTOE  
Client Manager – Public Works

Attachment: Ridgegate Southwest Village Preliminary Plan – Overall Site Plan Amendment  
Trip Generation Summary Reports  
Land Use Detail Reports  
Synchro HCM 6<sup>th</sup> Edition Reports





SUMMARY OF REVISIONS WITH THIS AMENDMENT:  
 • REVISIONS TO LAND USE – TRACTS CB, CS, DF, DG  
 • REVISIONS TO TRAIL ALIGNMENTS, RETAINING WALLS

# RIDGEGATE SOUTHWEST VILLAGE PRELIMINARY PLAN

A PORTION OF THE RIDGEGATE PLANNED DEVELOPMENT DISTRICT, EAST SIDE PROPERTY  
 A PART OF SECTION 14, SECTION 22, SECTION 23, AND SECTION 24, T6S, R67W  
 OF THE 6TH P.M., CITY OF LONE TREE, COUNTY OF DOUGLAS, STATE OF COLORADO  
 698.82 ACRES - 1,207 RESIDENTIAL S.F.D. LOTS AND 111 TRACTS- PP20-37R

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, OR ENGINEERING APPROVES THEIR USE, THESE DRAWINGS ARE DESIGNATED BY WRITTEN AUTHORIZATION.

PREPARED FOR  
**SHEA HOMES**  
 9380 STATION STREET  
 SUITE 600  
 LONE TREE, CO 80124  
 (303) 791-8180

PREPARED BY  
**J.R. ENGINEERING**  
 A Westrian Company  
  
 Centennial 300-740-9888 • Colorado Springs 719-583-2593  
 Fort Collins 970-491-9888 • www.jrengineering.com

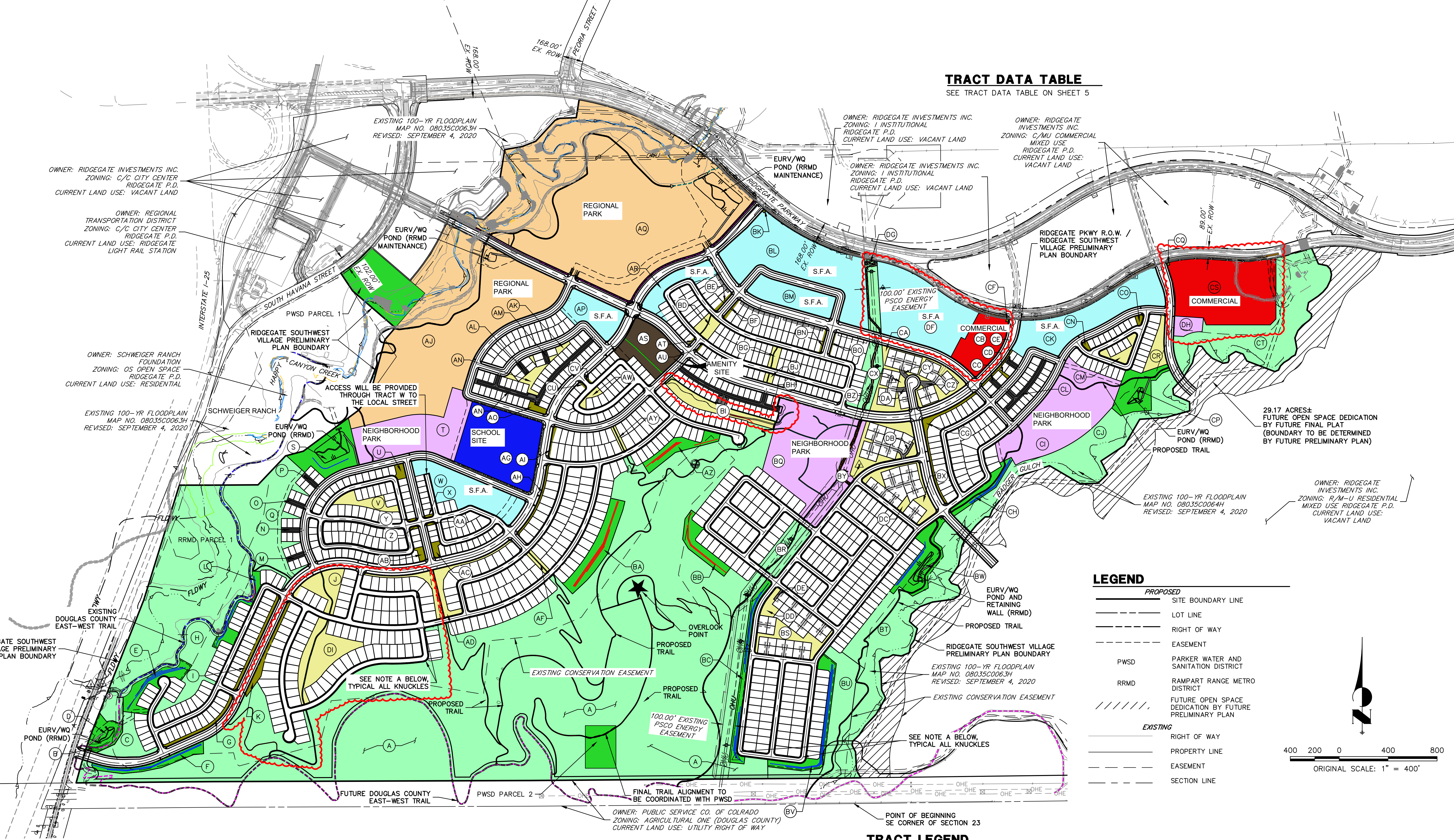
NO.	REVISION	DATE
1	1ST SUBMITTAL	7/13/20
2	2ND SUBMITTAL	8/27/20
3	3RD SUBMITTAL	10/28/20
4	4TH SUBMITTAL	11/3/20
5	PRELIMINARY PLAN AMENDMENT	4/14/23

H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1"=400'	N/A	11/20/23	JCS	CGM	JCS

RIDGEGATE SOUTHWEST VILLAGE  
 PRELIMINARY PLAN  
 OVERALL SITE PLAN

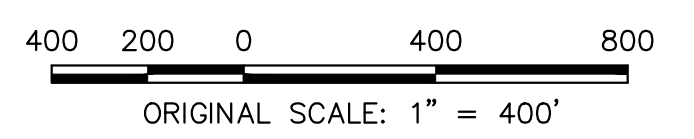
### TRACT DATA TABLE

SEE TRACT DATA TABLE ON SHEET 5



### LEGEND

- PROPOSED**
- SITE BOUNDARY LINE
  - LOT LINE
  - RIGHT OF WAY
  - EASEMENT
  - PWSD
  - RRMD
  - FUTURE OPEN SPACE DEDICATION BY FUTURE PRELIMINARY PLAN
- EXISTING**
- RIGHT OF WAY
  - PROPERTY LINE
  - EASEMENT
  - SECTION LINE



### RETAINING WALL LEGEND

- RRMD MAINTAINED RETAINING WALL
- MASTER HOA MAINTAINED RETAINING WALL

### MAINTENANCE RESPONSIBILITY


- RAMPART RANGE METRO DISTRICT
- MASTER HOA

### TRACT LEGEND

- HOA ENHANCED LANDSCAPE AREA
- HOA LANDSCAPE AREA
- OPEN SPACE (PUBLIC)
- REGIONAL PARK
- NEIGHBORHOOD PARK
- COMMERCIAL
- S.F.A.
- INSTITUTIONAL (SCHOOL)
- PRIVATE ALLEY
- VILLAGE RECREATION AND AMENITY CENTER (HOA)
- UTILITY / INFRASTRUCTURE

NOTE:  
 TRACTS R, AE, AX, AV, AND BP NOT USED

NOTE A:  
 KNUCKLES WILL BE EVALUATED FOR SNOW STORAGE AT BENDS DURING THE FINAL PLATTING PROCESS.

PRELIMINARY PLAN  
 RIDGEGATE SOUTHWEST VILLAGE  
 PREPARED BY:  
**J.R. ENGINEERING**  
 A Westrian Company  
 PREPARED FOR:  
  
 SUBMITTAL DATE: 11/20/2023



- SUMMARY OF REVISIONS WITH THIS AMENDMENT:
- REVISIONS TO LAND USE – TRACTS J, CB, CS
- ADDED TRACTS DF, DG, DH, DI
- REVISIONS TO TRACT ACREAGE PER SITE PLAN AND LAND USE CHANGES
- OPEN SPACE AND PARK CALCULATIONS REVISED PER NEW LAND USE AND SITE LAYOUT

# RIDGEGATE SOUTHWEST VILLAGE PRELIMINARY PLAN

**A PORTION OF THE RIDGEGATE PLANNED DEVELOPMENT DISTRICT, EAST SIDE PROPERTY  
A PART OF SECTION 14, SECTION 22, SECTION 23, AND SECTION 24, T6S, R67W  
OF THE 6TH P.M., CITY OF LONE TREE, COUNTY OF DOUGLAS, STATE OF COLORADO  
698.82 ACRES - 1,207 RESIDENTIAL S.F.D. LOTS AND 111 TRACTS- PP20-37R**

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## TRACT DATA TABLE

OUTLOTS/ TRACTS	ACREAGE	OWNERSHIP	MAINTENANCE	USE	Preliminary Plan - ACREAGE BY USE												
					HOA ENHANCED LANDSCAPE AREA	HOA LANDSCAPE AREA	OPEN SPACE (PUBLIC)	REGIONAL PARK	NEIGHBORHOOD PARK	COMMERCIAL	S.F.A.	INSTITUTIONAL (SCHOOL)	PRIVATE ALLEY	VRAC (HOA)	UTILITY/ INFRASTRUCTURE		
A	139.04	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	139.04	..	..	..	..	..	..	..	..	..	..
B	0.01	HOA	HOA	HOA LANDSCAPE AREA	..	01	..	..	..	..	..	..	..	..	..	..	..
C	2.45	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	2.45	..	..	..	..	..	..	..	..	..	..
D	1.28	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	..	1.28	..
E	1.56	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	..	1.56	..
F	1.18	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	..	1.18	..
G	0.36	HOA	HOA	HOA LANDSCAPE AREA	..	36	..	..	..	..	..	..	..	..	..	..	..
H	3.10	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	3.10	..	..	..	..	..	..	..	..	..	..
I	0.42	HOA	HOA	HOA LANDSCAPE AREA	..	42	..	..	..	..	..	..	..	..	..	..	..
J	1.53	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	..	1.53	..	..	..	..	..	..	..	..	..	..
K	0.56	HOA	HOA	HOA LANDSCAPE AREA	..	56	..	..	..	..	..	..	..	..	..	..	..
L	0.81	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	81	..	..
M	0.14	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	14	..	..	..	..	..
N	0.14	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	14	..	..	..	..	..
O	0.14	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	14	..	..	..	..	..
P	0.14	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	14	..	..	..	..	..
Q	7.81	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	7.81	..	..	..	..	..	..	..	..	..	..
S	3.26	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	..	3.26	..
T	7.09	SSPRD	SSPRD	NEIGHBORHOOD PARK	..	..	..	7.09	..	..	..	..	..	..	..	..	..
U	0.21	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	21	..	..	..	..	..
V	0.93	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	93	..	..	..	..	..	..	..	..	..	..	..
W	4.50	RGI	RGI	S.F.A.	..	..	..	..	..	4.50	..	..	..	..	..	..	..
X	0.03	HOA	HOA	HOA LANDSCAPE AREA	..	03	..	..	..	..	..	..	..	..	..	..	..
Y	0.03	HOA	HOA	HOA LANDSCAPE AREA	..	03	..	..	..	..	..	..	..	..	..	..	..
Z	0.03	HOA	HOA	HOA LANDSCAPE AREA	..	03	..	..	..	..	..	..	..	..	..	..	..
AA	0.03	HOA	HOA	HOA LANDSCAPE AREA	..	03	..	..	..	..	..	..	..	..	..	..	..
AB	0.15	HOA	HOA	HOA LANDSCAPE AREA	..	15	..	..	..	..	..	..	..	..	..	..	..
AC	0.16	HOA	HOA	HOA LANDSCAPE AREA	..	16	..	..	..	..	..	..	..	..	..	..	..
AD	1.64	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	164	..	..	..	..	..	..	..	..	..	..	..
AE	0.27	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	27	..	..	..	..	..	..	..	..	..	..	..
AG	8.00	ColT/DCSD	ColT/DCSD	SCHOOL SITE	..	..	..	..	8.00	..	..	..	..	..	..	..	..
AH	0.22	HOA	HOA	HOA LANDSCAPE AREA	..	22	..	..	..	..	..	..	..	..	..	..	..
AI	0.08	HOA	HOA	HOA LANDSCAPE AREA	..	08	..	..	..	..	..	..	..	..	..	..	..
AJ	28.80	SSPRD	SSPRD	REGIONAL PARK	..	..	28.80	..	..	..	..	..	..	..	..	..	..
AK	0.17	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	17	..	..	..	..	..	..	..	..	..	..	..
AL	0.11	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	11	..	..	..	..	..
AM	0.10	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	10	..	..	..	..	..
AN	1.82	HOA	HOA	PRIVATE ALLEY	..	57	..	..	..	..	..	182	..	..	..	..	..
AO	0.19	HOA	HOA	HOA LANDSCAPE AREA	..	19	..	..	..	..	..	..	..	..	..	..	..
AP	2.62	RGI	RGI	S.F.A.	..	..	..	..	2.62	..	..	..	..	..	..	..	..
AQ	49.73	SSPRD	SSPRD	REGIONAL PARK	..	..	49.73	..	..	..	..	..	..	..	..	..	..
AR	1.92	RGI	RGI	S.F.A.	..	..	..	..	1.92	..	..	..	..	..	..	..	..
AS	3.21	HOA	HOA	VRAC (HOA)	..	..	..	..	..	..	..	321	..	..	..	..	..
AT	0.02	HOA	HOA	HOA LANDSCAPE AREA	..	02	..	..	..	..	..	..	..	..	..	..	..
AU	0.02	HOA	HOA	HOA LANDSCAPE AREA	..	02	..	..	..	..	..	..	..	..	..	..	..
AW	0.22	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	22	..	..	..	..	..	..	..	..	..	..	..
AY	0.20	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	20	..	..	..	..	..	..	..	..	..	..	..
AZ	1.35	MHOA	MHOA	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	1.35	..	..
BA	2.41	MHOA	MHOA	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	2.41	..	..
BB	1.37	MHOA	MHOA	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	1.37	..	..
BC	1.75	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	1.75	..	..
BD	0.57	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	57	..	..	..	..	..	..	..	..	..	..	..
BE	0.07	HOA	HOA	HOA LANDSCAPE AREA	..	07	..	..	..	..	..	..	..	..	..	..	..
BF	0.07	HOA	HOA	HOA LANDSCAPE AREA	..	07	..	..	..	..	..	..	..	..	..	..	..
BG	0.30	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	30	..	..	..	..	..	..	..	..	..	..	..
BH	1.06	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	106	..	..	..	..	..
BI	1.83	MHOA	MHOA	HOA ENHANCED LANDSCAPE AREA	..	183	..	..	..	..	..	..	..	..	..	..	..
BJ	0.13	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	13	..	..	..	..	..	..	..	..	..	..	..
BK	0.01	HOA	HOA	HOA LANDSCAPE AREA	..	01	..	..	..	..	..	..	..	..	..	..	..
BL	10.82	RGI	RGI	S.F.A.	..	..	..	..	10.82	..	..	..	..	..	..	..	..
BM	2.91	RGI	RGI	S.F.A.	..	..	..	..	2.91	..	..	..	..	..	..	..	..
BN	0.06	HOA	HOA	HOA LANDSCAPE AREA	..	06	..	..	..	..	..	..	..	..	..	..	..
BO	0.03	HOA	HOA	HOA LANDSCAPE AREA	..	03	..	..	..	..	..	..	..	..	..	..	..
BQ	12.23	SSPRD	SSPRD	NEIGHBORHOOD PARK	..	..	12.23	..	..	..	..	..	..	..	..	..	..
BR	1.90	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	1.90	..	..	..	..	..	..	..	..	..	..
BS	1.13	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	113	..	..	..	..	..	..	..	..	..	..	..
BT	11.76	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	11.76	..	..	..	..	..	..	..	..	..	..
BV	4.63	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	4.63	..	..	..	..	..	..	..	..	..	..
BW	1.75	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	1.75	..	..
BX	0.98	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	98	..	..	..	..	..	..	..	..	..	..	..
BY	1.43	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	143	..	..	..	..	..	..	..	..	..	..	..
BZ	1.61	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	1.61	..	..	..	..	..	..	..	..	..	..

OUTLOTS/ TRACTS	ACREAGE	OWNERSHIP	MAINTENANCE	USE	ACREAGE BY USE												
					HOA ENHANCED LANDSCAPE AREA	HOA LANDSCAPE AREA	OPEN SPACE (PUBLIC)	REGIONAL PARK	NEIGHBORHOOD PARK	COMMERCIAL	S.F.A.	INSTITUTIONAL (SCHOOL)	PRIVATE ALLEY	VRAC (HOA)	UTILITY/ INFRASTRUCTURE		
CA	1.76	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	1.76	..	..	..	..	..	..	..	..	..	..	..
CB	3.18	RGI	RGI	COMMERCIAL	..	..	..	..	..	..	..	3.18	..	..	..	..	..
CC	0.10	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	..	10	..	..	..	..
CD	0.17	HOA	HOA	HOA LANDSCAPE AREA	..	17	..	..	..	..	..	..	..	..	..	..	..
CE	0.10	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	..	10	..	..	..	..
CF	0.01	HOA	HOA	HOA LANDSCAPE AREA	..	01	..	..	..	..	..	..	..	..	..	..	..
CG	0.55	HOA	HOA	HOA LANDSCAPE AREA	..	55	..	..	..	..	..	..	..	..	..	..	..
CH	1.04	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	1.04	..	..
*CI	9.56	SSPRD	SSPRD	NEIGHBORHOOD PARK	..	..	..	9.56	..	..	..	..	..	..	..	..	..
CJ	9.57	ColT	ColT	OPEN SPACE (PUBLIC)	..	..	9.57	..	..	..	..	..	..	..	..	..	..
CK	7.02	RGI	RGI	S.F.A.	..	..	..	..	..	..	..	7.02	..	..	..	..	..
CL	0.57	HOA	HOA	PRIVATE ALLEY	..	..	..	..	..	..	..	..	57	..	..	..	..
CM	0.50	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	50	..	..	..	..	..	..	..	..	..	..	..
CN	0.06	HOA	HOA	HOA LANDSCAPE AREA	..	06	..	..	..	..	..	..	..	..	..	..	..
CO	0.09	HOA	HOA	HOA LANDSCAPE AREA	..	09	..	..	..	..	..	..	..	..	..	..	..
CP	2.35	RRMD	RRMD	UTILITY/INFRASTRUCTURE	..	..	..	..	..	..	..	..	..	..	2.35	..	..
CQ	0.01	HOA	HOA	HOA LANDSCAPE AREA	..	01	..	..	..	..	..	..	..	..	..	..	..
CR	0.93	HOA	HOA	HOA ENHANCED LANDSCAPE AREA	..	93	..	..	..	..	..	..	..	..	..	..	..
CS	10.02	RGI	RGI	COMMERCIAL	..	..	..	..	..	..	..	10.02	..	..	..	..	



## Trip Generation Summary

Alternative: Alternative 1

Phase:

Open Date: 11/8/2023

Project: RidgeGate

Analysis Date: 11/8/2023

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
210	Single Family Detached - Zone 1 309 Dwelling Units		1468	1468	2936		56	168	224		189	111	300
210	Single Family Detached - Zone 2B south 140 Dwelling Units		709	708	1417		26	78	104		88	52	140
210	Single Family Detached - Zone 2A north 271 Dwelling Units		1301	1301	2602		49	148	197		167	98	265
520	Elementary School - Zone 2C - 500 Students 500 Students		441	440	881		181	154	335		41	44	85
210	Single Family Detached - Zone 3A 119 Dwelling Units		610	610	1220		22	67	89		76	44	120
221	Multi Family - Zone 3C 310 Dwelling Units		844	844	1688		27	77	104		80	51	131
251	Senior Living - Zone 3B 308 Dwelling Units		757	757	1514		32	64	96		71	45	116
820	Shopping Center - Zone 3D 66 1000 Sq. Ft. GLA		2266	2266	4532		115	70	185		192	208	400
210	Single Family Detached - Zone 4A 167 Dwelling Units		834	833	1667		31	92	123		105	61	166
220	Multi Family - Zone 4D 130 Dwelling Units		471	471	942		14	47	61		47	28	75
221	Multi Family - Zone 4C 280 Dwelling Units		762	762	1524		24	70	94		73	46	119
251	Retirement - Zone 4B 24 Dwelling Units		80	80	160		5	9	14		10	6	16

\* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

**TRIP GENERATION 10, TRAFFICWARE, LLC**

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
488	Regional Park - 6 Soccer Fields 6 Fields		214	214	428		4	2	6		65	34	99
820	Shopping Center - Zone 4D 21 1000 Sq. Ft. GLA		1040	1040	2080		100	62	162		82	89	171
Unadjusted Volume			11797	11794	23591		686	1108	1794		1286	917	2203
Internal Capture Trips			0	0	0		14	14	28		104	104	208
Pass-By Trips			0	0	0		0	0	0		56	56	112
Volume Added to Adjacent Streets			11797	11794	23591		672	1094	1766		1126	757	1883

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 2 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 9 Percent

\* - Custom rate used for selected time period.

**Detailed Land Use Data**

For 309 Dwelling Units of Single Family Detached - Zone 1  
( 210 ) Single-Family Detached Housing

Open Date: 11/8/2023  
Analysis Date: 11/8/2023

Project: RidgeGate

<u>Day / Period</u>	<u>Total Trips</u>	<u>Pass-By Trips</u>	<u>Avg Rate</u>	<u>Min Rate</u>	<u>Max Rate</u>	<u>Std Dev</u>	<u>Avg Size</u>	<u>% Enter</u>	<u>% Exit</u>	<u>Use Eq.</u>	<u>Equation</u>	<u>R2</u>
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	2936	0	9.44	4.81	19.39	2.1	264	50	50	True	$\ln(T) = 0.92 \ln(X) + 2.71$	0.95
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	224	0	0.74	0.33	2.27	0.27	219	25	75	True	$T = 0.71(X) + 4.8$	0.89
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	300	0	0.99	0.44	2.98	0.31	242	63	37	True	$\ln(T) = 0.96 \ln(X) + 0.2$	0.92
Saturday Average Daily Trips Source : Trip Generation Manual 10th Edition	2834	0	9.54	5.32	15.25	2.17	207	50	50	True	$\ln(T) = 0.94 \ln(X) + 2.56$	0.91
Saturday Peak Hour of Generator Source : Trip Generation Manual 10th Edition	278	0	0.93	0.64	1.75	0.26	188	54	46	True	$T = 0.84(X) + 17.99$	0.87



**Detailed Land Use Data**  
 For 66 1000 Sq. Ft. GLA of Shopping Center - Zone 3D  
 ( 820 ) Shopping Center

Open Date: 11/8/2023  
 Analysis Date: 11/8/2023

Project: RidgeGate

<u>Day / Period</u>	<u>Total Trips</u>	<u>Pass-By Trips</u>	<u>Avg Rate</u>	<u>Min Rate</u>	<u>Max Rate</u>	<u>Std Dev</u>	<u>Avg Size</u>	<u>% Enter</u>	<u>% Exit</u>	<u>Use Eq.</u>	<u>Equation</u>	<u>R2</u>
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	4532	0	37.75	7.42	207.98	16.41	453	50	50	True	$\ln(T) = 0.68 \ln(X) + 5.57$	0.76
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	185	0	0.94	0.18	23.74	0.87	351	62	38	True	$T = 0.5(X) + 151.78$	0.5
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	400	136	3.81	0.74	18.69	2.04	327	48	52	True	$\ln(T) = 0.74 \ln(X) + 2.89$	0.82
Saturday Average Daily Trips Source : Trip Generation Manual 10th Edition	6888	0	46.12	13.01	167.89	17.91	602	50	50	True	$\ln(T) = 0.62 \ln(X) + 6.24$	0.71
Saturday Peak Hour of Generator Source : Trip Generation Manual 10th Edition	446	116	4.5	1.42	15.1	1.88	416	52	48	True	$\ln(T) = 0.79 \ln(X) + 2.79$	0.87

**Detailed Land Use Data**  
 For 21 1000 Sq. Ft. GLA of Shopping Center - Zone 4D  
 ( 820 ) Shopping Center

Open Date: 11/8/2023  
 Analysis Date: 11/8/2023

Project: RidgeGate

<u>Day / Period</u>	<u>Total Trips</u>	<u>Pass-By Trips</u>	<u>Avg Rate</u>	<u>Min Rate</u>	<u>Max Rate</u>	<u>Std Dev</u>	<u>Avg Size</u>	<u>% Enter</u>	<u>% Exit</u>	<u>Use Eq.</u>	<u>Equation</u>	<u>R2</u>
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	2080	0	37.75	7.42	207.98	16.41	453	50	50	True	$\ln(T) = 0.68 \ln(X) + 5.57$	0.76
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	162	0	0.94	0.18	23.74	0.87	351	62	38	True	$T = 0.5(X) + 151.78$	0.5
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	171	58	3.81	0.74	18.69	2.04	327	48	52	True	$\ln(T) = 0.74 \ln(X) + 2.89$	0.82
Saturday Average Daily Trips Source : Trip Generation Manual 10th Edition	3387	0	46.12	13.01	167.89	17.91	602	50	50	True	$\ln(T) = 0.62 \ln(X) + 6.24$	0.71
Saturday Peak Hour of Generator Source : Trip Generation Manual 10th Edition	180	47	4.5	1.42	15.1	1.88	416	52	48	True	$\ln(T) = 0.79 \ln(X) + 2.79$	0.87

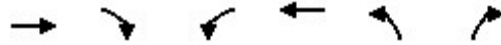
**Detailed Land Use Data**  
 For 130 Dwelling Units of Multi Family - Zone 4D  
 ( 220 ) Multifamily Housing (Low-Rise)

Open Date: 11/8/2023  
 Analysis Date: 11/8/2023

Project: RidgeGate

<u>Day / Period</u>	<u>Total Trips</u>	<u>Pass-By Trips</u>	<u>Avg Rate</u>	<u>Min Rate</u>	<u>Max Rate</u>	<u>Std Dev</u>	<u>Avg Size</u>	<u>% Enter</u>	<u>% Exit</u>	<u>Use Eq.</u>	<u>Equation</u>	<u>R2</u>
Weekday Average Daily Trips Source : Trip Generation Manual 10th Edition	942	0	7.32	4.45	10.97	1.31	168	50	50	True	$T = 7.56(X) - 40.86$	0.96
Weekday AM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	61	0	0.46	0.18	0.74	0.12	199	23	77	True	$\ln(T) = 0.95 \ln(X) - 0.51$	0.9
Weekday PM Peak Hour of Adjacent Street Traffic Source : Trip Generation Manual 10th Edition	75	0	0.56	0.18	1.25	0.16	187	63	37	True	$\ln(T) = 0.89 \ln(X) - 0.02$	0.86
Saturday Average Daily Trips Source : Trip Generation Manual 10th Edition	1300	0	8.14	3.36	11.4	2.94	89	50	50	True	$T = 14.01(X) - 521.69$	0.93
Saturday Peak Hour of Generator Source : Trip Generation Manual 10th Edition	107	0	0.7	0.41	0.93	0.2	89			True	$T = 1.08(X) - 33.24$	0.92

Lanes, Volumes, Timings  
2: Avenue B & Ridgeway Couplet WB



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	49	1796	133	0
Future Volume (vph)	0	0	49	1796	133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	200		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950		0.950	
Satd. Flow (prot)	0	0	1770	3539	1770	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	0	0	1770	3539	1770	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	30	
Link Distance (ft)	470			543	629	
Travel Time (s)	7.1			8.2	14.3	
Peak Hour Factor	0.92	0.92	0.78	0.95	0.84	0.92
Adj. Flow (vph)	0	0	63	1891	158	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	63	1891	158	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors			1	2	1	
Detector Template			Left	Thru	Left	
Leading Detector (ft)			20	100	20	
Trailing Detector (ft)			0	0	0	
Detector 1 Position(ft)			0	0	0	
Detector 1 Size(ft)			20	6	20	
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)			0.0	0.0	0.0	
Detector 1 Queue (s)			0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	
Detector 2 Position(ft)				94		
Detector 2 Size(ft)				6		
Detector 2 Type				Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)				0.0		
Turn Type			Perm	NA	Prot	
Protected Phases				6	8	
Permitted Phases			6			

Lanes, Volumes, Timings  
 2: Avenue B & Ridgeway Couplet WB

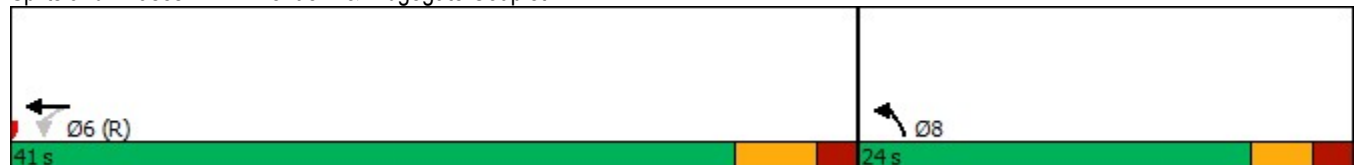


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase			6	6	8	
Switch Phase						
Minimum Initial (s)			5.0	5.0	5.0	
Minimum Split (s)			24.0	24.0	23.5	
Total Split (s)			41.0	41.0	24.0	
Total Split (%)			63.1%	63.1%	36.9%	
Maximum Green (s)			35.0	35.0	19.0	
Yellow Time (s)			4.0	4.0	3.0	
All-Red Time (s)			2.0	2.0	2.0	
Lost Time Adjust (s)			0.0	0.0	0.0	
Total Lost Time (s)			6.0	6.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)			3.0	3.0	3.0	
Recall Mode			C-Min	C-Min	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			11.0	11.0	11.0	
Pedestrian Calls (#/hr)			0	0	0	
Act Effct Green (s)			46.5	46.5	11.1	
Actuated g/C Ratio			0.72	0.72	0.17	
v/c Ratio			0.05	0.75	0.52	
Control Delay			4.9	11.3	30.3	
Queue Delay			0.0	0.0	0.0	
Total Delay			4.9	11.3	30.3	
LOS			A	B	C	
Approach Delay				11.1	30.3	
Approach LOS				B	C	

Intersection Summary

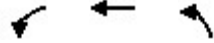
Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2: and 6:WBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	12.5
Intersection LOS:	B
Intersection Capacity Utilization:	66.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Avenue B & Ridgeway Couplet WB





Queues  
2: Avenue B & Ridgeway Couplet WB



Lane Group	WBL	WBT	NBL
Lane Group Flow (vph)	63	1891	158
v/c Ratio	0.05	0.75	0.52
Control Delay	4.9	11.3	30.3
Queue Delay	0.0	0.0	0.0
Total Delay	4.9	11.3	30.3
Queue Length 50th (ft)	7	239	58
Queue Length 95th (ft)	19	#503	93
Internal Link Dist (ft)		463	549
Turn Bay Length (ft)	200		
Base Capacity (vph)	1266	2531	517
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.05	0.75	0.31

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 2: Avenue B & Ridgeway Couplet WB



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations			↶	↷	↶	
Traffic Volume (veh/h)	0	0	49	1796	133	0
Future Volume (veh/h)	0	0	49	1796	133	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00		1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			1870	1870	1870	0
Adj Flow Rate, veh/h			63	1891	158	0
Peak Hour Factor			0.78	0.95	0.84	0.92
Percent Heavy Veh, %			2	2	2	0
Cap, veh/h			1728	3226	0	0
Arrive On Green			0.91	0.91	0.00	0.00
Sat Flow, veh/h			1781	3647	0	
Grp Volume(v), veh/h			63	1891	0.0	
Grp Sat Flow(s),veh/h/ln			1781	1777		
Q Serve(g_s), s			0.2	6.8		
Cycle Q Clear(g_c), s			0.2	6.8		
Prop In Lane			1.00			
Lane Grp Cap(c), veh/h			1728	3226		
V/C Ratio(X)			0.04	0.59		
Avail Cap(c_a), veh/h			1728	3226		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	1.00		
Uniform Delay (d), s/veh			0.3	0.6		
Incr Delay (d2), s/veh			0.0	0.8		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.0	0.4		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.3	1.4		
LnGrp LOS			A	A		
Approach Vol, veh/h				1954		
Approach Delay, s/veh				1.3		
Approach LOS				A		
Timer - Assigned Phs						6
Phs Duration (G+Y+Rc), s						65.0
Change Period (Y+Rc), s						6.0
Max Green Setting (Gmax), s						35.0
Max Q Clear Time (g_c+I1), s						8.8
Green Ext Time (p_c), s						16.8
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			1.3			
HCM 6th LOS			A			

Lanes, Volumes, Timings  
4: Avenue B & Ridgeway Couplet EB

JR Engineering  
04/17/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1004	77	0	0	0	0	133	78	1	49	0
Future Volume (vph)	1	1004	77	0	0	0	0	133	78	1	49	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	0		0	0		200	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850							0.850		
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	3539	1583	0	0	0	0	1863	1583	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102						116			
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		488			568			572			629	
Travel Time (s)		7.4			8.6			13.0			14.3	
Peak Hour Factor	0.78	0.93	0.81	0.92	0.92	0.92	0.92	0.84	0.81	0.78	0.78	0.92
Adj. Flow (vph)	1	1080	95	0	0	0	0	158	96	1	63	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1080	95	0	0	0	0	158	96	1	63	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Split	NA	
Protected Phases		2						8		4	4	
Permitted Phases	2		2						8			

Lanes, Volumes, Timings  
4: Avenue B & Ridgeway Couplet EB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2					8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0					23.5	23.5	23.5	23.5	
Total Split (s)	27.0	27.0	27.0					24.0	24.0	24.0	24.0	
Total Split (%)	36.0%	36.0%	36.0%					32.0%	32.0%	32.0%	32.0%	
Maximum Green (s)	21.0	21.0	21.0					19.0	19.0	19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	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)	6.0	6.0	6.0					5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min					Min	Min	None	None	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0	0	0	
Act Effct Green (s)	43.9	43.9	43.9					11.6	11.6	8.0	8.0	
Actuated g/C Ratio	0.59	0.59	0.59					0.15	0.15	0.11	0.11	
v/c Ratio	0.00	0.52	0.10					0.55	0.28	0.01	0.32	
Control Delay	11.0	12.8	2.9					35.9	6.3	28.0	34.7	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	11.0	12.8	2.9					35.9	6.3	28.0	34.7	
LOS	B	B	A					D	A	C	C	
Approach Delay		12.0						24.7			34.5	
Approach LOS		B						C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	75
Offset:	0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	15.1
Intersection LOS:	B
Intersection Capacity Utilization:	66.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: Avenue B & Ridgeway Couplet EB





Queues  
4: Avenue B & Ridgeway Couplet EB



Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	1080	95	158	96	1	63
v/c Ratio	0.00	0.52	0.10	0.55	0.28	0.01	0.32
Control Delay	11.0	12.8	2.9	35.9	6.3	28.0	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	12.8	2.9	35.9	6.3	28.0	34.7
Queue Length 50th (ft)	0	167	0	69	0	0	28
Queue Length 95th (ft)	2	278	17	108	20	4	52
Internal Link Dist (ft)		408		492			549
Turn Bay Length (ft)	200		200		200	200	
Base Capacity (vph)	1036	2071	968	471	487	448	471
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.52	0.10	0.34	0.20	0.00	0.13

Intersection Summary

HCM 6th Signalized Intersection Summary  
4: Avenue B & Ridgeway Couplet EB

JR Engineering  
04/17/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗					↑	↗	↘	↑	
Traffic Volume (veh/h)	1	1004	77	0	0	0	0	133	78	1	49	0
Future Volume (veh/h)	1	1004	77	0	0	0	0	133	78	1	49	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	1	1080	95				0	158	96	1	63	0
Peak Hour Factor	0.78	0.93	0.81				0.92	0.84	0.81	0.78	0.78	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1102	2198	980				0	223	189	87	92	0
Arrive On Green	0.62	0.62	0.62				0.00	0.12	0.12	0.05	0.05	0.00
Sat Flow, veh/h	1781	3554	1585				0	1870	1585	1781	1870	0
Grp Volume(v), veh/h	1	1080	95				0	158	96	1	63	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585				0	1870	1585	1781	1870	0
Q Serve(g_s), s	0.0	12.5	1.8				0.0	6.1	4.3	0.0	2.5	0.0
Cycle Q Clear(g_c), s	0.0	12.5	1.8				0.0	6.1	4.3	0.0	2.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1102	2198	980				0	223	189	87	92	0
V/C Ratio(X)	0.00	0.49	0.10				0.00	0.71	0.51	0.01	0.69	0.00
Avail Cap(c_a), veh/h	1102	2198	980				0	474	402	451	474	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.5	7.8	5.8				0.0	31.8	31.0	33.9	35.1	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.2				0.0	4.1	2.1	0.1	8.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	0.5				0.0	2.9	1.7	0.0	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	8.6	6.0				0.0	35.9	33.1	34.0	43.8	0.0
LnGrp LOS	A	A	A				A	D	C	C	D	A
Approach Vol, veh/h		1176						254			64	
Approach Delay, s/veh		8.4						34.8			43.7	
Approach LOS		A						C			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		52.4		8.7				13.9				
Change Period (Y+Rc), s		6.0		5.0				5.0				
Max Green Setting (Gmax), s		21.0		19.0				19.0				
Max Q Clear Time (g_c+l1), s		14.5		4.5				8.1				
Green Ext Time (p_c), s		3.7		0.2				0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

Lanes, Volumes, Timings  
6: Avenue B & Avenue Q

JR Engineering  
04/17/2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1	1	1	1	136	1	1	1	47	1	29
Future Volume (vph)	84	1	1	1	1	136	1	1	1	47	1	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.925			0.867			0.955			0.949	
Flt Protected	0.950							0.984			0.970	
Satd. Flow (prot)	1770	1723	0	0	1615	0	0	1750	0	0	1715	0
Flt Permitted	0.950							0.984			0.970	
Satd. Flow (perm)	1770	1723	0	0	1615	0	0	1750	0	0	1715	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		403			333			468			572	
Travel Time (s)		9.2			7.6			10.6			13.0	
Peak Hour Factor	0.81	0.78	0.78	0.78	0.78	0.84	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	104	1	1	1	1	162	1	1	1	60	1	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	2	0	0	164	0	0	3	0	0	98	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	84	1	1	1	1	136	1	1	1	47	1	29
Future Vol, veh/h	84	1	1	1	1	136	1	1	1	47	1	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	78	78	78	78	84	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	1	1	1	1	162	1	1	1	60	1	37

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	225	144	20	145	162	2	38	0	0	2	0	0
Stage 1	140	140	-	4	4	-	-	-	-	-	-	-
Stage 2	85	4	-	141	158	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	730	747	1058	824	730	1082	1572	-	-	1620	-	-
Stage 1	863	781	-	1018	892	-	-	-	-	-	-	-
Stage 2	923	892	-	862	767	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	602	718	1058	798	702	1082	1572	-	-	1620	-	-
Mov Cap-2 Maneuver	602	718	-	798	702	-	-	-	-	-	-	-
Stage 1	862	751	-	1017	891	-	-	-	-	-	-	-
Stage 2	783	891	-	827	738	-	-	-	-	-	-	-

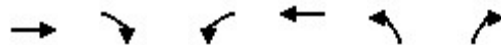
Approach	EB		WB			NB			SB		
HCM Control Delay, s	12.1		9			2.4			4.5		
HCM LOS	B		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	602	855	1074	1620	-	-
HCM Lane V/C Ratio	0.001	-	-	0.172	0.003	0.153	0.037	-	-
HCM Control Delay (s)	7.3	0	-	12.2	9.2	9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	0.5	0.1	-	-



Lanes, Volumes, Timings  
3: Avenue D & Ridgeway Couplet WB

JR Engineering  
04/19/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	16	1787	171	0
Future Volume (vph)	0	0	16	1787	171	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	200		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950		0.950	
Satd. Flow (prot)	0	0	1770	3539	1770	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	0	0	1770	3539	1770	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	45			45	30	
Link Distance (ft)	484			548	760	
Travel Time (s)	7.3			8.3	17.3	
Peak Hour Factor	0.92	0.92	0.78	0.95	0.86	0.92
Adj. Flow (vph)	0	0	21	1881	199	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	21	1881	199	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors			1	2	1	
Detector Template			Left	Thru	Left	
Leading Detector (ft)			20	100	20	
Trailing Detector (ft)			0	0	0	
Detector 1 Position(ft)			0	0	0	
Detector 1 Size(ft)			20	6	20	
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)			0.0	0.0	0.0	
Detector 1 Queue (s)			0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	
Detector 2 Position(ft)				94		
Detector 2 Size(ft)				6		
Detector 2 Type				Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)				0.0		
Turn Type			Perm	NA	Prot	
Protected Phases				6	8	
Permitted Phases			6			

Lanes, Volumes, Timings  
3: Avenue D & Ridgeway Couplet WB



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase			6	6	8	
Switch Phase						
Minimum Initial (s)			5.0	5.0	5.0	
Minimum Split (s)			24.0	24.0	23.5	
Total Split (s)			41.0	41.0	24.0	
Total Split (%)			63.1%	63.1%	36.9%	
Maximum Green (s)			35.0	35.0	19.0	
Yellow Time (s)			4.0	4.0	3.0	
All-Red Time (s)			2.0	2.0	2.0	
Lost Time Adjust (s)			0.0	0.0	0.0	
Total Lost Time (s)			6.0	6.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)			3.0	3.0	3.0	
Recall Mode			C-Min	C-Min	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			11.0	11.0	11.0	
Pedestrian Calls (#/hr)			0	0	0	
Act Effct Green (s)			41.5	41.5	12.5	
Actuated g/C Ratio			0.64	0.64	0.19	
v/c Ratio			0.02	0.83	0.59	
Control Delay			5.6	15.1	30.3	
Queue Delay			0.0	0.0	0.0	
Total Delay			5.6	15.1	30.3	
LOS			A	B	C	
Approach Delay				15.0	30.3	
Approach LOS				B	C	

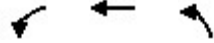
Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	0 (0%), Referenced to phase 2: and 6:WBTL, Start of Green
Natural Cycle:	70
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	16.4
Intersection LOS:	B
Intersection Capacity Utilization:	68.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Avenue D & Ridgeway Couplet WB



Queues  
3: Avenue D & Ridgeway Couplet WB

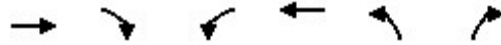


Lane Group	WBL	WBT	NBL
Lane Group Flow (vph)	21	1881	199
v/c Ratio	0.02	0.83	0.59
Control Delay	5.6	15.1	30.3
Queue Delay	0.0	0.0	0.0
Total Delay	5.6	15.1	30.3
Queue Length 50th (ft)	3	257	72
Queue Length 95th (ft)	10	#523	113
Internal Link Dist (ft)		468	680
Turn Bay Length (ft)	200		
Base Capacity (vph)	1129	2258	517
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.02	0.83	0.38

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
 3: Avenue D & Ridgeway Couplet WB



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations			↶	↷	↶	
Traffic Volume (veh/h)	0	0	16	1787	171	0
Future Volume (veh/h)	0	0	16	1787	171	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00		1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			1870	1870	1870	0
Adj Flow Rate, veh/h			21	1881	199	0
Peak Hour Factor			0.78	0.95	0.86	0.92
Percent Heavy Veh, %			2	2	2	0
Cap, veh/h			1728	3226	0	0
Arrive On Green			0.91	0.91	0.00	0.00
Sat Flow, veh/h			1781	3647	0	
Grp Volume(v), veh/h			21	1881	0.0	
Grp Sat Flow(s),veh/h/ln			1781	1777		
Q Serve(g_s), s			0.1	6.7		
Cycle Q Clear(g_c), s			0.1	6.7		
Prop In Lane			1.00			
Lane Grp Cap(c), veh/h			1728	3226		
V/C Ratio(X)			0.01	0.58		
Avail Cap(c_a), veh/h			1728	3226		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	1.00		
Uniform Delay (d), s/veh			0.3	0.6		
Incr Delay (d2), s/veh			0.0	0.8		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.0	0.3		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.3	1.4		
LnGrp LOS			A	A		
Approach Vol, veh/h				1902		
Approach Delay, s/veh				1.4		
Approach LOS				A		
Timer - Assigned Phs						6
Phs Duration (G+Y+Rc), s						65.0
Change Period (Y+Rc), s						6.0
Max Green Setting (Gmax), s						35.0
Max Q Clear Time (g_c+I1), s						8.7
Green Ext Time (p_c), s						16.6
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			1.4			
HCM 6th LOS			A			

Lanes, Volumes, Timings  
5: Avenue D & Ridgeway Couplet EB

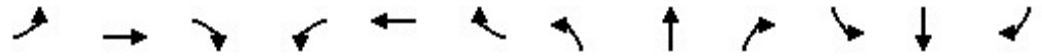
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1075	44	0	0	0	0	171	36	1	16	0
Future Volume (vph)	1	1075	44	0	0	0	0	171	36	1	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	0		0	0		200	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	1770	3539	1583	0	0	0	0	1863	1583	1770	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102						116			
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		495			548			482			760	
Travel Time (s)		7.5			8.3			11.0			17.3	
Peak Hour Factor	0.78	0.93	0.78	0.92	0.92	0.92	0.92	0.86	0.78	0.78	0.78	0.92
Adj. Flow (vph)	1	1156	56	0	0	0	0	199	46	1	21	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1156	56	0	0	0	0	199	46	1	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Split	NA	
Protected Phases		2						8		4	4	
Permitted Phases	2		2						8			



Lanes, Volumes, Timings  
5: Avenue D & Ridgeway Couplet EB



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2					8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0					23.5	23.5	23.5	23.5	
Total Split (s)	27.0	27.0	27.0					24.0	24.0	24.0	24.0	
Total Split (%)	36.0%	36.0%	36.0%					32.0%	32.0%	32.0%	32.0%	
Maximum Green (s)	21.0	21.0	21.0					19.0	19.0	19.0	19.0	
Yellow Time (s)	4.0	4.0	4.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	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)	6.0	6.0	6.0					5.0	5.0	5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min					None	None	None	None	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0	0	0	
Act Effct Green (s)	45.9	45.9	45.9					13.2	13.2	6.4	6.4	
Actuated g/C Ratio	0.61	0.61	0.61					0.18	0.18	0.09	0.09	
v/c Ratio	0.00	0.53	0.06					0.61	0.12	0.01	0.13	
Control Delay	11.0	11.8	0.9					36.0	0.7	31.0	33.1	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	11.0	11.8	0.9					36.0	0.7	31.0	33.1	
LOS	B	B	A					D	A	C	C	
Approach Delay		11.3						29.4			33.0	
Approach LOS		B						C			C	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 75  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:, Start of Green  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 14.6  
 Intersection Capacity Utilization 68.0%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

Splits and Phases: 5: Avenue D & Ridgeway Couplet EB



Queues  
5: Avenue D & Ridgeway Couplet EB



Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	1156	56	199	46	1	21
v/c Ratio	0.00	0.53	0.06	0.61	0.12	0.01	0.13
Control Delay	11.0	11.8	0.9	36.0	0.7	31.0	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	11.8	0.9	36.0	0.7	31.0	33.1
Queue Length 50th (ft)	0	114	0	86	0	0	9
Queue Length 95th (ft)	2	300	2	132	0	4	25
Internal Link Dist (ft)		415		402			680
Turn Bay Length (ft)	200		200		200	200	
Base Capacity (vph)	1082	2164	1007	471	487	448	471
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.53	0.06	0.42	0.09	0.00	0.04

Intersection Summary

HCM 6th Signalized Intersection Summary  
5: Avenue D & Ridgeway Couplet EB

















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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗↗	↖					↖	↗	↖	↗	
Traffic Volume (veh/h)	1	1075	44	0	0	0	0	171	36	1	16	0
Future Volume (veh/h)	1	1075	44	0	0	0	0	171	36	1	16	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	1	1156	56				0	199	46	1	21	0
Peak Hour Factor	0.78	0.93	0.78				0.92	0.86	0.78	0.78	0.78	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1110	2214	988				0	260	220	44	46	0
Arrive On Green	0.62	0.62	0.62				0.00	0.14	0.14	0.02	0.02	0.00
Sat Flow, veh/h	1781	3554	1585				0	1870	1585	1781	1870	0
Grp Volume(v), veh/h	1	1156	56				0	199	46	1	21	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585				0	1870	1585	1781	1870	0
Q Serve(g_s), s	0.0	13.6	1.0				0.0	7.7	1.9	0.0	0.8	0.0
Cycle Q Clear(g_c), s	0.0	13.6	1.0				0.0	7.7	1.9	0.0	0.8	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1110	2214	988				0	260	220	44	46	0
V/C Ratio(X)	0.00	0.52	0.06				0.00	0.77	0.21	0.02	0.46	0.00
Avail Cap(c_a), veh/h	1110	2214	988				0	474	402	451	474	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.3	7.9	5.5				0.0	31.1	28.6	35.7	36.1	0.0
Incr Delay (d2), s/veh	0.0	0.9	0.1				0.0	4.7	0.5	0.2	7.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.9	0.3				0.0	3.7	0.7	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.3	8.8	5.6				0.0	35.8	29.1	35.9	43.1	0.0
LnGrp LOS	A	A	A				A	D	C	D	D	A
Approach Vol, veh/h		1213						245			22	
Approach Delay, s/veh		8.6						34.5			42.7	
Approach LOS		A						C			D	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		52.7		6.8				15.4				
Change Period (Y+Rc), s		6.0		5.0				5.0				
Max Green Setting (Gmax), s		21.0		19.0				19.0				
Max Q Clear Time (g_c+I1), s		15.6		2.8				9.7				
Green Ext Time (p_c), s		3.3		0.0				0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Lanes, Volumes, Timings  
24: Avenue D & Site Access

JR Engineering  
04/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1	1	1	1	123	1	1	1	31	1	29
Future Volume (vph)	84	1	1	1	1	123	1	1	1	31	1	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.999			0.867			0.955			0.936	
Fl <sub>t</sub> Protected		0.953						0.984			0.975	
Satd. Flow (prot)	0	1773	0	0	1615	0	0	1750	0	0	1700	0
Fl <sub>t</sub> Permitted		0.953						0.984			0.975	
Satd. Flow (perm)	0	1773	0	0	1615	0	0	1750	0	0	1700	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		305			318			381			482	
Travel Time (s)		6.9			7.2			8.7			11.0	
Peak Hour Factor	0.81	0.78	0.78	0.78	0.78	0.84	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	104	1	1	1	1	146	1	1	1	40	1	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	148	0	0	3	0	0	78	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	28.1%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	84	1	1	1	1	123	1	1	1	31	1	29
Future Vol, veh/h	84	1	1	1	1	123	1	1	1	31	1	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	78	78	78	78	84	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	104	1	1	1	1	146	1	1	1	40	1	37

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	177	104	20	105	122	2	38	0	0	2	0	0
Stage 1	100	100	-	4	4	-	-	-	-	-	-	-
Stage 2	77	4	-	101	118	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	785	786	1058	875	768	1082	1572	-	-	1620	-	-
Stage 1	906	812	-	1018	892	-	-	-	-	-	-	-
Stage 2	932	892	-	905	798	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	664	766	1058	856	748	1082	1572	-	-	1620	-	-
Mov Cap-2 Maneuver	664	766	-	856	748	-	-	-	-	-	-	-
Stage 1	905	792	-	1017	891	-	-	-	-	-	-	-
Stage 2	804	891	-	880	778	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.4		8.9		2.4		3.7	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	668	1075	1620	-	-
HCM Lane V/C Ratio	0.001	-	-	0.159	0.139	0.025	-	-
HCM Control Delay (s)	7.3	0	-	11.4	8.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.5	0.1	-	-

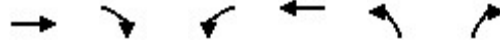
Lanes, Volumes, Timings  
3: Avenue D & Ridgeway Couplet WB



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	68	1439	159	0
Future Volume (vph)	0	0	68	1439	159	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	200		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected			0.950		0.950	
Satd. Flow (prot)	0	0	1770	3539	1770	0
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	0	0	1770	3539	1770	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	484			548	760	
Travel Time (s)	11.0			12.5	17.3	
Peak Hour Factor	0.92	0.92	0.80	0.94	0.85	0.92
Adj. Flow (vph)	0	0	85	1531	187	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	85	1531	187	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors			1	2	1	
Detector Template			Left	Thru	Left	
Leading Detector (ft)			20	100	20	
Trailing Detector (ft)			0	0	0	
Detector 1 Position(ft)			0	0	0	
Detector 1 Size(ft)			20	6	20	
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)			0.0	0.0	0.0	
Detector 1 Queue (s)			0.0	0.0	0.0	
Detector 1 Delay (s)			0.0	0.0	0.0	
Detector 2 Position(ft)				94		
Detector 2 Size(ft)				6		
Detector 2 Type				Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)				0.0		
Turn Type			Perm	NA	Prot	
Protected Phases				6	8	
Permitted Phases			6			



Lanes, Volumes, Timings  
 3: Avenue D & Ridgeway Couplet WB

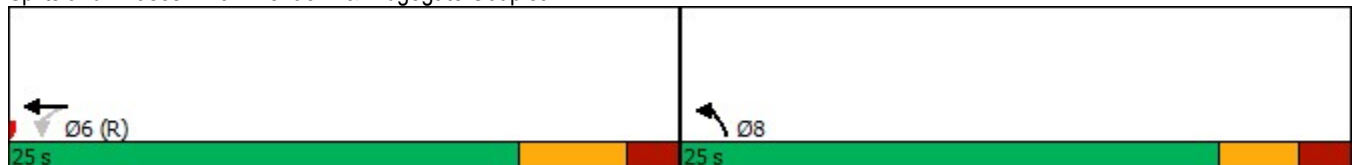


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase			6	6	8	
Switch Phase						
Minimum Initial (s)			5.0	5.0	5.0	
Minimum Split (s)			24.0	24.0	23.5	
Total Split (s)			25.0	25.0	25.0	
Total Split (%)			50.0%	50.0%	50.0%	
Maximum Green (s)			19.0	19.0	20.0	
Yellow Time (s)			4.0	4.0	3.0	
All-Red Time (s)			2.0	2.0	2.0	
Lost Time Adjust (s)			0.0	0.0	0.0	
Total Lost Time (s)			6.0	6.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)			3.0	3.0	3.0	
Recall Mode			C-Min	C-Min	None	
Walk Time (s)			7.0	7.0	7.0	
Flash Dont Walk (s)			11.0	11.0	11.0	
Pedestrian Calls (#/hr)			0	0	0	
Act Effct Green (s)			31.9	31.9	10.6	
Actuated g/C Ratio			0.64	0.64	0.21	
v/c Ratio			0.08	0.68	0.50	
Control Delay			6.2	11.5	21.3	
Queue Delay			0.0	0.0	0.0	
Total Delay			6.2	11.5	21.3	
LOS			A	B	C	
Approach Delay				11.2	21.3	
Approach LOS				B	C	

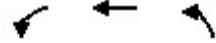
Intersection Summary

Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	50
Offset:	0 (0%), Referenced to phase 2: and 6:WBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	12.3
Intersection LOS:	B
Intersection Capacity Utilization:	92.9%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 3: Avenue D & Ridgeway Couplet WB



Queues  
3: Avenue D & Ridgeway Couplet WB



Lane Group	WBL	WBT	NBL
Lane Group Flow (vph)	85	1531	187
v/c Ratio	0.08	0.68	0.50
Control Delay	6.2	11.5	21.3
Queue Delay	0.0	0.0	0.0
Total Delay	6.2	11.5	21.3
Queue Length 50th (ft)	10	154	49
Queue Length 95th (ft)	26	#339	80
Internal Link Dist (ft)		468	680
Turn Bay Length (ft)	200		
Base Capacity (vph)	1129	2257	708
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.08	0.68	0.26

Intersection Summary

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

HCM 6th Signalized Intersection Summary  
3: Avenue D & Ridgeway Couplet WB

JR Engineering  
04/19/2023



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations			↶	↷	↶	
Traffic Volume (veh/h)	0	0	68	1439	159	0
Future Volume (veh/h)	0	0	68	1439	159	0
Initial Q (Qb), veh			0	0	0	0
Ped-Bike Adj(A_pbT)			1.00		1.00	1.00
Parking Bus, Adj			1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	
Adj Sat Flow, veh/h/ln			1870	1870	1870	0
Adj Flow Rate, veh/h			85	1531	187	0
Peak Hour Factor			0.80	0.94	0.85	0.92
Percent Heavy Veh, %			2	2	2	0
Cap, veh/h			1712	3127	0	0
Arrive On Green			0.88	0.88	0.00	0.00
Sat Flow, veh/h			1781	3647	0	
Grp Volume(v), veh/h			85	1531	0.0	
Grp Sat Flow(s),veh/h/ln			1781	1777		
Q Serve(g_s), s			0.3	4.5		
Cycle Q Clear(g_c), s			0.3	4.5		
Prop In Lane			1.00			
Lane Grp Cap(c), veh/h			1712	3127		
V/C Ratio(X)			0.05	0.49		
Avail Cap(c_a), veh/h			1712	3127		
HCM Platoon Ratio			1.00	1.00		
Upstream Filter(I)			1.00	1.00		
Uniform Delay (d), s/veh			0.4	0.6		
Incr Delay (d2), s/veh			0.1	0.6		
Initial Q Delay(d3),s/veh			0.0	0.0		
%ile BackOfQ(50%),veh/ln			0.0	0.2		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh			0.4	1.2		
LnGrp LOS			A	A		
Approach Vol, veh/h				1616		
Approach Delay, s/veh				1.1		
Approach LOS				A		
Timer - Assigned Phs						6
Phs Duration (G+Y+Rc), s						50.0
Change Period (Y+Rc), s						6.0
Max Green Setting (Gmax), s						19.0
Max Q Clear Time (g_c+I1), s						6.5
Green Ext Time (p_c), s						8.6
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			1.1			
HCM 6th LOS			A			

Lanes, Volumes, Timings  
5: Avenue D & Ridgeway Couplet EB

JR Engineering  
04/19/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	2439	165	0	0	0	0	159	29	1	68	0
Future Volume (vph)	1	2439	165	0	0	0	0	159	29	1	68	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	0		0	0		200	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	1770	3539	1583	0	0	0	0	1863	1583	1770	1863	0
Flt Permitted	0.950									0.356		
Satd. Flow (perm)	1770	3539	1583	0	0	0	0	1863	1583	663	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92						91			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		495			548			482			760	
Travel Time (s)		11.3			12.5			11.0			17.3	
Peak Hour Factor	0.78	0.99	0.86	0.92	0.92	0.92	0.92	0.85	0.78	0.78	0.80	0.92
Adj. Flow (vph)	1	2464	192	0	0	0	0	187	37	1	85	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	2464	192	0	0	0	0	187	37	1	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		2						8		7	4	
Permitted Phases	2		2						8	4		

Lanes, Volumes, Timings  
5: Avenue D & Ridgeway Couplet EB

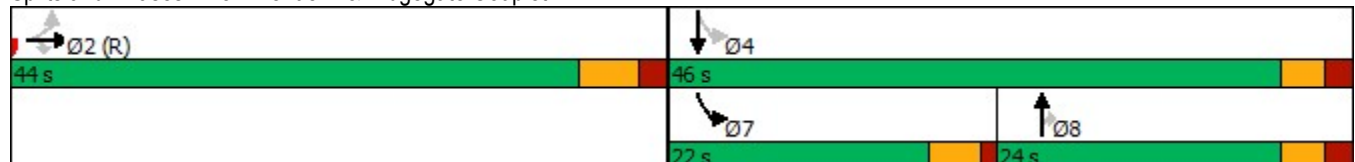


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	2	2	2					8	8	7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	24.0					23.5	23.5	9.5	23.5	
Total Split (s)	44.0	44.0	44.0					24.0	24.0	22.0	46.0	
Total Split (%)	48.9%	48.9%	48.9%					26.7%	26.7%	24.4%	51.1%	
Maximum Green (s)	38.0	38.0	38.0					19.0	19.0	17.5	41.0	
Yellow Time (s)	4.0	4.0	4.0					3.0	3.0	3.5	3.0	
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0					5.0	5.0	4.5	5.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	C-Min	C-Min	C-Min					None	None	None	None	
Walk Time (s)	7.0	7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0	11.0					11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0					0	0		0	
Act Effct Green (s)	62.7	62.7	62.7					14.2	14.2	16.8	16.3	
Actuated g/C Ratio	0.70	0.70	0.70					0.16	0.16	0.19	0.18	
v/c Ratio	0.00	1.00	0.17					0.64	0.11	0.01	0.25	
Control Delay	7.0	33.9	4.0					44.9	0.7	24.0	30.8	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	7.0	33.9	4.0					44.9	0.7	24.0	30.8	
LOS	A	C	A					D	A	C	C	
Approach Delay		31.7						37.6			30.8	
Approach LOS		C						D			C	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	32.2
Intersection LOS:	C
Intersection Capacity Utilization:	92.9%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 5: Avenue D & Ridgeway Couplet EB



Queues  
5: Avenue D & Ridgeway Couplet EB



Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1	2464	192	187	37	1	85
v/c Ratio	0.00	1.00	0.17	0.64	0.11	0.01	0.25
Control Delay	7.0	33.9	4.0	44.9	0.7	24.0	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	33.9	4.0	44.9	0.7	24.0	30.8
Queue Length 50th (ft)	0	570	14	101	0	1	43
Queue Length 95th (ft)	2	#1077	54	148	0	3	59
Internal Link Dist (ft)		415		402			680
Turn Bay Length (ft)	200		200		200	200	
Base Capacity (vph)	1233	2467	1131	395	406	363	848
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	1.00	0.17	0.47	0.09	0.00	0.10

Intersection Summary

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



HCM 6th Signalized Intersection Summary  
5: Avenue D & Ridgeway Couplet EB

















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04/19/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	2439	165	0	0	0	0	159	29	1	68	0
Future Volume (veh/h)	1	2439	165	0	0	0	0	159	29	1	68	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	1	2464	192				0	187	37	1	85	0
Peak Hour Factor	0.78	0.99	0.86				0.92	0.85	0.78	0.78	0.80	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	1247	2487	1109				0	237	201	117	333	0
Arrive On Green	0.70	0.70	0.70				0.00	0.13	0.13	0.00	0.18	0.00
Sat Flow, veh/h	1781	3554	1585				0	1870	1585	1781	1870	0
Grp Volume(v), veh/h	1	2464	192				0	187	37	1	85	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585				0	1870	1585	1781	1870	0
Q Serve(g_s), s	0.0	61.1	3.7				0.0	8.7	1.9	0.0	3.5	0.0
Cycle Q Clear(g_c), s	0.0	61.1	3.7				0.0	8.7	1.9	0.0	3.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1247	2487	1109				0	237	201	117	333	0
V/C Ratio(X)	0.00	0.99	0.17				0.00	0.79	0.18	0.01	0.26	0.00
Avail Cap(c_a), veh/h	1247	2487	1109				0	395	335	461	852	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.1	13.2	4.6				0.0	38.1	35.1	33.2	31.9	0.0
Incr Delay (d2), s/veh	0.0	16.0	0.3				0.0	5.8	0.4	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	24.1	1.1				0.0	4.3	0.7	0.0	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.1	29.2	5.0				0.0	44.0	35.6	33.2	32.3	0.0
LnGrp LOS	A	C	A				A	D	D	C	C	A
Approach Vol, veh/h		2657						224			86	
Approach Delay, s/veh		27.5						42.6			32.3	
Approach LOS		C						D			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		69.0		21.0			4.6	16.4				
Change Period (Y+Rc), s		6.0		5.0			4.5	5.0				
Max Green Setting (Gmax), s		38.0		41.0			17.5	19.0				
Max Q Clear Time (g_c+l1), s		63.1		5.5			2.0	10.7				
Green Ext Time (p_c), s		0.0		0.4			0.0	0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			28.8									
HCM 6th LOS			C									

Lanes, Volumes, Timings  
24: Avenue D & Site Access

JR Engineering  
04/19/2023

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	1	1	1	1	135	1	1	1	150	1	83
Future Volume (vph)	53	1	1	1	1	135	1	1	1	150	1	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.867			0.955			0.951	
Flt Protected		0.954						0.984			0.969	
Satd. Flow (prot)	0	1774	0	0	1615	0	0	1750	0	0	1717	0
Flt Permitted		0.954						0.984			0.969	
Satd. Flow (perm)	0	1774	0	0	1615	0	0	1750	0	0	1717	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		305			318			381			482	
Travel Time (s)		6.9			7.2			8.7			11.0	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.85	0.78	0.78	0.78	0.85	0.78	0.81
Adj. Flow (vph)	68	1	1	1	1	159	1	1	1	176	1	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	0	161	0	0	3	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	41.9%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	53	1	1	1	1	135	1	1	1	150	1	83
Future Vol, veh/h	53	1	1	1	1	135	1	1	1	150	1	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	85	78	78	78	85	78	81
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	1	1	1	1	159	1	1	1	176	1	102

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	488	408	52	409	459	2	103	0	0	2	0	0
Stage 1	404	404	-	4	4	-	-	-	-	-	-	-
Stage 2	84	4	-	405	455	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	490	533	1016	553	499	1082	1489	-	-	1620	-	-
Stage 1	623	599	-	1018	892	-	-	-	-	-	-	-
Stage 2	924	892	-	622	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	379	470	1016	502	440	1082	1489	-	-	1620	-	-
Mov Cap-2 Maneuver	379	470	-	502	440	-	-	-	-	-	-	-
Stage 1	622	529	-	1017	891	-	-	-	-	-	-	-
Stage 2	786	891	-	547	502	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.4		9		2.5		4.7	
HCM LOS	C		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1489	-	-	385	1060	1620	-	-
HCM Lane V/C Ratio	0.001	-	-	0.183	0.152	0.109	-	-
HCM Control Delay (s)	7.4	0	-	16.4	9	7.5	0	-
HCM Lane LOS	A	A	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.5	0.4	-	-