TRAFFIC IMPACT ANALYSIS

Enclave – Maplewood

City of Maplewood, Minnesota

SEPTEMBER 24, 2022

PREPARED FOR:

Enclave Companies

St. Louis Park, Minnesota

PREPARED BY: Westwood

Westwood

Traffic Impact Analysis for

Enclave – Maplewood

Prepared For:

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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

9/24/2022

(Signature) (date)

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Project Number: R0037066.00
Date: 9/24/2022

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1.0 Executive Summary

Westwood Professional Services, Inc. (Westwood) has been retained by Enclave Companies to prepare a Traffic Impact Analysis (TIA) for the Enclave – Maplewood project. The Enclave – Maplewood project includes 241 multifamily housing (mid-rise) dwelling units that are proposed for development on approximately +/- 7.97 acres located in Maplewood, Minnesota. Full buildout and occupancy of this project is expected to occur in the Year 2024.

This TIA will contain investigations of the potential impacts of the current development plan on the existing and planned roadway infrastructure and develop recommendations for mitigating the identified impacts.

This TIA contains the following analyses at the study intersections and driveways:

- Intersection Level of Service Analysis
- Left Turn and Right Turn Storage Lane Analysis
- Crash Analysis

These analyses will be performed within the following scenarios:

1. Year 2022 Existing Conditions
2. Year 2024 Background (No-Build) Conditions
3. Year 2024 Project Buildout Conditions

This TIA addresses anticipated future conditions at the following **two (2)** public street intersections:

1. County Road D and Southlawn Drive (Intersection #1)
2. Southlawn Drive and Beam Avenue (Intersection #2)

This study also addresses anticipated future conditions at **one (1)** private driveway:

1. Southlawn Drive and Project Driveway (Intersection #3)

The proposed Enclave – Maplewood project is anticipated to generate a total of 89 primary AM peak hour trips and 94 primary PM peak hour trips on an average weekday upon full buildout.

All intersections are anticipated to operate with acceptable LOS in the AM and PM peak hours.

All impacted left turn storage bays are anticipated to have adequate storage for Year 2024 Full Buildout Condition Scenario.

A total of 30 crashes were recorded at the two (2) intersections with crash data in the project area during the most recent five-year period. Of those 30 crashes, 7 crashes (23%) were property damage only crashes, 22 crashes (73%) were injury crashes with the remaining crash (4%) being fatal.

2.0 Introduction

Westwood Professional Services, Inc. (Westwood) has been retained by Enclave Companies to prepare a Traffic Impact Analysis (TIA) for the Enclave – Maplewood project. The Enclave – Maplewood project includes 241 multifamily housing (mid-rise) dwelling units that are proposed for development on approximately +/- 7.97 acres located in Maplewood, Minnesota. Full buildout and occupancy of this project is expected to occur in the Year 2024.

This TIA will contain investigations of the potential impacts of the current development plan on the existing and planned roadway infrastructure and develop recommendations for mitigating the identified impacts. The scope of the TIA is based on discussions with Ramsey County staff on July 7, 2022.

This TIA contains the following analyses at the study intersections and driveways:

- Intersection Level of Service Analysis
- Left Turn and Right Turn Storage Lane Analysis
- Crash Analysis

These analyses will be performed within the following scenarios:

4. Year 2022 Existing Conditions
5. Year 2024 Background (No-Build) Conditions
6. Year 2024 Project Buildout Conditions

Project information for the Enclave – Maplewood project is provided in **Appendix F**.

3.0 Existing Conditions

This section of the report details existing conditions in the immediate vicinity of the project site.

3.1 Existing Land Use

The Enclave – Maplewood project is generally bounded by County Road D to the north, Southlawn Drive to the west, a retail store to the east, and a senior living facility to the south. The location of the Enclave – Maplewood project is shown in **Figure 1**.

3.2 Regional Access

Primary regional access between the Minneapolis – St. Paul area and the proposed Enclave - Maplewood project is provided to and from Interstate 694 (I-694) via the White Bear Avenue interchange. Regional traffic can also travel between Maplewood Drive (US-61) and the proposed Enclave – Maplewood project via Country Road D and Beam Avenue. Site access is provided along arterial street connections such as County Road D and Southlawn Drive to these regional facilities.

3.3 Parcel Access

Access to the parcel is through an existing driveway on Southlawn Drive located approximately 260 feet south of County Road D. This existing driveway on Southlawn Drive will be realigned with the Ashley Furniture driveway located on the west side of Southlawn Drive.

The existing right-in/right-out driveway on Country Road D that is located approximately 300 feet east of Southlawn Drive is proposed to be closed as part of the development of this project.

3.4 Study Area Intersections

This TIA addresses anticipated future conditions at the following **two (2)** public street intersections:

3. County Road D and Southlawn Drive (Intersection #1)
4. Southlawn Drive and Beam Avenue (Intersection #2)

This study also addresses anticipated future conditions at **one (1)** private driveway:

2. Southlawn Drive and Project Driveway (Intersection #3)

The locations of each of these study intersections and private driveways are depicted in **Figure 1**.

3.5 Existing Lane Configuration and Traffic Control

Existing lane configurations and traffic control at the existing study intersections and future access intersections are depicted in **Figure 2**.

3.6 Existing Turning Movements

Existing AM and PM peak hour vehicular, pedestrian, and bicycle turning movement data were collected for the public street intersections identified in **Section 3.4**. The date and location of each count is summarized in **Table 1**. A summary of the peak hour count data at the study intersections is provided in **Figure 3**. The peak hour count data sheets are provided in **Appendix A**.

Table 1 – Peak Hour Turning Movement Count Dates

Intersection	Count Date
County Road D and Southlawn Drive (Intersection #1)	August 23, 2022
Southlawn Drive and Beam Avenue (Intersection #2)	May 17, 2022

Turning movement counts at Intersection 3 (Southlawn Drive and Ashley Furniture access/Future Project Access) were not collected. Trips were generated for the Ashley Furniture Store on the west side of Southlawn Drive and distributed through Intersection 3 as an estimate of existing traffic traveling into and out of the west leg of Intersection 3.

LEGEND

X — STUDY INTERSECTION IDENTIFIER

X — PROJECT DRIVEWAY IDENTIFIER

ENCLAVE - MAPLEWOOD, MN

STUDY AREA AND INTERSECTION IDENTIFIER

FIGURE 1

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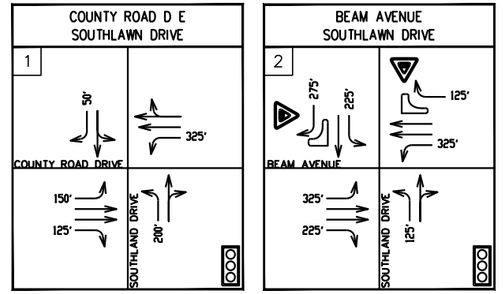

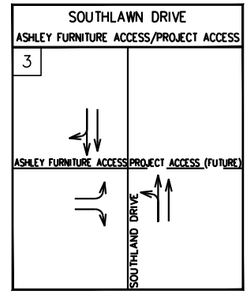

LEGEND

X	STUDY INTERSECTION IDENTIFIER
	SIGNALIZED INTERSECTION
STOP	STOP CONTROLLED APPROACH
XXX'	STORAGE LENGTH IF NO DIMENSION TURN LANE TRANSITIONS FROM A THRU LANE OR IS CONTINUOUS
	LANE CONFIGURATION
X	PROJECT DRIVEWAY IDENTIFIER

ENCLAVE - MAPLEWOOD, MN
EXISTING YEAR 2022 LANE CONFIGURATION AND TRAFFIC CONTROL

FIGURE 2

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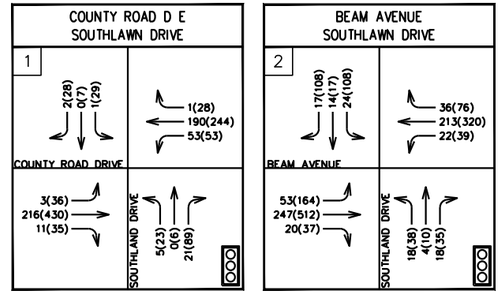

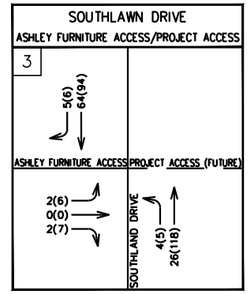

LEGEND

X	PUBLIC STREET STUDY INTERSECTION IDENTIFIER
X	PROJECT DRIVEWAY IDENTIFIER
← XX (XX)	AM(PM) PEAK HOUR TRAFFIC VOLUME
	SIGNALIZED INTERSECTION

ENCLAVE - MAPLEWOOD, MN
YEAR 2022 EXISTING TRAFFIC VOLUMES

FIGURE 3

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4.0 Future Conditions

This section of the report describes the anticipated buildout conditions for the Enclave – Maplewood project in the Year 2024.

4.1 Year 2024 Background Lane Configuration and Traffic Control

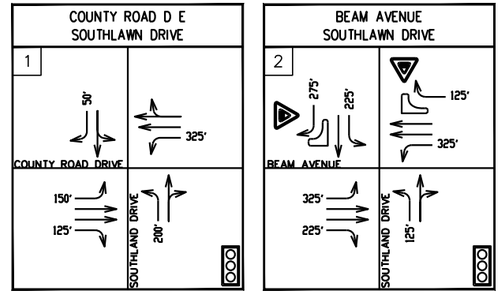
Figure 4 illustrates the anticipated lane configuration and traffic control that are expected at the study area intersections in the background scenario during the buildout year of 2024. The background lane configuration and traffic control are expected to remain unchanged from the existing condition.

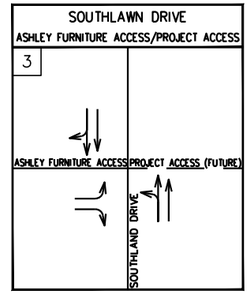
4.2 Year 2024 Background Traffic Volumes

Future baseline traffic volumes near the project site were generated for the anticipated project buildout year of 2024 to determine the impact of project traffic on the surrounding roadway network.

An average annual growth rate for the study area was calculated using historic Minnesota Department of Transportation (MnDOT) average annual daily traffic (AADT) data. An annual average growth rate of 0.8% was obtained from the evaluation of two (2) MnDOT count stations (#37586 and #37587). A conservative 2.0% growth rate was applied to the 2022 peak hour turning movement counts at each of the study intersections in **Figure 3** to generate traffic volumes for the background year of 2024.

The Year 2024 background traffic volumes are illustrated on **Figure 5**. Detailed calculations, along with information from the MnDOT Traffic Mapping Application, are included in **Appendix B**.





LEGEND

X	STUDY INTERSECTION IDENTIFIER
	SIGNALIZED INTERSECTION
STOP	STOP CONTROLLED APPROACH
XXX'	STORAGE LENGTH IF NO DIMENSION TURN LANE TRANSITIONS FROM A THRU LANE OR IS CONTINUOUS
	LANE CONFIGURATION
X	PROJECT DRIVEWAY IDENTIFIER

ENCLAVE - MAPLEWOOD, MN
YEAR 2024 BACKGROUND (NO-BUILD) LANE CONFIGURATION AND TRAFFIC CONTROL

FIGURE 4

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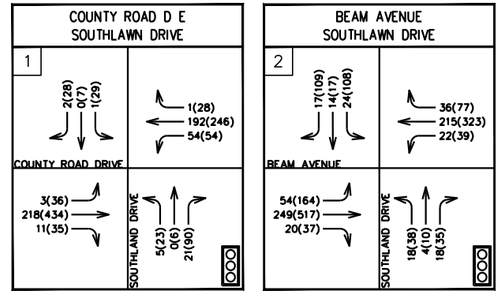

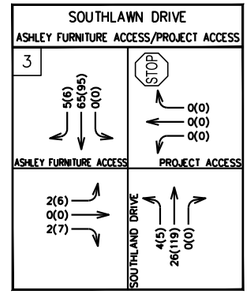

LEGEND

- X — PUBLIC STREET STUDY INTERSECTION IDENTIFIER
- X — PROJECT DRIVEWAY IDENTIFIER
- XX (XX) — AM(PM) PEAK HOUR TRAFFIC VOLUME
- SIGNALIZED INTERSECTION
- STOP — STOP CONTROLLED INTERSECTION

ENCLAVE - MAPLEWOOD, MN
YEAR 2024 BACKGROUND (NO-BUILD) TRAFFIC VOLUMES

FIGURE 5

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4.3 Project Trip Generation

The 11th Edition of the Institute of Transportation Engineers' (ITE) Trip Generation Manual was used to estimate the number of vehicle trips that could be generated by the project. This manual is a standard reference used by municipalities and public agencies throughout the United States. The trip generation characteristics included in the manual are summarized by general land use type and are based on actual trip generation studies performed at numerous locations in areas of various populations.

Vehicular trip generation for the proposed Enclave – Maplewood project is based on average rates for Multifamily Housing (Mid-Rise) (ITE Land Use Code 221). The resulting trip generation is summarized in **Table 2**. Calculations are provided in **Appendix C**.

Table 2 – Enclave – Maplewood Total Vehicular Trip Generation

ITE Code	Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
221	**Multifamily Housing (Mid-Rise)**	241 du	1,094	20	69	89	57	37	94
		Total	**1,094**	**20**	**69**	**89**	**57**	**37**	**94**

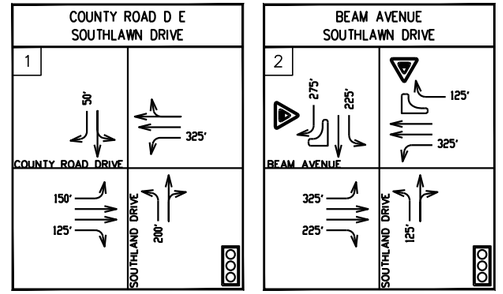
*Sources: ITE Trip Generation Manual, tt*th *Edition*

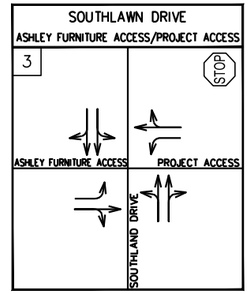
Pedestrian (i.e., walk + bike + transit) trip generation for the proposed Enclave – Maplewood project is based on average rates for Multifamily Housing (Mid-Rise) (ITE Land Use Code 221). The resulting trip generation is summarized in **Table 3**. Calculations are provided in **Appendix C**.

Table 3 – Enclave – Maplewood Total Pedestrian Trip Generation

ITE Code	Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
221	**Multifamily Housing (Mid-Rise)**	241 du	N/A	3	11	14	9	8	17
		Total	**N/A**	**3**	**11**	**14**	**9**	**8**	**17**

*Sources: ITE Trip Generation Manual, tt*th *Edition*





LEGEND

X	STUDY INTERSECTION IDENTIFIER
	SIGNALIZED INTERSECTION
STOP	STOP CONTROLLED APPROACH
XXX'	STORAGE LENGTH IF NO DIMENSION TURN LANE TRANSITIONS FROM A THRU LANE OR IS CONTINUOUS
	LANE CONFIGURATION
X	PROJECT DRIVEWAY IDENTIFIER

ENCLAVE - MAPLEWOOD, MN
YEAR 2024 PROJECT BUILDOUT LANE CONFIGURATION AND TRAFFIC CONTROL

FIGURE 6

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4.4 Project Trip Distribution

The directional distribution of project traffic quantifies the percentage of project-generated traffic that arrives and departs the project site in each direction by type of use. The project includes uses that generate primary project trips. The primary trip distribution quantifies the percentage of site-generated traffic that generally arrives and departs the project site along the same route. Primary trips are new trips to the street network and project driveways. **Figure 7** illustrates the anticipated primary project trip distribution for the Enclave – Maplewood project. The primary trip distribution was based on anticipated access restrictions and internal circulation through each project driveway, anticipated trip origins and destinations with the surrounding areas, and engineering judgment.

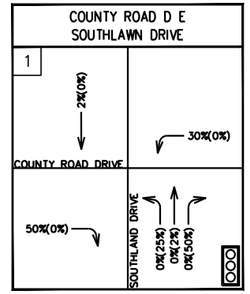
4.5 Project Trip Assignment

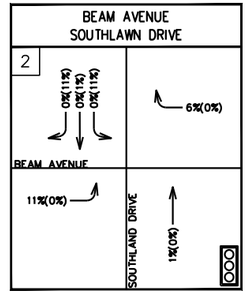
Project traffic assignment was calculated by applying the primary trip distribution percentages found in **Figure 7** to the primary external vehicular project trip generation found in **Table 2**.

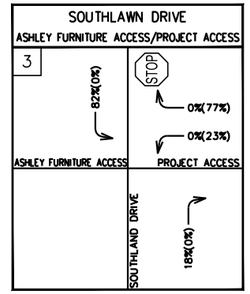
A Vistro model was prepared to distribute and assign the external project trips that were expected to be generated from the Enclave - Maplewood project throughout the study roadway network. The model uses zones to replicate specific areas or land uses within a development plan, links to replicate the roadway network, and gates at the boundary of the model to balance inbound and outbound traffic flows. The resulting traffic assignments at the study intersections and project driveways for the Enclave – Maplewood project are illustrated in **Figure 8** for the primary trip assignment. The inbound and outbound trip generation is rounded to the nearest whole number when assigned in Vistro to the distribution percentages. Therefore, the number of trips assigned to the study intersections may differ slightly from the total external trip generation in **Table 2**.

4.6 Full Buildout Condition Traffic Volumes

The combined impact of background traffic and project traffic on the surrounding roadway network was determined by adding the project traffic assignment from **Figure 8** to the Year 2024 background traffic volumes in **Figure 5**. The traffic volumes illustrated in **Figure 9** represent the anticipated traffic conditions in the study area at the time the project is fully constructed and occupied in the Year 2024.







LEGEND

X	PUBLIC STREET STUDY INTERSECTION IDENTIFIER
X	PROJECT DRIVEWAY IDENTIFIER
⟵ XX%(XX%)	INBOUND (OUTBOND) DISTRIBUTION
	SIGNALIZED INTERSECTION
STOP	STOP CONTROLLED INTERSECTION

ENCLAVE - MAPLEWOOD, MN
PROPOSED TRIP DISTRIBUTION

FIGURE 7

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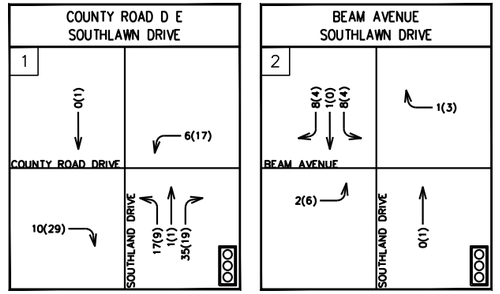

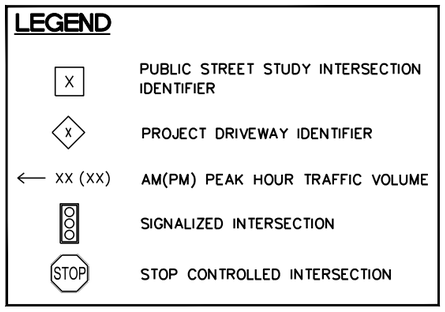

ENCLAVE - MAPLEWOOD, MN
PROPOSED TRIP ASSIGNMENT

FIGURE 8

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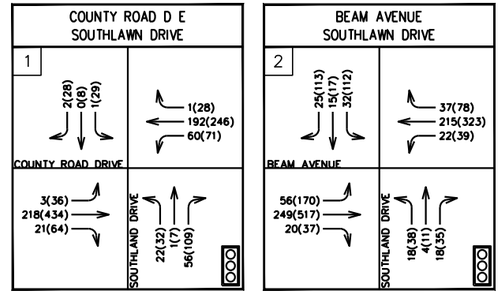

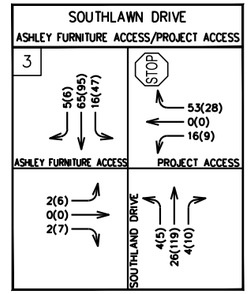

LEGEND

X	PUBLIC STREET STUDY INTERSECTION IDENTIFIER
X	PROJECT DRIVEWAY IDENTIFIER
← XX (XX)	AM(PM) PEAK HOUR TRAFFIC VOLUME
	SIGNALIZED INTERSECTION
STOP	STOP CONTROLLED INTERSECTION

ENCLAVE - MAPLEWOOD, MN
YEAR 2024 TOTAL TRAFFIC VOLUMES

FIGURE 9

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5.0 Traffic Capacity Analysis

Analyses were conducted at the study area intersections identified in **Section 3.4** within the following scenarios:

1. Year 2022 Existing Conditions
2. Year 2024 Background (No-Build) Conditions
3. Year 2024 Project Buildout Conditions – Year 2024 Background (No-Build) Conditions with traffic generated by the 241 proposed lots

The purposes of these analyses are to identify potential capacity constraints in the existing and future study area street network and to quantify the impacts of the Enclave – Maplewood project.

5.1 Operational Analysis Methodology

The study intersections were analyzed using PTV Vistro Version 2022 (SP 0-3) Traffic Engineering Software. Level of Service (LOS) analyses within Vistro for signalized and stop controlled intersections were calculated and reported using the average total delay analysis methodology as presented in the Transportation Research Board's Highway Capacity Manual (HCM 6th Edition). HCM 6th Edition describes LOS as *"a qualitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."* **Table 4** summarizes the average total delay criteria for LOS A through F.

Table 4 – Level of Service Criteria

Level of Service	**Signalized Intersection Average Total Delay** (seconds/vehicle)	**Stop Controlled / Roundabout Intersection Average Total Delay** (seconds/vehicle)
A	≤10	10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Highway Capacity Manual (HCM 6th Edition), Transportation Research Board

5.2 Study Intersection Operational Analysis

Level of Service analyses for the study intersections are provided for the Year 2022 Existing Conditions, the Year 2024 Background Conditions, and the anticipated Year 2024 Full Buildout Conditions. The analyses are based on the lane configurations, traffic control and traffic volumes as illustrated in the following:

- Year 2022 Existing Conditions: **Figure 2** and **Figure 3**
- Year 2024 Background (No-Build) Conditions: **Figure 4** and **Figure 5**
- Year 2024 Project Buildout Conditions: **Figure 6** and **Figure 9**

Summary reports from the LOS analyses are provided for all study intersections in **Appendix D**. All intersections were analyzed using the lowest level of traffic control that provided an acceptable intersection LOS. Analysis for the signalized intersection of County Road D East and Southlawn Drive were completed with the signal timings provided by Ramsey County Public Works. The analysis for the signalized intersection of Beam Avenue and Southlawn Drive used an optimized cycle length with optimized splits, a 3-second yellow interval, and a 1-second all-red clearance interval. Results of the LOS analyses are summarized in **Table 5**.

All intersections are anticipated to operate with acceptable LOS in the AM and PM peak hours.

5.3 Left Turn Storage Bay Analysis

An analysis of all left turn storage bays that are expected to convey project-generated traffic at the study intersections was conducted for the following scenarios:

- Year 2022 Existing Conditions: **Figure 2** and **Figure 3**
- Year 2024 Background (No-Build) Conditions: **Figure 4** and **Figure 5**
- Year 2024 Project Buildout Conditions: **Figure 6** and **Figure 9**

The analysis uses the left turn queue lengths reported by Vistro (see **Appendix D**). **Table 5** summarizes the results of the analysis based on the anticipated traffic control required at full buildout of the Enclave – Maplewood project for defined left turn storage bays.

All impacted left turn storage bays are anticipated to have adequate storage for Year 2024 Full Buildout Condition Scenario.

TABLE 5. KEY INTERSECTION LOS ANALYSIS

INTERSECTION YEAR	TRAFFIC MANEUVER	AM					PM					AM					PM					AM					PM				
		LOS	Delay	Vistro Queue	V/C	Bay Length	LOS	Delay	Vistro Queue	V/C	Bay Length	LOS	Delay	Vistro Queue	V/C	Bay Length	LOS	Delay	Vistro Queue	V/C	Bay Length	LOS	Delay	Vistro Queue	V/C	Bay Length	LOS	Delay	Vistro Queue	V/C	Bay Length
INTERSECTION CONTROL		**YEAR 2022 EXISTING - SIGNALIZED**										**YEAR 2024 (NO-BUILD) - SIGNALIZED**										**YEAR 2024 BUILDOUT - SIGNALIZED**									
INTERSECTION 1. COUNTY ROAD D EAST AND SOUTHLAWN DRIVE	Overall	A	6.40				B	11.32				A	6.38				B	11.35				A	9.10				B	11.97			
	NBL	B	17.17	-	0.040	200 ft	C	28.70	25 ft	0.220	200 ft	B	17.20	3 ft	0.040	200 ft	C	28.67	25 ft	0.220	200 ft	B	19.84	14 ft	0.160	200 ft	C	29.18	36 ft	0.300	200 ft
	NBT	N/A	--	-	-	-	N/A	--	-	-	-	B	16.49	-	--	-	C	21.26	-	-	-	B	15.03	-	-	-	C	21.14	-	-	-
	NBR	B	16.46	12 ft	0.320	-	C	21.29	61 ft	0.360	-	B	16.49	12 ft	0.320	-	C	21.26	62 ft	0.360	-	B	15.03	31 ft	0.340	-	C	21.14	74 ft	0.410	-
	SBL	B	17.16	1 ft	0.020	-	C	20.98	24 ft	0.180	-	B	17.19	1 ft	0.020	-	C	20.93	24 ft	0.180	-	B	17.17	1 ft	0.010	-	C	20.22	24 ft	0.180	-
	SBT	N/A	--	-	-	-	N/A	--	-	-	-	B	17.19	-	--	-	C	20.93	-	-	-	B	17.17	-	-	-	C	20.22	-	-	-
	SBR	B	14.87	1 ft	0.040	50ft	B	19.67	16 ft	0.100	50ft	B	14.90	1 ft	0.040	50ft	B	20 ft	16 ft	0.100	50ft	B	13.61	1 ft	0.010	50ft	B	19.10	15 ft	0.100	50ft
	EBL	A	2.50	0 ft	0.000	150 ft	A	4.41	7 ft	0.050	150 ft	A	2.50	0 ft	0.000	150 ft	A	4.43	7 ft	0.050	150 ft	A	3.93	0 ft	-	150 ft	A	4.69	7 ft	0.050	150 ft
	EBT	A	6.64	-	0.170	-	A	9.81	-	-	-	A	6.65	-	0.170	-	A	9.90	-	-	-	A	8.90	-	-	-	B	10.60	-	-	-
	EBR	A	6.21	2 ft	0.030	125ft	A	8.55	16 ft	0.070	125ft	A	6.22	2 ft	0.030	125ft	A	8.61	16 ft	0.070	125ft	A	8.42	6 ft	0.050	125ft	A	9.65	31 ft	0.130	125ft
	WBU						A	4.40	-	-		A					A	4.43				N/A	--		-		A	4.79		-	
	WBL	A	2.47	2 ft	0.050	325 ft	A	4.40	14 ft	0.070	325 ft	A	2.47	2 ft	0.050	325 ft	A	4.43	14 ft	0.070	325 ft	A	3.96	7 ft	7.330	325 ft	A	4.79	19 ft	0.090	325 ft
	WBT	A	5.02	-	0.120	-	A	8.42	-	0.160	-	A	5.02	-	0.120	-	A	8.46	-	-	-	A	6.84	-	-	-	A	8.84	-	0.170	-
	WBR	A	5.02	12 ft	0.120	-	A	8.44	44 ft	0.160	-	A	5.02	12 ft	0.120	-	A	8.48	44 ft	0.170	-	A	6.84	19 ft	18.790	-	A	8.86	45 ft	0.170	-
INTERSECTION CONTROL		**YEAR 2022 EXISTING - SIGNALIZED**										**YEAR 2024 (NO-BUILD) - SIGNALIZED**										**YEAR 2024 BUILDOUT - SIGNALIZED**									
INTERSECTION 2. BEAM AVENUE AND SOUTHLAWN DRIVE	Overall	A	6.96				A	9.65				A	6.96				A	9.67				A	7.43				A	9.72			
	NBL	B	12.05	6 ft	0.070	125 ft	B	11.90	12 ft	0.110	125 ft	B	12.07	6 ft	0.070	125 ft	B	11.91	12 ft	0.110	125 ft	B	11.77	6 ft	0.070	125 ft	B	11.92	12 ft	0.110	125 ft
	NBT	B	10.35	-	0.120	-	B	10.18	-	0.870	-	B	10.37	-	-	-	B	10.19	-	-	-	B	10.05	-	-	-	B	10.21	-	-	-
	NBR	B	10.35	7 ft	0.120	-	B	10.18	14 ft	0.140	-	B	10.37	7 ft	0.120	-	B	10.19	10 ft	0.140	-	B	10.05	7 ft	0.110	-	B	10.21	15 ft	0.150	-
	SBU	N/A	--				B	13.27	31 ft				--		0.090			13.29	13 ft			N/A	--		-		B	13.41		-	
	SBL	B	12.29	7 ft	0.090	225 ft	B	13.27	31 ft	0.260	225 ft	B	12.31	7 ft	0.090	225 ft	B	13.29	13 ft	0.260	225 ft	B	12.11	9 ft	0.110	225 ft	B	13.41	33 ft	0.270	225 ft
	SBT	B	10.17	-	0.080	-	A	9.85	-	-	-	B	10.19	-	-	-	A	9.85	-	-	-	A	9.92		-	-	A	9.87	-	-	-
	SBR	B	10.24	5 ft	0.090	275 ft	B	11.24	37 ft	0.370	275 ft	B	10.25	5 ft	0.090	275 ft	B	11.27	11 ft	0.370	275 ft	B	10.07	7 ft	0.110	275 ft	B	11.35	39 ft	-	275 ft
	EBU	A	3.11		0.080			5.10				A	3.11		0.080		A	5.12	5 ft			A	3.50				A	5.16		0.380	
	EBL	A	3.11	3 ft	0.080	325 ft	A	5.10	21 ft	0.230	325 ft	A	3.11	3 ft	0.080	325 ft	A	5.12	5 ft	0.230	325 ft	A	3.50	5 ft	0.090	325 ft	A	5.16	22 ft	-	325 ft
	EBT	A	6.46	-	0.230	-	A	9.52	-	-	-	A	6.46	-	-	-	A	9.55	-	-	-	A	6.97	-	0.240	-	A	9.56	-	0.240	-
	EBR	A	5.99	3 ft	0.060	225 ft	A	8.17	9 ft	0.100	225 ft	A	5.98	3 ft	0.060	225 ft	A	8.18	8 ft	0.100	225 ft	A	6.45	4 ft	0.060	225 ft	A	8.19	9 ft	-	225 ft
	WBU	A	3.01		0.040			4.75		-		A	3.01		0.040		A	4.76	5 ft			A	3.38				A	4.78		-	
	WBL	A	3.01	1 ft	0.040	325 ft	A	4.75	5 ft	0.070	325 ft	A	3.01	1 ft	0.040	325 ft	A	4.76	5 ft	0.070	325 ft	A	3.38	0 ft	0.040	325 ft	A	4.78	5 ft	0.070	325 ft
	WBT	A	7.22	-	0.240	-	B	10.67	-	-	-	A	7.24	-	-	-	B	10.70	-	-	-	A	7.82	-	0.260	-	B	10.75	-	-	-
	WBR	A	6.85	7 ft	0.100	125 ft	B	10.39	10 ft	0.250	125 ft	A	6.86	7 ft	0.100	125 ft	B	10.41	10 ft	0.260	125 ft	A	7.41	0 ft	0.110	125 ft	B	10.52	27 ft	0.272	125 ft
INTERSECTION CONTROL		**YEAR 2022 EXISTING**										**YEAR 2024 (NO-BUILD)**										**YEAR 2024 BUILDOUT - TWO-WAY STOP CONTROL**									
INTERSECTION 3. SOUTHLAWN DRIVE AND ASHLEY FURNITURE ACCESS/PROJECT ACCESS	Overall	Not Applicable										Not Applicable										A	4.09				A	2.63			
	NBL																					A	7.37	0 ft	0.000	-	A	7.44	0 ft	0.000	-
	NBT																					N/A	--	-	-	-	N/A	--	0 ft	-	-
	NBR																					N/A	--	-	-	-	N/A	--	0 ft	-	-
	SBL																					A	7.30	1 ft	0.010	-	A	7.56	2 ft	0.040	-
	SBT																					N/A	--	-	-	-	N/A	--	-	-	-
	SBR																					N/A	--	-	-	-	N/A	--	0 ft	-	-
	EBL																					A	9.66	0 ft	0.000	-	B	11.06	1 ft	0.010	-
	EBT																					N/A	--	-	0.000	-	N/A	--	-	0.000	-
	EBR																					A	8.52	0 ft	0.000	-	A	8.63	0 ft	0.010	-
	WBL																					A	9.34	2 ft	0.020	-	B	11.08	1 ft	0.010	-
	WBT																					N/A	--	-	0.000	-	N/A	--	-	0.000	-
	WBR																					A	8.59	4 ft	0.050	-	A	8.80	3 ft	0.030	-

KEY:

LOS = Level of Service

Delay = Average Seconds of Delay Per Vehicle

Vistro Queue = Vistro Software Estimated Turn Left Queue

V/C = Volume to Capacity Ratio

LT Bay Length = Number of Defined Left Turn Lanes and Storage Length

AM = AM Peak Hour of Adjacent Street

PM = PM Peak Hour of Adjacent Street

6.0 Crash Analysis

Crash data was requested for the two (2) study intersections identified in Section 3.4 from the Ramsey County Public Works for the most recent five-year reporting period. The crash data received from Ramsey County Public Works is included in **Appendix E** and is summarized in **Table 6**.

Table 6 – Crash Data Summary

INT #	Intersection	Total Collisions	Property Damage Only	Injury	Fatality
1	County Road D and Southlawn Drive	4	1	2	1
2	Southlawn Drive and Beam Avenue	26	6	20	0
TOTAL		30	7	22	1

A total of 30 crashes were recorded at the two (2) intersections with crash data in the project area during the most recent five-year period. Of those 30 crashes, 7 crashes (23%) were property damage only crashes, 22 crashes (73%) were injury crashes with the remaining crash (4%) being fatal.

7.0 Conclusions and Recommendations

All intersections are anticipated to operate with acceptable LOS in the AM and PM peak hours.

All impacted left turn storage bays are anticipated to have adequate storage for Year 2024 Full Buildout Condition Scenario.

A total of 30 crashes were recorded at the two (2) intersections with crash data in the project area during the most recent five-year period. Of those 30 crashes, 7 crashes (23%) were property damage only crashes, 22 crashes (73%) were injury crashes with the remaining crash (4%) being fatal.

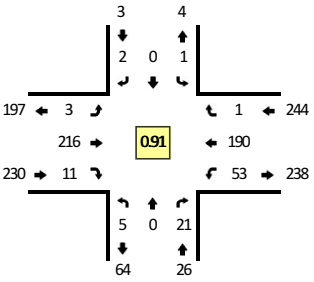
APPENDIX A

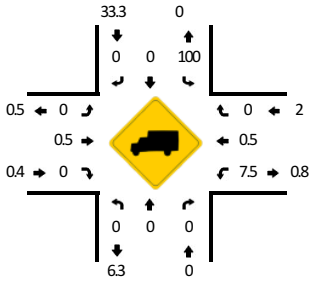
Existing Peak Hour Traffic Count Data

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

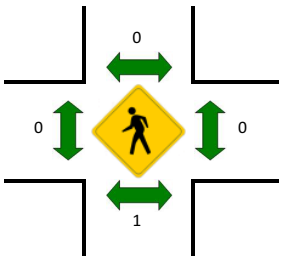
LOCATION: Southlawn Dr -- County Rd D | **QC JOB #:** 15874401
CITY/STATE: Maplewood, MN | **DATE:** Tue, Aug 23 2022

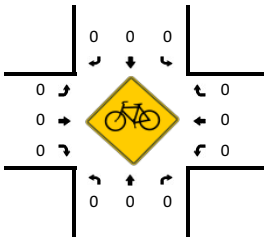
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

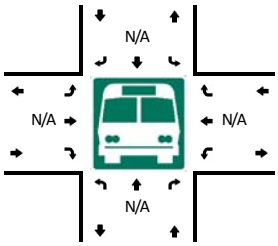


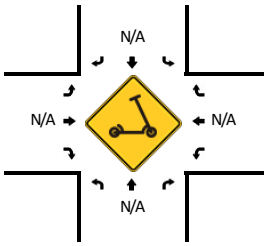


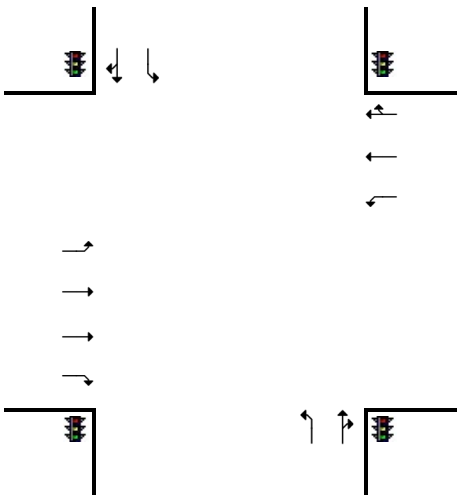
Quality Counts
DATA THAT DRIVES COMMUNITIES











15-Min Count Period Beginning At	Southlawn Dr (Northbound)				Southlawn Dr (Southbound)				County Rd D (Eastbound)				County Rd D (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	0	0	0	0	0	0	0	6	0	0	4	12	0	0	24	
6:15 AM	1	0	0	0	0	0	0	0	0	15	1	0	7	18	0	0	42	
6:30 AM	0	0	3	0	0	0	0	0	0	13	1	0	5	50	0	0	72	
6:45 AM	2	0	5	0	0	0	0	0	0	11	2	0	22	79	0	0	121	259
7:00 AM	1	0	3	0	0	0	0	0	0	11	3	1	8	27	1	0	55	290
7:15 AM	1	0	7	0	0	0	1	0	1	33	1	0	18	43	0	0	105	353
7:30 AM	2	0	1	0	0	0	0	0	1	60	3	0	17	54	0	0	138	419
7:45 AM	0	0	5	0	1	0	1	0	1	51	4	0	15	47	1	0	126	424
8:00 AM	1	0	6	0	0	0	0	0	0	56	3	0	9	41	0	0	116	485
8:15 AM	2	0	9	0	0	0	1	0	1	49	1	0	12	48	0	0	123	503
8:30 AM	3	0	10	0	0	0	0	0	1	25	6	0	9	52	2	0	108	473
8:45 AM	2	0	8	0	0	1	2	0	0	38	7	0	15	37	0	0	110	457

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	0	4	0	0	0	0	0	4	240	12	0	68	216	0	0	552
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 8/31/2022 8:41 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

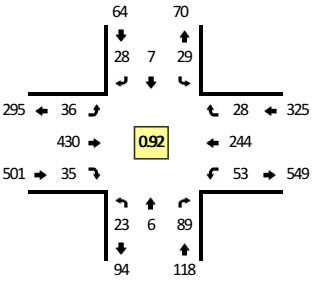
Type of peak hour being reported: Intersection Peak

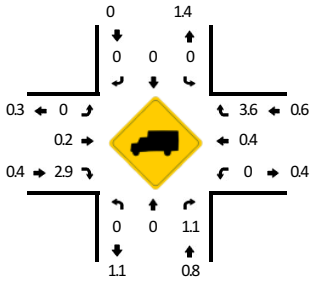
Method for determining peak hour: Total Entering Volume

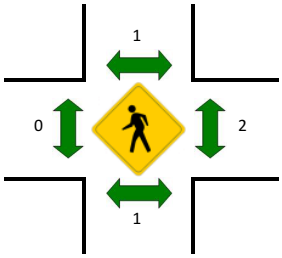
LOCATION: Southlawn Dr -- County Rd D
CITY/STATE: Maplewood, MN

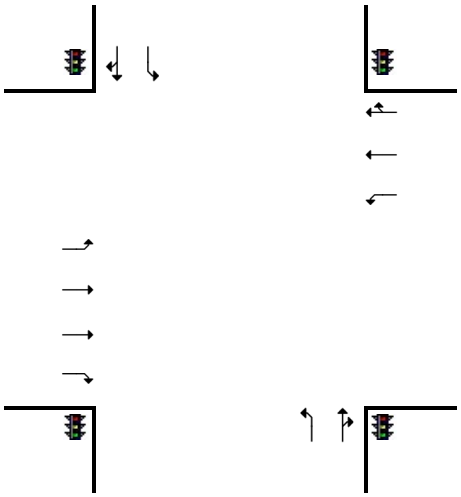
QC JOB #: 15874402
DATE: Tue, Aug 23 2022

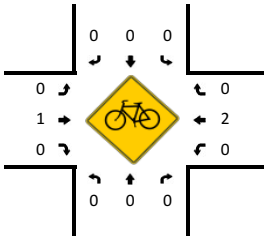
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

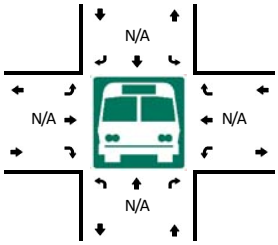


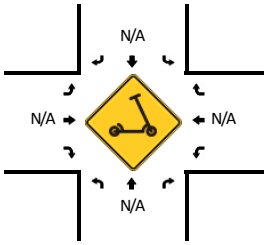












15-Min Count Period Beginning At	Southlawn Dr (Northbound)				Southlawn Dr (Southbound)				County Rd D (Eastbound)				County Rd D (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	8	3	32	0	7	1	5	0	10	93	13	0	24	63	10	2	271	
3:15 PM	10	2	35	0	8	3	4	0	9	68	13	2	10	70	1	0	235	
3:30 PM	6	3	32	0	11	7	5	0	2	93	12	0	16	70	8	0	265	
3:45 PM	5	5	21	0	4	3	6	0	5	96	9	0	8	60	9	0	231	1002
4:00 PM	6	2	29	0	11	3	5	0	9	110	10	0	10	59	10	0	264	995
4:15 PM	5	1	35	0	6	3	5	0	7	75	10	0	14	55	9	0	225	985
4:30 PM	10	1	24	0	7	2	8	0	9	122	6	0	14	61	5	0	269	989
4:45 PM	5	2	26	0	6	1	7	0	9	78	6	0	6	53	9	1	209	967
5:00 PM	6	0	21	0	8	0	5	0	11	122	10	0	18	66	7	0	274	977
5:15 PM	2	3	18	0	8	4	8	0	7	108	13	0	14	64	7	0	256	1008
5:30 PM	10	2	27	0	8	3	5	0	9	79	13	0	9	71	4	0	240	979
5:45 PM	9	2	19	0	10	3	2	0	4	79	9	0	15	57	4	0	213	983

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	0	84	0	32	0	20	0	44	488	40	0	72	264	28	0	1096
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 8/31/2022 8:41 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Ramsey County Public Works

Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

Cars and Peds

Site Code:
Study Date: 05/17/2022

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Int Total
05:00		0	0	0	0	0		1	2	0	1	4		0	0	1	0	1		0	4	2	0	6	11
05:15		1	0	0	0	1		1	6	0	0	7		0	0	0	0	0		0	3	3	0	6	14
05:30		0	0	1	0	1		1	11	0	0	12		0	0	2	0	2		0	3	3	1	7	22
05:45		1	0	3	0	4		1	16	1	0	18		0	2	3	0	5		1	10	8	0	19	46
Total	0	2	0	4	0	6	0	4	35	1	1	41	0	0	2	6	0	8	0	1	20	16	1	38	93
06:00		1	2	1	0	4		3	21	5	1	30		1	1	2	0	4		1	7	8	1	17	55
06:15		4	2	1	0	7		5	26	0	0	31		0	1	0	0	1		1	10	9	2	22	61
06:30		4	0	1	0	5		6	36	0	0	42		2	0	2	0	4		5	18	8	0	31	82
06:45		2	2	2	0	6		6	60	3	3	72		3	2	4	0	9		3	46	10	0	59	146
Total	0	11	6	5	0	22	0	20	143	8	4	175	0	6	4	8	0	18	0	10	81	35	3	129	344
07:00		0	2	5	0	7		8	51	1	0	60		1	0	4	0	5		1	22	7	2	32	104
07:15		4	0	3	0	7		7	59	0	3	69		0	1	2	0	3		0	26	13	4	43	122
07:30		2	0	2	0	4		4	57	2	3	66		2	0	6	0	8		0	55	15	3	73	151
07:45		4	1	6	0	11		7	65	2	2	76		2	0	3	0	5		6	51	14	1	72	164
Total	0	10	3	16	0	29	0	26	232	5	8	271	0	5	1	15	0	21	0	7	154	49	10	220	541
08:00		3	0	2	0	5		6	71	2	2	81		5	0	4	0	9		3	39	9	1	52	147
08:15		4	4	6	0	14		8	57	3	1	69		5	0	3	0	8		3	76	11	2	92	183
08:30		4	6	8	0	18		9	43	3	3	58		4	4	4	0	12		6	65	14	0	85	173
08:45		6	4	8	0	18		13	42	7	1	63		4	0	7	0	11		8	67	19	1	95	187
Total	0	17	14	24	0	55	0	36	213	15	7	271	0	18	4	18	0	40	0	20	247	53	4	324	690
09:00		3	3	6	0	12		16	49	3	1	69		6	1	3	0	10		6	67	15	0	88	179
09:15		9	2	10	0	21		11	57	1	2	71		1	3	5	0	9		2	66	19	3	90	191
09:30		8	2	13	0	23		14	70	4	1	89		7	5	7	0	19		3	63	23	2	91	222
09:45		15	1	12	0	28		20	78	6	1	105		5	1	5	0	11		2	90	32	1	125	269
Total	0	35	8	41	0	84	0	61	254	14	5	334	0	19	10	20	0	49	0	13	286	89	6	394	861

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Int Total
10:00		16	3	19	0	38		19	94	6	4	123		3	0	4	0	7		6	87	32	4	129	297
10:15		17	1	17	0	35		15	71	6	0	92		3	2	4	0	9		2	85	28	2	117	253
10:30		20	2	10	0	32		16	73	5	1	95		9	0	6	0	15		4	84	43	2	133	275
10:45		14	2	10	0	26		24	94	3	3	124		4	0	4	0	8		8	126	27	1	162	320
Total	0	67	8	56	0	131	0	74	332	20	8	434	0	19	2	18	0	39	0	20	382	130	9	541	1145
11:00		25	4	24	0	53		19	77	9	3	108		4	3	7	0	14		11	92	33	0	136	311
11:15		22	4	26	0	52		19	82	10	0	111		5	7	6	0	18		4	127	41	2	174	355
11:30		26	5	24	0	55		19	74	6	4	103		13	5	8	0	26		6	106	34	1	147	331
11:45		32	5	23	0	60		21	91	5	0	117		4	4	3	0	11		2	134	40	1	177	365
Total	0	105	18	97	0	220	0	78	324	30	7	439	0	26	19	24	0	69	0	23	459	148	4	634	1362
12:00		23	4	31	0	58		20	88	10	2	120		8	4	7	0	19		5	121	39	0	165	362
12:15		23	2	20	0	45		24	113	10	2	149		8	3	10	0	21		8	108	26	1	143	358
12:30		23	3	24	0	50		21	98	15	0	134		2	5	7	0	14		7	104	39	4	154	352
12:45		18	3	24	0	45		18	101	13	3	135		6	4	9	0	19		5	95	35	5	140	339
Total	0	87	12	99	0	198	0	83	400	48	7	538	0	24	16	33	0	73	0	25	428	139	10	602	1411
13:00		26	4	33	0	63		20	87	8	1	116		7	2	5	0	14		4	104	39	0	147	340
13:15		19	3	24	0	46		16	120	8	3	147		5	5	2	0	12		3	97	28	2	130	335
13:30		24	5	24	0	53		19	108	12	2	141		7	2	5	0	14		4	112	34	1	151	359
13:45		32	7	33	0	72		17	85	10	5	117		6	5	9	0	20		4	105	33	2	144	353
Total	0	101	19	114	0	234	0	72	400	38	11	521	0	25	14	21	0	60	0	15	418	134	5	572	1387
14:00		28	3	25	0	56		20	92	6	1	119		11	3	5	0	19		5	107	30	2	144	338
14:15		14	5	22	0	41		27	132	8	1	168		5	2	13	0	20		4	107	29	1	141	370
14:30		28	5	25	0	58		8	93	4	2	107		5	4	11	0	20		8	106	25	3	142	327
14:45		22	2	27	0	51		18	86	6	4	114		7	3	6	0	16		4	97	41	3	145	326
Total	0	92	15	99	0	206	0	73	403	24	8	508	0	28	12	35	0	75	0	21	417	125	9	572	1361
15:00		19	8	31	0	58		25	90	6	0	121		4	5	12	0	21		7	98	31	1	137	337
15:15		26	3	30	0	59		23	89	6	3	121		4	3	7	0	14		6	117	32	3	158	352
15:30		17	2	21	0	40		20	90	6	4	120		12	2	14	0	28		3	135	34	2	174	362
15:45		19	5	28	0	52		21	74	7	2	104		11	4	9	0	24		9	125	30	2	166	346
Total	0	81	18	110	0	209	0	89	343	25	9	466	0	31	14	42	0	87	0	25	475	127	8	635	1397
16:00		24	7	24	0	55		17	78	9	1	105		9	1	9	0	19		13	128	46	1	188	367
16:15		24	2	27	1	54		28	87	6	1	122		10	6	12	0	28		6	130	33	1	170	374
16:30		39	5	28	0	72		12	91	9	1	113		10	1	9	0	20		12	137	39	2	190	395
16:45		21	3	20	0	44		19	64	12	0	95		6	2	8	0	16		6	117	40	2	165	320

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Int Total
Total	0	108	17	99	1	225	0	76	320	36	3	435	0	35	10	38	0	83	0	37	512	158	6	713	1456
17:00		21	4	14	1	40		23	88	7	3	121		6	1	7	0	14		13	133	40	0	186	361
17:15		19	1	19	0	39		16	98	9	1	124		5	3	12	0	20		7	124	45	2	178	361
17:30		22	4	18	0	44		26	78	5	0	109		4	4	10	0	18		16	134	37	1	188	359
17:45		20	8	21	0	49		22	75	14	1	112		7	1	9	0	17		8	105	47	3	163	341
Total	0	82	17	72	1	172	0	87	339	35	5	466	0	22	9	38	0	69	0	44	496	169	6	715	1422
18:00		30	4	25	0	59		30	91	4	2	127		5	0	8	0	13		5	96	44	2	147	346
18:15		27	2	23	0	52		30	86	11	0	127		3	7	14	0	24		7	89	40	1	137	340
18:30		29	3	25	0	57		23	85	15	1	124		7	3	17	0	27		2	105	56	2	165	373
18:45		26	2	21	0	49		14	71	9	2	96		10	7	6	0	23		7	89	48	0	144	312
Total	0	112	11	94	0	217	0	97	333	39	5	474	0	25	17	45	0	87	0	21	379	188	5	593	1371
19:00		25	3	29	0	57		16	59	7	2	84		5	4	7	0	16		2	66	37	1	106	263
19:15		34	3	25	0	62		13	70	6	2	91		4	7	6	0	17		7	48	17	5	77	247
19:30		22	1	15	0	38		18	78	4	3	103		3	0	6	0	9		5	67	27	1	100	250
19:45		23	1	21	0	45		14	80	6	4	104		7	0	15	0	22		5	56	22	0	83	254
Total	0	104	8	90	0	202	0	61	287	23	11	382	0	19	11	34	0	64	0	19	237	103	7	366	1014
20:00		26	2	21	0	49		17	61	9	6	93		5	2	8	0	15		6	54	16	2	78	235
20:15		22	3	19	1	45		7	41	6	3	57		7	0	6	0	13		8	55	6	2	71	186
20:30		12	0	16	0	28		7	37	2	1	47		2	2	9	0	13		4	38	10	0	52	140
20:45		8	0	7	0	15		4	24	4	2	34		3	2	6	0	11		2	27	12	0	41	101
Total	0	68	5	63	1	137	0	35	163	21	12	231	0	17	6	29	0	52	0	20	174	44	4	242	662
21:00		10	1	8	0	19		6	39	3	0	48		1	0	2	0	3		1	34	3	0	38	108
21:15		13	0	8	0	21		3	28	0	2	33		1	0	1	0	2		1	22	4	0	27	83
21:30		9	2	3	0	14		0	18	5	0	23		12	3	5	0	20		2	17	5	0	24	81
21:45		11	0	8	0	19		1	13	0	0	14		3	0	4	0	7		2	20	5	2	29	69
Total	0	43	3	27	0	73	0	10	98	8	2	118	0	17	3	12	0	32	0	6	93	17	2	118	341
Grand Total	0	1125	182	1110	3	2420	0	982	4619	390	113	6104	0	336	154	436	0	926	0	327	5258	1724	99	7408	16858
Appr %		46.5	7.5	45.9	0.1			16.1	75.7	6.4	1.9			36.3	16.6	47.1	0			4.4	71	23.3	1.3		
Total %		6.7	1.1	6.6	0			5.8	27.4	2.3	0.7			2	0.9	2.6	0			1.9	31.2	10.2	0.6		

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Peds	Right	Thru	Left	U-Turn	Appr Total	Int Total
AM Pk Hr		11:45	11:45	11:45	11:45	11:45		11:45	11:45	11:45	11:45	11:45		11:45	11:45	11:45	11:45	11:45		11:45	11:45	11:45	11:45	11:45	11:45
AM Pk Vol		101	14	98	0	213		86	390	40	4	520		22	16	27	0	65		22	467	144	6	639	1437
AM PHF		0.789	0.700	0.790	NaN	0.888		0.896	0.863	0.667	0.500	0.872		0.688	0.800	0.675	NaN	0.774		0.688	0.871	0.900	0.375	0.903	0.984
PM Pk Hr		15:45	15:45	15:45	15:45	15:45		15:45	15:45	15:45	15:45	15:45		15:45	15:45	15:45	15:45	15:45		15:45	15:45	15:45	15:45	15:45	15:45
PM Pk Vol		106	19	107	1	233		78	330	31	5	444		40	12	39	0	91		40	520	148	6	714	1482
PM PHF		0.679	0.679	0.955	0.250	0.809		0.696	0.907	0.861	0.625	0.910		0.909	0.500	0.813	NaN	0.813		0.769	0.949	0.804	0.750	0.939	0.938

Ramsey County Public Works

Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

Trucks and Bikes

Site Code:
Study Date: 05/17/2022

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Int Total
05:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
05:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
05:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
05:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
06:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
06:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
06:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
07:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
07:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
07:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
08:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
08:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
08:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
09:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
09:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
09:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Int Total
10:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
10:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
10:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
10:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
11:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
11:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
11:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
12:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
12:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
12:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
13:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
13:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
13:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
14:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
14:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
14:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
15:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
15:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
15:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
16:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
16:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
16:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Int Total
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
17:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
17:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
17:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
18:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
18:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
18:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
19:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
19:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
19:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
20:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
20:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
20:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
21:15		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
21:30		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
21:45		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Appr %		-2	-2	-2	-2			-2	-2	-2	-2			-2	-2	-2	-2			-2	-2	-2	-2		
Total %		-3	-3	-3	-3			-3	-3	-3	-3			-3	-3	-3	-3			-3	-3	-3	-3		

	Southlawn Drive Southbound						Beam Avenue Westbound						Southlawn Drive Northbound						Beam Avenue Eastbound						
Time	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Bikes	Right	Thru	Left	U-Turn	Appr Total	Int Total
AM Pk Hr		12:00	12:00	12:00	12:00	12:00		12:00	12:00	12:00	12:00	12:00		12:00	12:00	12:00	12:00	12:00		12:00	12:00	12:00	12:00	12:00	12:00
AM Pk Vol		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
AM PHF		NaN	NaN	NaN	NaN	NaN		NaN	NaN	NaN	NaN	NaN		NaN	NaN	NaN	NaN	NaN		NaN	NaN	NaN	NaN	NaN	NaN
PM Pk Hr		21:15	21:15	21:15	21:15	21:15		21:15	21:15	21:15	21:15	21:15		21:15	21:15	21:15	21:15	21:15		21:15	21:15	21:15	21:15	21:15	21:15
PM Pk Vol		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	0
PM PHF		NaN	NaN	NaN	NaN	NaN		NaN	NaN	NaN	NaN	NaN		NaN	NaN	NaN	NaN	NaN		NaN	NaN	NaN	NaN	NaN	NaN

Ramsey County Public Works

Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

All Vehicles

Site Code:
Study Date: 05/17/2022

	Southlawn Drive Southbound					Beam Avenue Westbound					Southlawn Drive Northbound					Beam Avenue Eastbound					
Time	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Int Total
05:00	0	0	0	0	0	1	2	0	1	4	0	0	1	0	1	0	4	2	0	6	11
05:15	1	0	0	0	1	1	6	0	0	7	0	0	0	0	0	0	3	3	0	6	14
05:30	0	0	1	0	1	1	11	0	0	12	0	0	2	0	2	0	3	3	1	7	22
05:45	1	0	3	0	4	1	16	1	0	18	0	2	3	0	5	1	10	8	0	19	46
Total	2	0	4	0	6	4	35	1	1	41	0	2	6	0	8	1	20	16	1	38	93
06:00	1	2	1	0	4	3	21	5	1	30	1	1	2	0	4	1	7	8	1	17	55
06:15	4	2	1	0	7	5	26	0	0	31	0	1	0	0	1	1	10	9	2	22	61
06:30	4	0	1	0	5	6	36	0	0	42	2	0	2	0	4	5	18	8	0	31	82
06:45	2	2	2	0	6	6	60	3	3	72	3	2	4	0	9	3	46	10	0	59	146
Total	11	6	5	0	22	20	143	8	4	175	6	4	8	0	18	10	81	35	3	129	344
07:00	0	2	5	0	7	8	51	1	0	60	1	0	4	0	5	1	22	7	2	32	104
07:15	4	0	3	0	7	7	59	0	3	69	0	1	2	0	3	0	26	13	4	43	122
07:30	2	0	2	0	4	4	57	2	3	66	2	0	6	0	8	0	55	15	3	73	151
07:45	4	1	6	0	11	7	65	2	2	76	2	0	3	0	5	6	51	14	1	72	164
Total	10	3	16	0	29	26	232	5	8	271	5	1	15	0	21	7	154	49	10	220	541
08:00	3	0	2	0	5	6	71	2	2	81	5	0	4	0	9	3	39	9	1	52	147
08:15	4	4	6	0	14	8	57	3	1	69	5	0	3	0	8	3	76	11	2	92	183
08:30	4	6	8	0	18	9	43	3	3	58	4	4	4	0	12	6	65	14	0	85	173
08:45	6	4	8	0	18	13	42	7	1	63	4	0	7	0	11	8	67	19	1	95	187
Total	17	14	24	0	55	36	213	15	7	271	18	4	18	0	40	20	247	53	4	324	690
09:00	3	3	6	0	12	16	49	3	1	69	6	1	3	0	10	6	67	15	0	88	179
09:15	9	2	10	0	21	11	57	1	2	71	1	3	5	0	9	2	66	19	3	90	191
09:30	8	2	13	0	23	14	70	4	1	89	7	5	7	0	19	3	63	23	2	91	222
09:45	15	1	12	0	28	20	78	6	1	105	5	1	5	0	11	2	90	32	1	125	269
Total	35	8	41	0	84	61	254	14	5	334	19	10	20	0	49	13	286	89	6	394	861

	Southlawn Drive Southbound					Beam Avenue Westbound					Southlawn Drive Northbound					Beam Avenue Eastbound					
Time	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Int Total
10:00	16	3	19	0	38	19	94	6	4	123	3	0	4	0	7	6	87	32	4	129	297
10:15	17	1	17	0	35	15	71	6	0	92	3	2	4	0	9	2	85	28	2	117	253
10:30	20	2	10	0	32	16	73	5	1	95	9	0	6	0	15	4	84	43	2	133	275
10:45	14	2	10	0	26	24	94	3	3	124	4	0	4	0	8	8	126	27	1	162	320
Total	67	8	56	0	131	74	332	20	8	434	19	2	18	0	39	20	382	130	9	541	1145
11:00	25	4	24	0	53	19	77	9	3	108	4	3	7	0	14	11	92	33	0	136	311
11:15	22	4	26	0	52	19	82	10	0	111	5	7	6	0	18	4	127	41	2	174	355
11:30	26	5	24	0	55	19	74	6	4	103	13	5	8	0	26	6	106	34	1	147	331
11:45	32	5	23	0	60	21	91	5	0	117	4	4	3	0	11	2	134	40	1	177	365
Total	105	18	97	0	220	78	324	30	7	439	26	19	24	0	69	23	459	148	4	634	1362
12:00	23	4	31	0	58	20	88	10	2	120	8	4	7	0	19	5	121	39	0	165	362
12:15	23	2	20	0	45	24	113	10	2	149	8	3	10	0	21	8	108	26	1	143	358
12:30	23	3	24	0	50	21	98	15	0	134	2	5	7	0	14	7	104	39	4	154	352
12:45	18	3	24	0	45	18	101	13	3	135	6	4	9	0	19	5	95	35	5	140	339
Total	87	12	99	0	198	83	400	48	7	538	24	16	33	0	73	25	428	139	10	602	1411
13:00	26	4	33	0	63	20	87	8	1	116	7	2	5	0	14	4	104	39	0	147	340
13:15	19	3	24	0	46	16	120	8	3	147	5	5	2	0	12	3	97	28	2	130	335
13:30	24	5	24	0	53	19	108	12	2	141	7	2	5	0	14	4	112	34	1	151	359
13:45	32	7	33	0	72	17	85	10	5	117	6	5	9	0	20	4	105	33	2	144	353
Total	101	19	114	0	234	72	400	38	11	521	25	14	21	0	60	15	418	134	5	572	1387
14:00	28	3	25	0	56	20	92	6	1	119	11	3	5	0	19	5	107	30	2	144	338
14:15	14	5	22	0	41	27	132	8	1	168	5	2	13	0	20	4	107	29	1	141	370
14:30	28	5	25	0	58	8	93	4	2	107	5	4	11	0	20	8	106	25	3	142	327
14:45	22	2	27	0	51	18	86	6	4	114	7	3	6	0	16	4	97	41	3	145	326
Total	92	15	99	0	206	73	403	24	8	508	28	12	35	0	75	21	417	125	9	572	1361
15:00	19	8	31	0	58	25	90	6	0	121	4	5	12	0	21	7	98	31	1	137	337
15:15	26	3	30	0	59	23	89	6	3	121	4	3	7	0	14	6	117	32	3	158	352
15:30	17	2	21	0	40	20	90	6	4	120	12	2	14	0	28	3	135	34	2	174	362
15:45	19	5	28	0	52	21	74	7	2	104	11	4	9	0	24	9	125	30	2	166	346
Total	81	18	110	0	209	89	343	25	9	466	31	14	42	0	87	25	475	127	8	635	1397
16:00	24	7	24	0	55	17	78	9	1	105	9	1	9	0	19	13	128	46	1	188	367
16:15	24	2	27	1	54	28	87	6	1	122	10	6	12	0	28	6	130	33	1	170	374
16:30	39	5	28	0	72	12	91	9	1	113	10	1	9	0	20	12	137	39	2	190	395
16:45	21	3	20	0	44	19	64	12	0	95	6	2	8	0	16	6	117	40	2	165	320
Total	108	17	99	1	225	76	320	36	3	435	35	10	38	0	83	37	512	158	6	713	1456

	Southlawn Drive Southbound					Beam Avenue Westbound					Southlawn Drive Northbound					Beam Avenue Eastbound					
Time	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Int Total
17:00	21	4	14	1	40	23	88	7	3	121	6	1	7	0	14	13	133	40	0	186	361
17:15	19	1	19	0	39	16	98	9	1	124	5	3	12	0	20	7	124	45	2	178	361
17:30	22	4	18	0	44	26	78	5	0	109	4	4	10	0	18	16	134	37	1	188	359
17:45	20	8	21	0	49	22	75	14	1	112	7	1	9	0	17	8	105	47	3	163	341
Total	82	17	72	1	172	87	339	35	5	466	22	9	38	0	69	44	496	169	6	715	1422
18:00	30	4	25	0	59	30	91	4	2	127	5	0	8	0	13	5	96	44	2	147	346
18:15	27	2	23	0	52	30	86	11	0	127	3	7	14	0	24	7	89	40	1	137	340
18:30	29	3	25	0	57	23	85	15	1	124	7	3	17	0	27	2	105	56	2	165	373
18:45	26	2	21	0	49	14	71	9	2	96	10	7	6	0	23	7	89	48	0	144	312
Total	112	11	94	0	217	97	333	39	5	474	25	17	45	0	87	21	379	188	5	593	1371
19:00	25	3	29	0	57	16	59	7	2	84	5	4	7	0	16	2	66	37	1	106	263
19:15	34	3	25	0	62	13	70	6	2	91	4	7	6	0	17	7	48	17	5	77	247
19:30	22	1	15	0	38	18	78	4	3	103	3	0	6	0	9	5	67	27	1	100	250
19:45	23	1	21	0	45	14	80	6	4	104	7	0	15	0	22	5	56	22	0	83	254
Total	104	8	90	0	202	61	287	23	11	382	19	11	34	0	64	19	237	103	7	366	1014
20:00	26	2	21	0	49	17	61	9	6	93	5	2	8	0	15	6	54	16	2	78	235
20:15	22	3	19	1	45	7	41	6	3	57	7	0	6	0	13	8	55	6	2	71	186
20:30	12	0	16	0	28	7	37	2	1	47	2	2	9	0	13	4	38	10	0	52	140
20:45	8	0	7	0	15	4	24	4	2	34	3	2	6	0	11	2	27	12	0	41	101
Total	68	5	63	1	137	35	163	21	12	231	17	6	29	0	52	20	174	44	4	242	662
21:00	10	1	8	0	19	6	39	3	0	48	1	0	2	0	3	1	34	3	0	38	108
21:15	13	0	8	0	21	3	28	0	2	33	1	0	1	0	2	1	22	4	0	27	83
21:30	9	2	3	0	14	0	18	5	0	23	12	3	5	0	20	2	17	5	0	24	81
21:45	11	0	8	0	19	1	13	0	0	14	3	0	4	0	7	2	20	5	2	29	69
Total	43	3	27	0	73	10	98	8	2	118	17	3	12	0	32	6	93	17	2	118	341
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1125	182	1110	3	2420	982	4619	390	113	6104	336	154	436	0	926	327	5258	1724	99	7408	16858
Appr %	46.5	07.5	45.9	00.1		16.1	75.7	06.4	01.9		36.3	16.6	47.1	00.0		04.4	71.0	23.3	01.3		
Total %	06.7	01.1	06.6	00.0		05.8	27.4	02.3	00.7		02.0	00.9	02.6	00.0		01.9	31.2	10.2	00.6		
% Trucks	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	00.0	-	00.0	00.0	00.0	00.0	00.0	00.0	00.0

	Southlawn Drive Southbound					Beam Avenue Westbound					Southlawn Drive Northbound					Beam Avenue Eastbound					
Time	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Right	Thru	Left	U-Turn	Appr Total	Int Total
AM Pk Hr	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45	11:45
AM Pk Vol	101	14	98	0	213	86	390	40	4	520	22	16	27	0	65	22	467	144	6	639	1437
AM PHF	0.789	0.700	0.790	NaN	0.888	0.896	0.863	0.667	0.500	0.872	0.688	0.800	0.675	NaN	0.774	0.688	0.871	0.900	0.375	0.903	0.984
PM Pk Hr	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45	15:45
PM Pk Vol	106	19	107	1	233	78	330	31	5	444	40	12	39	0	91	40	520	148	6	714	1482
PM PHF	0.679	0.679	0.955	0.250	0.809	0.696	0.907	0.861	0.625	0.910	0.909	0.500	0.813	NaN	0.813	0.769	0.949	0.804	0.750	0.939	0.938

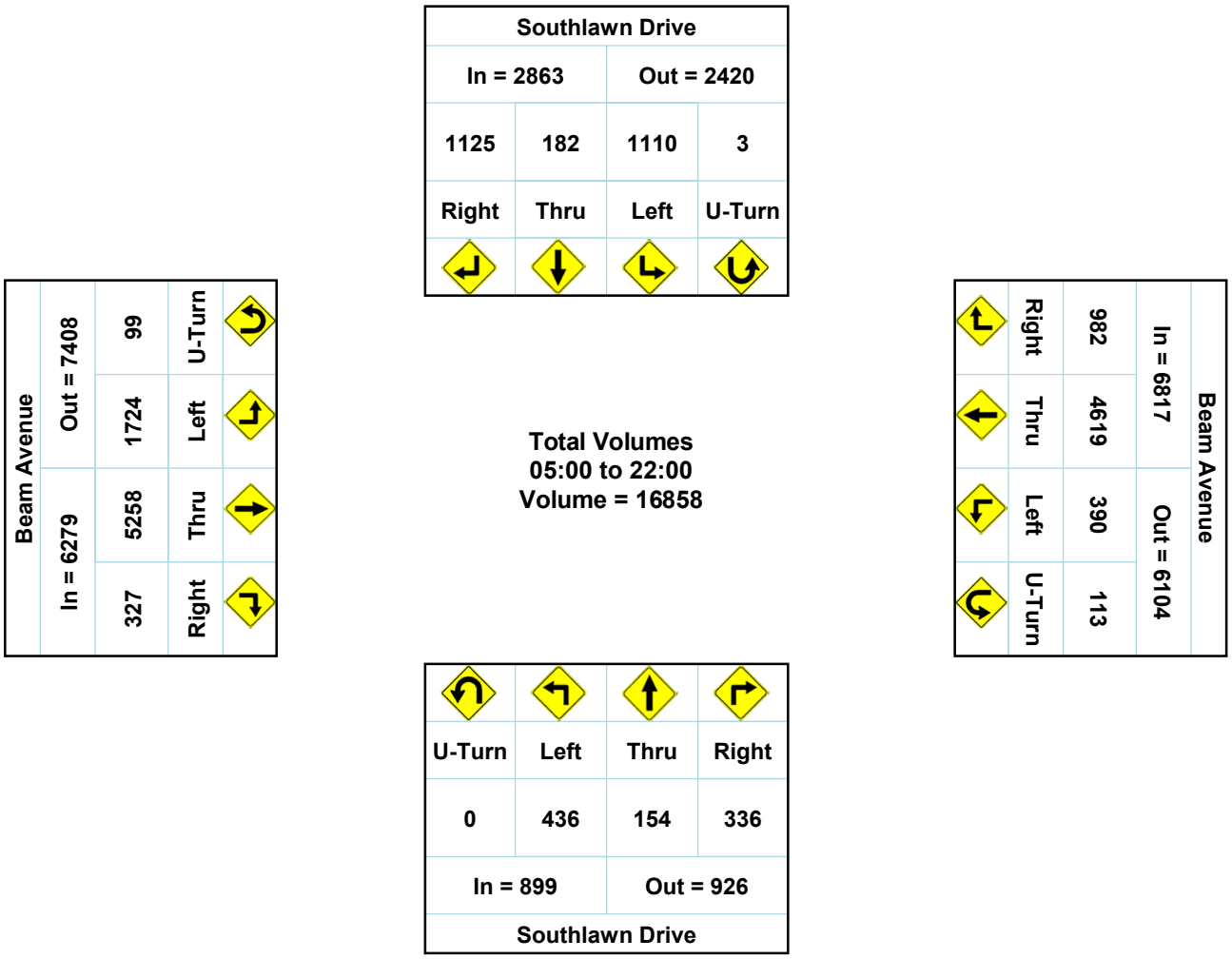
Ramsey County Public Works

Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

All Vehicles

Site Code:
Study Date: 05/17/2022



Ramsey County Public Works
Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

All Vehicles

Site Code:
Study Date: 05/17/2022

Southlawn Drive			
101	14	98	0
Right	Thru	Left	U-Turn

Beam Avenue		
6	U-Turn	
144	Left	
467	Thru	
22	Right	

AM Peak Hour Statistics
AM Peak Hour Begins: 11:45
AM Peak Hour Volume: 1437
AM Peak Hour Factor: 0.984

Right	86	Beam Avenue	
Thru	390		
Left	40		
U-Turn	4		

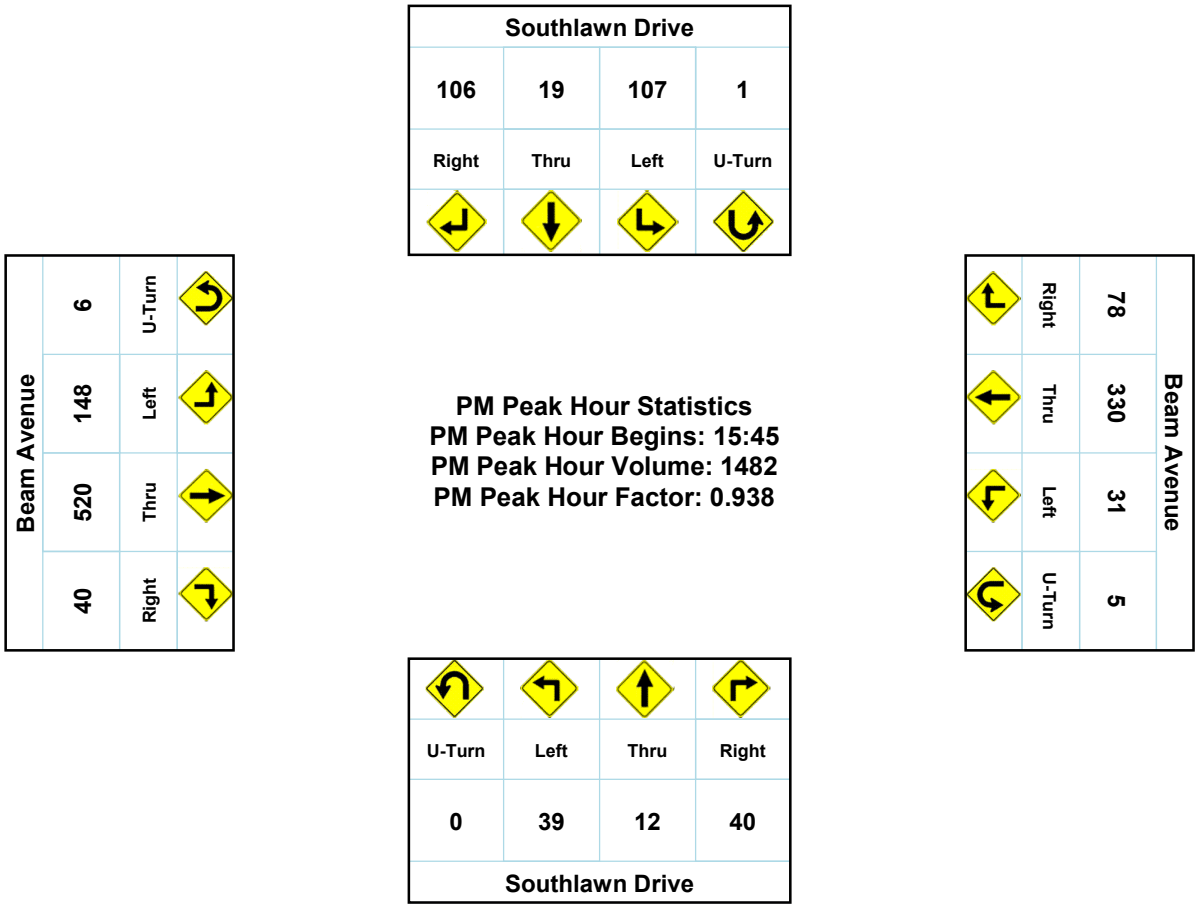
U-Turn	Left	Thru	Right
0	27	16	22
Southlawn Drive			

Ramsey County Public Works
Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

All Vehicles

Site Code:
Study Date: 05/17/2022



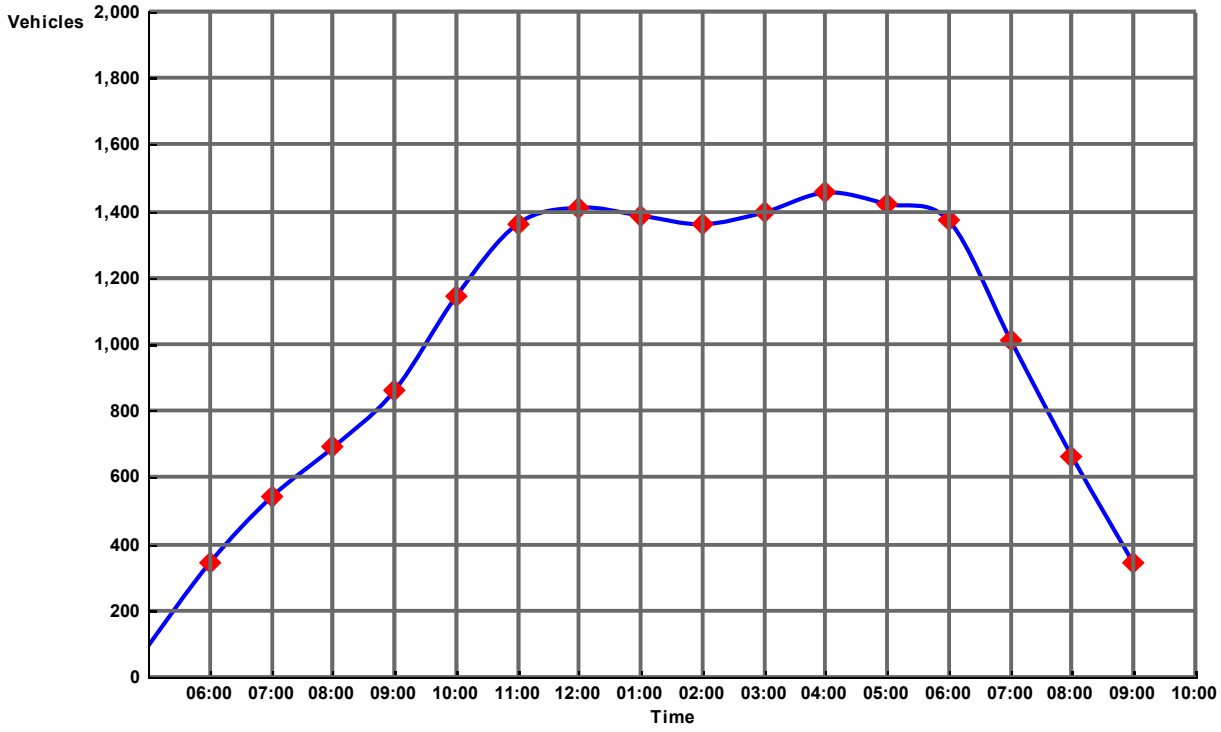
Ramsey County Public Works

Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

Cars

Site Code:
Study Date: 05/17/2022



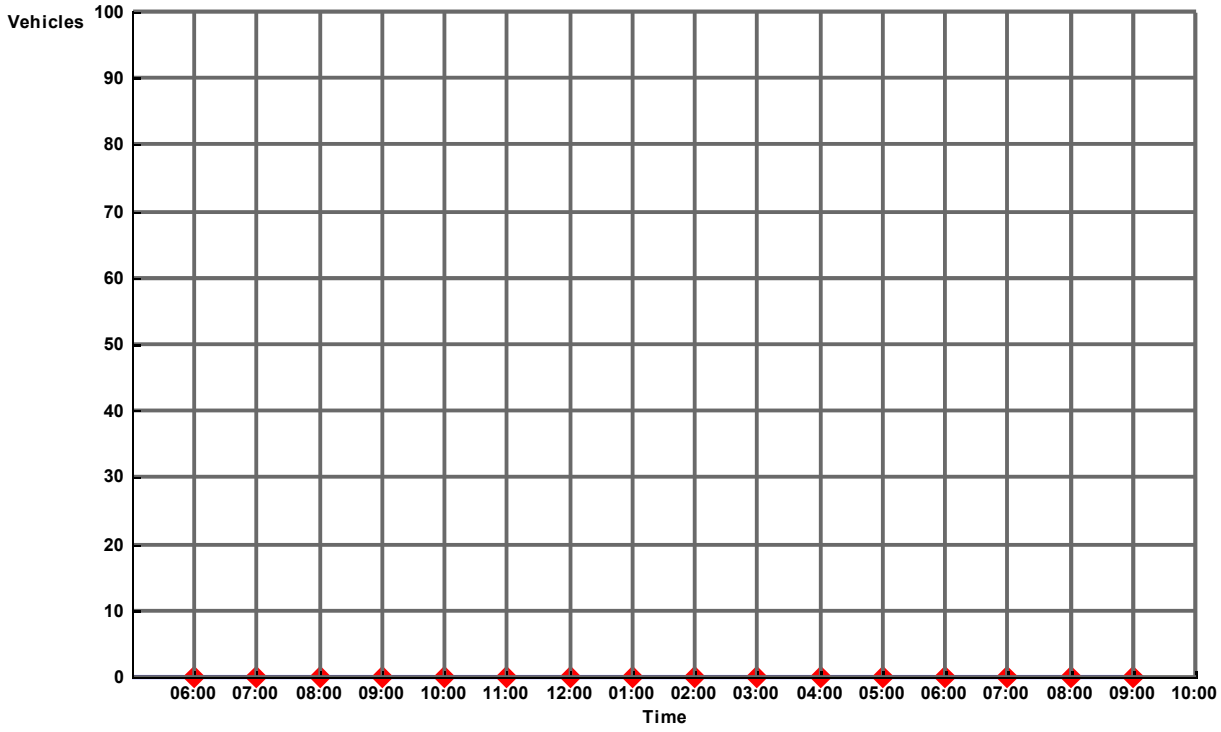
Ramsey County Public Works

Turning Movement Count

File Name: Beam Avenue at Southlawn Drive 0500-2200
Location: Beam Avenue at Southlawn Drive

Trucks

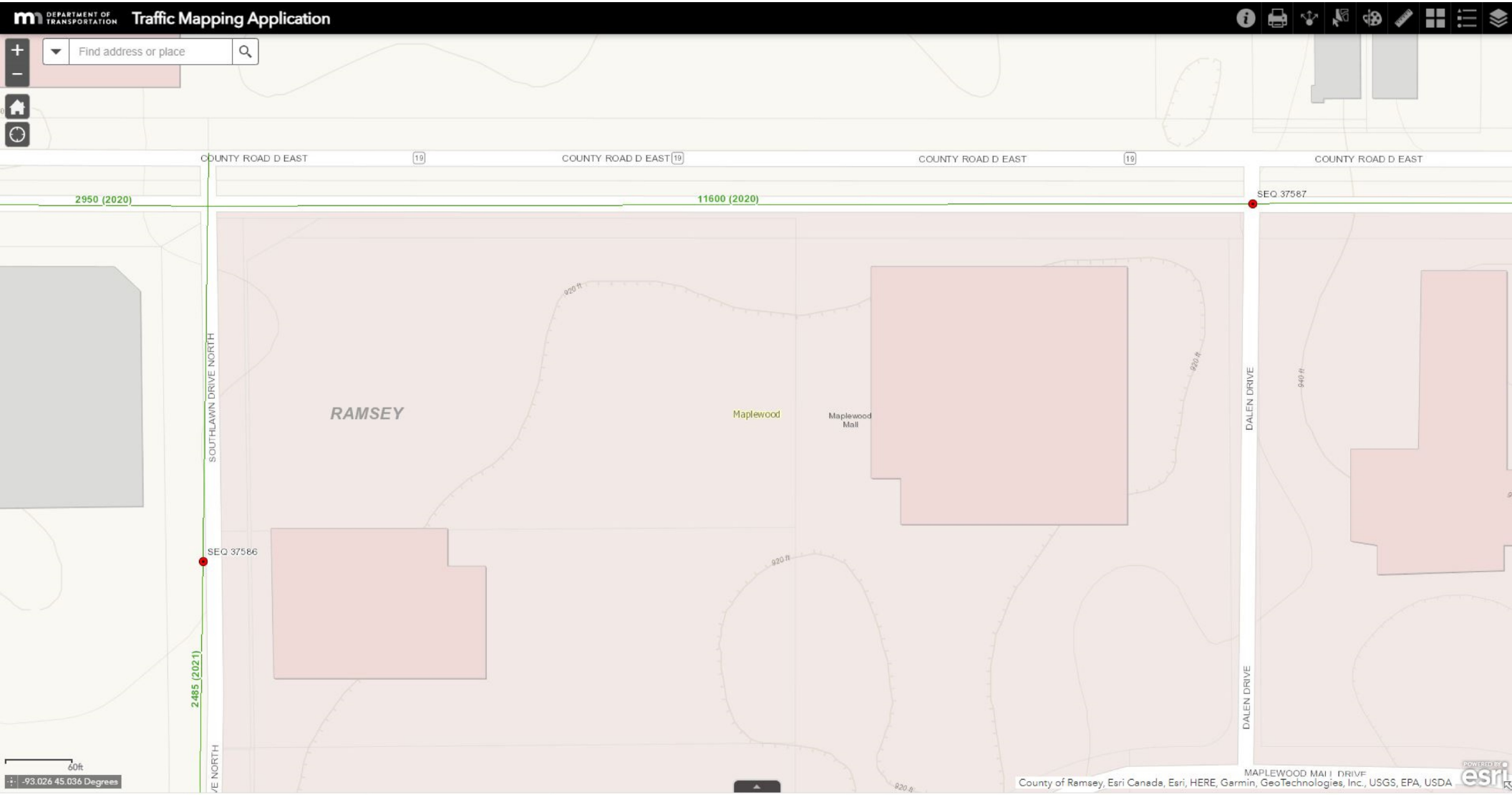
Site Code:
Study Date: 05/17/2022



APPENDIX B

Information from the Minnesota Department of Transportation (MnDOT) Traffic Mapping Application

Growth Rate Calculations


DEPARTMENT OF TRANSPORTATION
Traffic Mapping Application
Find address or place
COUNTY ROAD D EAST
19
COUNTY ROAD D EAST
19
COUNTY ROAD D EAST
19
COUNTY ROAD D EAST
2950 (2020)
11600 (2020)
SEQ 37587
SOUTHLAWN DRIVE NORTH
RAMSEY
Maplewood
Maplewood Mall
DALEN DRIVE
DALEN DRIVE
SEQ 37586
2485 (2021)
MAPLEWOOD MALL DRIVE
60ft
-93.026 45.036 Degrees
County of Ramsey, Esri Canada, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, USDA
esri

SEQUENCE_NUMBER	DATA_YEAR	AADT	DATA_TYPE	AADT_COMMENTS	ROUTE_LABEL	STREET_NAME	LOCATION_DESCRIPTION	COUNTY_NAME	CITY_NAME
37586	2021	2485	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	2018	4300	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	2017	4450	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	2013	4750	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	2009	4850	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	2005	3400	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	2001	3400	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37586	1997	2600	A	21 COVID, 17 Avg Hist (13 Cnt), 09 RCH, New Dev	MSAS 117	Southlawn Dr	S OF MSAS121 (CO RD D)	Ramsey	Maplewood
37587	2020	11600	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	
37587	2014	9500	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	
37587	2011	13000	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	
37587	2009	13000	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	
37587	2005	13000	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	
37587	2001	11800	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	
37587	1997	15000	A	20 COVID, 18 No AADT, 14 See Hist, 13 No AADT, 11 E	CSAH 19	E County Rd D	W OF CSAH65 (WHITE BEAR AV)	Ramsey	

Westwood GROWTH RATE CALCULATIONS

Project Name: Enclave - Maplewood
Calculations by: PJV Date: September 16, 2022 Project #: R0037066.00

Minnesota Department of Transportation - *2022* *Traffic Mapping Application*

This spreadsheet calculates average annual growth at the identified MnDOT count stations and then averages those growth rates to estimate the average annual growth rate for the study area.

0.8% Study Area Average Annual Growth Rate (Average of all MnDOT Count Stations)

2 Number of MnDOT count stations

ID: 1	MnDOT Count Station: 37586		
Roadway:	Southlawn Dr		
Location:	S of MSAS121 (CO RD D)		
Year	ADT	Average Annual Growth	-1.9%
2013	4,750		
2018	4,322		
2020	4,162	Projected Traffic Volumes Using Average Annual Growth Rate	
2023	3,933		
2024	3,859		

ID: 2	MnDOT Count Station: 37587		
Roadway:	E County Rd D		
Location:	W of CSAH65 (WHITE BEAR AV)		
Year	ADT	Average Annual Growth	3.4%
2014	9,500		
2020	11,600		
2022	12,399	Projected Traffic Volumes Using Average Annual Growth Rate	
2025	13,701		
2026	14,164		

ID:	MnDOT Count Station:		
Roadway:			
Location:			
Year	ADT	Average Annual Growth	
		Projected Traffic Volumes Using Average Annual Growth Rate	

ID: 4	MnDOT Count Station:		
Roadway:			
Location:			
Year	ADT	Average Annual Growth	
		Projected Traffic Volumes Using Average Annual Growth Rate	

ID: 5	MnDOT Count Station:		
Roadway:			
Location:			
Year	ADT	Average Annual Growth	
		Projected Traffic Volumes Using Average Annual Growth Rate	

ID: 6	MnDOT Count Station:		
Roadway:			
Location:			
Year	ADT	Average Annual Growth	
		Projected Traffic Volumes Using Average Annual Growth Rate	

ID: 7	MnDOT Count Station:		
Roadway:			
Location:			
Year	ADT	Average Annual Growth	
		Projected Traffic Volumes Using Average Annual Growth Rate	

ID:	MnDOT Count Station:		
Roadway:			
Location:			
Year	ADT	Average Annual Growth	
		Projected Traffic Volumes Using Average Annual Growth Rate	

APPENDIX C

Project Trip Generation

Westwood TRIP GENERATION CALCULATIONS

Project Name: Enclave - Myth
Calculations by: PJV Date: September 16, 2022 Project #: R0037066.00

ITE *Trip Generation - 11th Edition*

Equation Type:	Average Rate
Land Use Code:	221
Variable (X):	Dwelling Units

Multifamily Housing (Mid-Rise)

Number of (X):	**241**

T = Average Vehicle Trip Ends

AM Peak Hour

One hour between 7AM to 9AM (Adjacent Street)

T = (X) * 0.37 Trip Ends Per Dwelling Units

T = **89** Trip Ends

Directional Distribution:

23% Entering **21** Entering* 77% Exiting **69** Exiting*

**Rounding may occur in calculations*

PM Peak Hour

One hour between 4PM to 6PM (Adjacent Street)

T = (X) * 0.39 Trip Ends Per Dwelling Units

T = **94** Trip Ends

Directional Distribution:

61% Entering* **57** Entering* 39% Exiting **37** Exiting*

**Rounding may occur in calculations*

Weekday

Daily Weekday

T = (X) * 4.54 Trip Ends Per Dwelling Units

T = **1,094** Trip Ends

Directional Distribution:

50% Entering **547** Entering* 50% Exiting **547** Exiting*

**Rounding may occur in calculations*

Pass-By Reduction

Non Pass-By Trip End Percentage	
AM	100%
PM	100%

Pass-By Trip End Percentage	
AM	0%
PM	0%

Non Pass-By Trip Ends:

AM	21	Entering	69	Exiting
PM	57	Entering	37	Exiting

**Rounding may occur in calculations*

Pass-By Trip Ends:

AM	0	Entering	0	Exiting
PM	0	Entering	0	Exiting

**Rounding may occur in calculations*

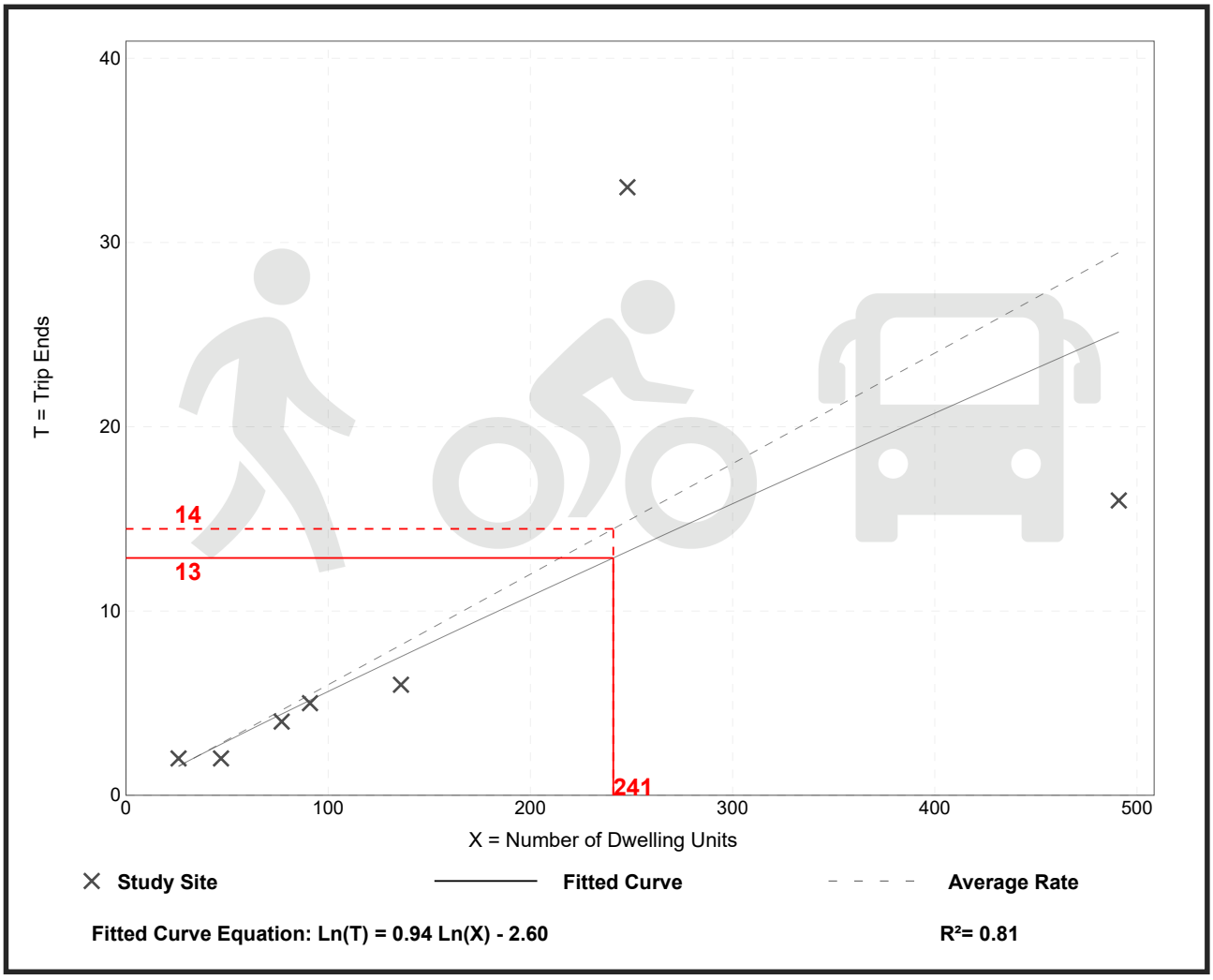
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Walk+Bike+Transit Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Dwelling Units: 159
Directional Distribution: 27% entering, 73% exiting

Walk+Bike+Transit Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.06	0.03 - 0.13	0.04

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.94 Ln(X) - 2.60

R^2= 0.81

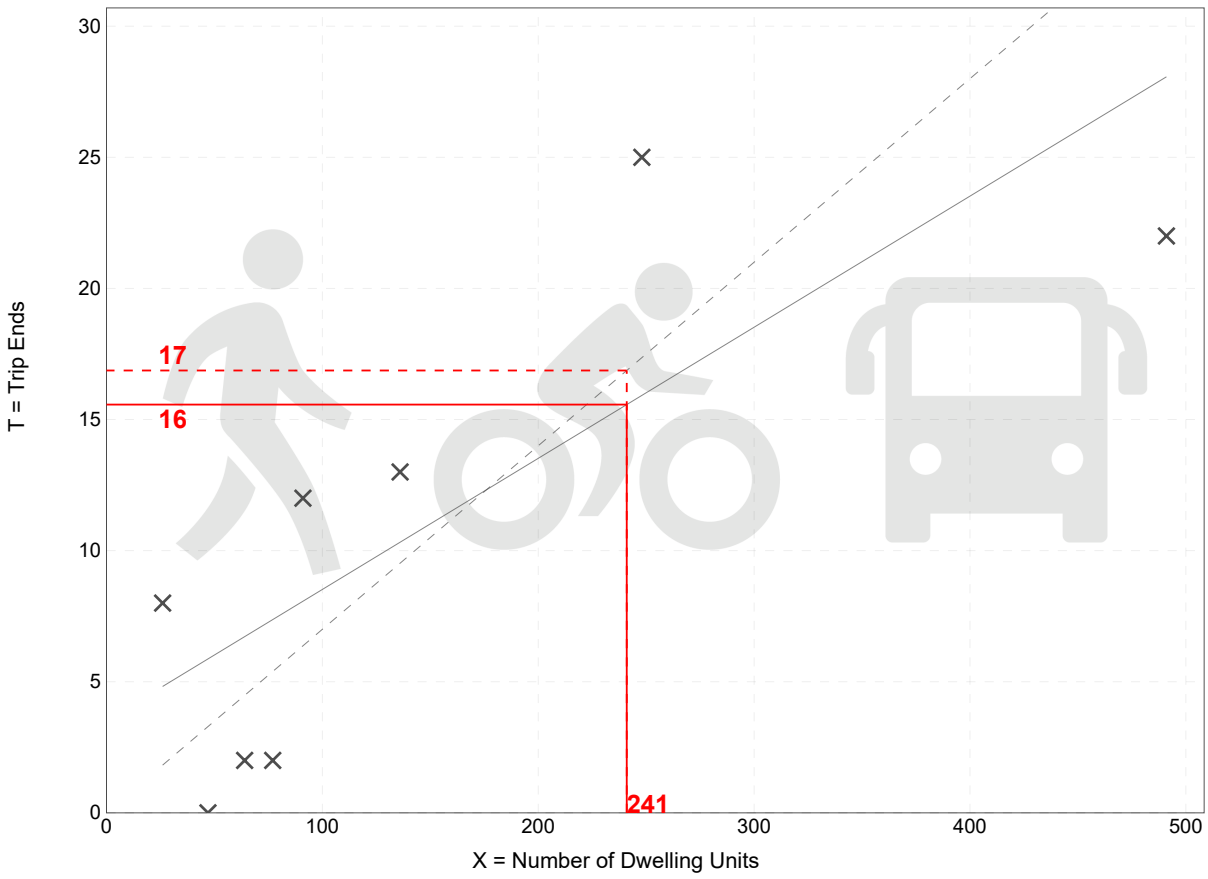
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Walk+Bike+Transit Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. Num. of Dwelling Units: 148
Directional Distribution: 55% entering, 45% exiting

Walk+Bike+Transit Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.07	0.00 - 0.31	0.05

Data Plot and Equation



Fitted Curve Equation: T = 0.05(X) + 3.52

R^2= 0.62

APPENDIX D

Traffic Signal Timing Plan at County Road D East / Southlawn Drive

Traffic Signal Plan at County Road D East / Southlawn Drive

VISTRO Capacity Analyses

NOTES:
1. THE LOCATION OF POLES, LOOP DETECTORS, VIDEO DETECTION CAMERAS, AND EQUIPMENT PAD SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. ITEMS DENOTED WITH A ● ARE INCIDENTAL TO THE INTERCONNECT PAY ITEM.
3. SIGNING SHOWN IN POLE NOTES ARE INCIDENTAL TO THE SIGNAL SYSTEM.
4. ALL MAST ARM MOUNTED TYPE "D" SIGNS ARE INCIDENTAL TO THE SIGNAL SYSTEM.
5. CONTRACTOR SHALL VERIFY GROUND WATER LEVELS WHEN INSTALLING POLE. FOUNDATIONS AND SHALL DE-WATER AS NECESSARY DURING FOUNDATION INSTALLATION. THIS WORK SHALL BE INCIDENTAL TO THE SIGNAL SYSTEM.
6. NO OPEN CUT TRENCHING OF THE ROADWAYS WILL BE ALLOWED IN AREAS THAT ARE OPEN TO TRAFFIC OR WILL BE REOPENED TO TRAFFIC PRIOR TO THE INSTALLATION OF PAVEMENT.
7. SEE OTHER PLAN SHEETS FOR PEDESTRIAN RAMPS, GROUND MOUNTED SIGNING, PAVEMENT AND CROSSWALK MARKINGS, AND ROADWAY PLANS.
8. THE LOCATION OF THE TRANSFORMER HAS NOT BEEN FINALIZED. THE CONTRACTOR SHALL COORDINATE WITH XCEL ENERGY.
9. VIDEO DETECTION CAMERAS SHALL BE MOUNTED ON 6 FT. HEIGHT EXTENSION BRACKET.
10. ALL PEDESTRIAN DETECTORS SHALL BE ACCESSIBLE PEDESTRIAN DETECTORS. PEDESTRIAN PUSH BUTTON STATION SHALL BE IN ACCORDANCE WITH THE DETAILS. SEE PEDESTRIAN PUSH BUTTON STATION DETAIL.
11. INTERCONNECT, LISTED AS 1-24/C SM/MM FIBER, SHALL BE 12 MUTLIMODE, 12 SINGLEMODE FIBER OPTIC CABLE FROM MN/DOT APPROVED PRODUCT LIST.

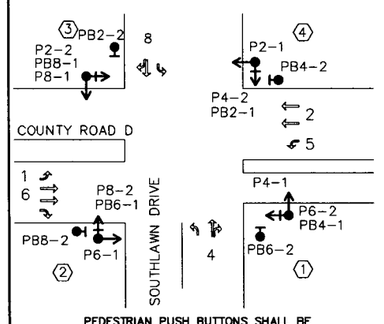
(A) EQUIPMENT PAD - SEE DETAILS
SERVICE CABINET
EXTEND INTO HH 8
2" NMC
3-1/C #4
EXTEND INTO HH 1
2" NMC
1-3/C #14 (LUM)
EXTEND INTO HH 7
2" NMC
1-3/C #14 (LUM)

CONTROLLER CABINET
EXTEND INTO HH 1
4" NMC
4-12/C #14
3-3/C #14
2-3/C #18
2-3/C #20
2-1/C #6 INS. GRD.
4-2/C #14
EXTEND INTO HH 7
4" NMC
4-12/C #14
3-3/C #14
2-3/C #18
2-3/C #20
2-1/C #6 INS. GRD.
4-2/C #14
● 1-24/C SM/MM FIBER
● 1-1/C #14

BETWEEN SERVICE AND CONTROLLER CABINET
1.25" NMC
2-1/C #6
1-1/C #6 (BARE)

(B) SOP - TRANSFORMER (BY XCEL)
2' CONDUIT TO HH 6
3-1/C #4
2" WEATHERHEAD AND RISER

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATIONS
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING THE PROTECTED/PERMITTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 & 6 SHALL OPERATE ON RECALL.

(3) W.B. STA. 79+04, 21' LT.
PA 90 POLE FOUNDATION
TYPE PA90-A-30-T30-10
2-ONE WAY SIGNALS OVERHEAD
(0' & 11' FROM END OF MAST ARM)
2-POLE MOUNTED ONE WAY SIGNALS AT 45° AND 225°
ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT (PHASES 2 & 5)(MOUNTED AT 6')
VIDEO DETECTION (PHASES 2 & 5)(MOUNTED AT 3')
LUMINARE-200W HPS @ 350°
2-POLE MOUNTED ONE WAY
16" PEDESTRIAN HEADS MOUNTED AT 45° AND 225°
1-APS PUSH BUTTON AND SIGN (LT ARROW)(PB8-1)
1-SIGN (D-3) Southlawn Dr
1-SIGN (R10-12, 36"X48") Left Turn Yield on Green
EXTEND INTO HH 3
3" NMC
2-12/C #14
2-3/C #14
1-3/C #18
1-3/C #20
1-3/C #14 (LUM)
1-2/C #14
1-1/C #6 INS. GRD.

W.B. STA. 79+23, 27' LT.
APS PED PB STA (PB2-2)
1-APS PEDESTRIAN PUSH BUTTON AND SIGN (RT ARROW)
EXTEND INTO HH 3
1.25" NMC
1-2/C #14

(2) E.B. STA. 79+11, 40' RT.
PA 90 POLE FOUNDATION
TYPE PA90-A-30
1-ONE WAY SIGNAL OVERHEAD
(0' & 11' FROM END OF MAST ARM)
2-POLE MOUNTED ONE WAY SIGNALS AT 45° & 225°
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASE 8)(MOUNTED AT 6')
VIDEO DETECTION (PHASE 8)(MOUNTED AT 3')
2-POLE MOUNTED ONE WAY 16" PEDESTRIAN HEADS MOUNTED AT 45° AND 225°
1-APS PUSH BUTTON AND SIGN (LT ARROW)(PB 6-1)
1-SIGN (D-2) Co Rd D
EXTEND INTO HH 2
3" NMC
2-12/C #14
1-3/C #14
1-3/C #18
1-3/C #20
1-2/C #14
1-1/C #6 INS. GRD.

4" NMC
2-12/C #14
1-3/C #14
1-3/C #18
1-3/C #20
1-1/C #6 INS. GRD.
2-2/C #14

E.B. STA. 78+99, 30' RT.
APS PED PB STA (PB8-2)
1-APS PEDESTRIAN PUSH BUTTON AND SIGN (RT ARROW)
EXTEND INTO HH 2
1.25" NMC
1-2/C #14

(4) W.B. STA. 79+81, 27' LT.
PA 85 POLE FOUNDATION
TYPE PA85-A-20
1-ONE WAY SIGNAL OVERHEAD
(0' FROM END OF MAST ARM)
2-POLE MOUNTED ONE WAY SIGNALS AT 45° & 225°
ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT (PHASE 4)(MOUNTED AT 6')
VIDEO DETECTION (PHASE 4)(MOUNTED AT 3')
2-POLE MOUNTED ONE WAY
16" PEDESTRIAN HEADS MOUNTED AT 45° AND 225°
1-APS PUSH BUTTON AND SIGN (LT ARROW)(PB2-1)
1-SIGN (D-4) Co Rd D
EXTEND INTO HH 4
3" NMC
2-12/C #14
1-3/C #14
1-3/C #18
1-3/C #20
1-2/C #14
1-1/C #6 INS. GRD.

4" NMC
2-12/C #14
2-5/C #14
1-3/C #18
1-3/C #20
1-3/C #14 (LUM)
1-1/C #6 INS. GRD.
2-2/C #14

W.B. STA. 79+96, 21' LT.
APS PED PB STA (PB4-2)
1-APS PEDESTRIAN PUSH BUTTON AND SIGN (RT ARROW)
EXTEND INTO HH 4
1.25" NMC
1-2/C #14

4" NMC
4-12/C #14
3-3/C #14
2-3/C #18
2-3/C #20
1-3/C #14 (LUM)
2-1/C #6 INS. GRD.
4-2/C #14

2" NMC
3-1/C #4

(1) E.B. STA. 79+99, 26' RT.
PA 90 POLE FOUNDATION
TYPE PA90-A-35-T30-10
2-ONE WAY SIGNALS OVERHEAD
(0' & 11' FROM END OF MAST ARM)
2-POLE MOUNTED ONE WAY SIGNALS AT 45° & 225°
ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT (PHASES 1 & 6)(MOUNTED AT 6')
VIDEO DETECTION (PHASES 1 &6)(MOUNTED AT 3')
LUMINARE-200W HPS @ 350°
2-POLE MOUNTED ONE WAY 16" PEDESTRIAN HEADS MOUNTED AT 45° AND 225°
1-APS PUSH BUTTON AND SIGN (LT ARROW)(PB 4-1)
1-SIGN (D-1) Southlawn Dr
1-SIGN (R10-12 36"X48") Left Turn Yield on Green
EXTEND INTO HH 1
3" NMC
2-12/C #14
2-3/C #14
1-3/C #18
1-3/C #20
1-3/C #14 (LUM)
1-2/C #14
1-1/C #6 INS. GRD.

E.B. STA. 79+90, 36' RT.
APS PED PB STA (PB6-2)
1-APS PEDESTRIAN PUSH BUTTON AND SIGN (RT ARROW)
EXTEND INTO HH 1
1.25" NMC
1-2/C #14

RAMSEY COUNTY INTERSECTION ID#: TRF 672
METER ADDRESS: TBD

SIGNAL HEAD PHASING

HEADS (2-3), (2-4), (6-3), (6-4)

ø2 ø6 — R, Y, G
ø1 ø5 — Y, G

NOTE: LOCATION = DISTANCE FROM STOP BAR OR CROSSWALK TO FRONT OF LOOP DETECTION.

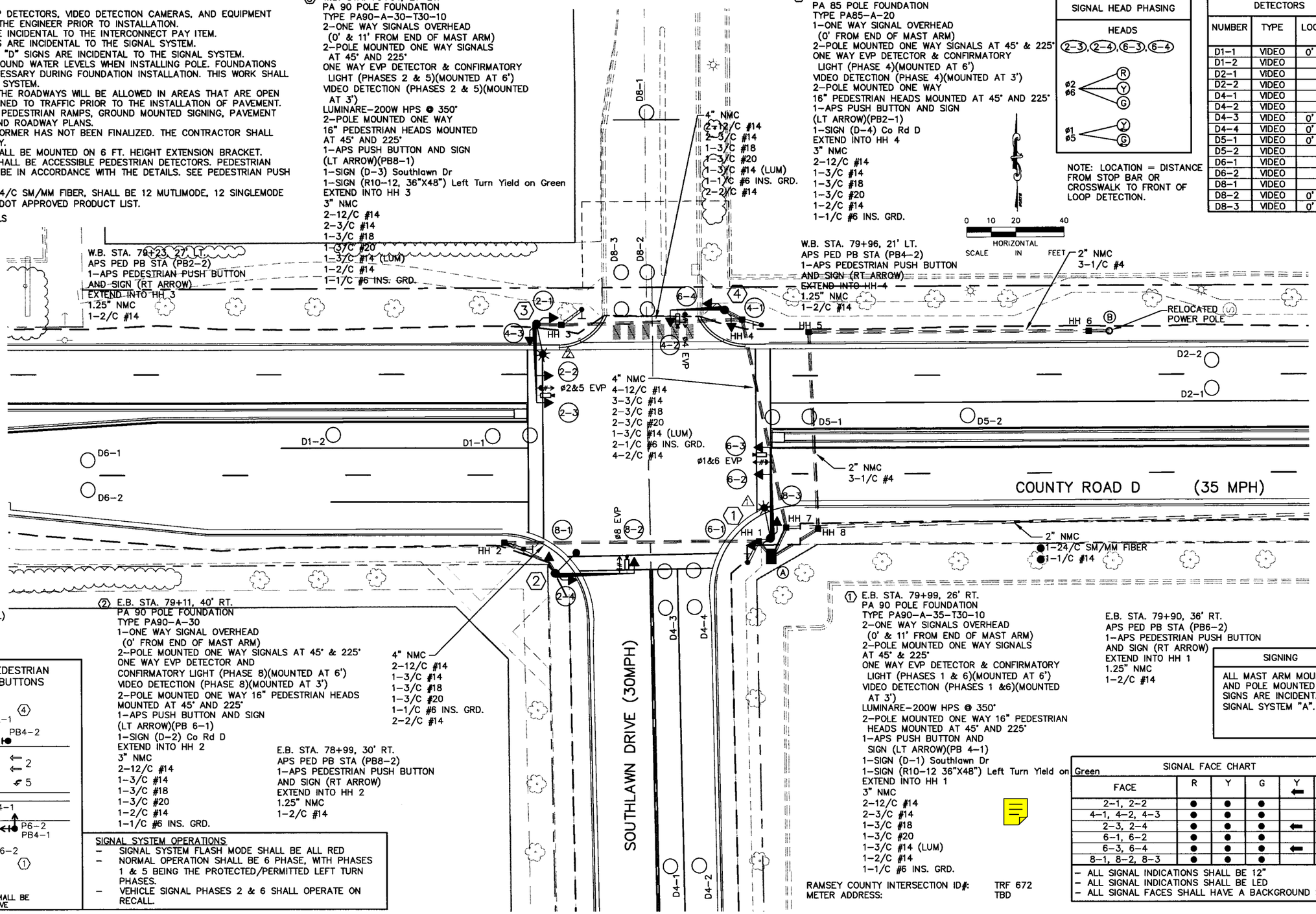
DETECTORS		
NUMBER	TYPE	LOCATION
D1-1	VIDEO	0' & 15'
D1-2	VIDEO	80'
D2-1	VIDEO	180'
D2-2	VIDEO	180'
D4-1	VIDEO	120'
D4-2	VIDEO	120'
D4-3	VIDEO	0' & 15'
D4-4	VIDEO	0' & 15'
D5-1	VIDEO	0' & 15'
D5-2	VIDEO	80'
D6-1	VIDEO	180'
D6-2	VIDEO	180'
D8-1	VIDEO	80'
D8-2	VIDEO	0' & 15'
D8-3	VIDEO	0' & 15'

SIGNING
ALL MAST ARM MOUNTED AND POLE MOUNTED SIGNS ARE INCIDENTAL TO SIGNAL SYSTEM "A".

SIGNAL FACE CHART

FACE	R	Y	G	Y ←	G ←
2-1, 2-2	●	●	●		
4-1, 4-2, 4-3	●	●	●		
2-3, 2-4	●	●	●	←	←
6-1, 6-2	●	●	●		
6-3, 6-4	●	●	●	←	←
8-1, 8-2, 8-3	●	●	●		

- ALL SIGNAL INDICATIONS SHALL BE 12"
- ALL SIGNAL INDICATIONS SHALL BE LED
- ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD



No.	Date	Revisions	App.

DRAWING NAME CRD-TSIG05.dwg	
DESIGNED BY:	BJB
DRAWN BY:	HMW
CHECKED BY:	BJB
DATE:	08/07/09
PROJECT NO.	160500029.2.101

Kimley-Horn and Associates, Inc.
2550 UNIVERSITY AVE. WEST, SUITE 345N
ST. PAUL, MINNESOTA 55114
TEL. NO. (651) 645-4197
FAX. NO. (651) 645-5116

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

BRANDON J. BOURDON
DATE: 08/07/09 MN LIC. NO. 43709

RAMSEY COUNTY

City of Maplewood, Minnesota
Department of Public Works
Engineering Division

RAMSEY COUNTY
CITY OF MAPLEWOOD
COUNTY ROAD D
IMROVEMENTS

TRAFFIC SIGNALS (SYSTEM "A")
INTERSECTION LAYOUT
COUNTY ROAD D/SOUTHLAWN DRIVE

CITY PROJECT	08-13
COUNTY PROJECT	P-3202
S.P.	62-619-30
S.P.	62-596-04

SHEET NO. 53 / 104

K:\TWC_Civil\County\RAMSEY\WHITE_BEAR\DWG\PLAN SHEETS\COUNTY_ROAD_D\CRD-TSIG05.dwg February 06, 2013 - 2:21pm

Ramsey County, MN

ECONOLITE

MOVING TRAFFIC FORWARD

Co Rd D @ Southlawn Dr - 672 - Econolite Type - ASC/3

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
Direction																
Min Green	5	15	0	7	5	15	0	7	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	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	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	11	0	20	0	20	0	23	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	3.5	0.0	2.7	2.0	3.5	0.0	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
Max1	15	60	0	15	15	60	0	15	0	0	0	0	0	0	0	0
Max2	0	0	0	35	0	0	0	35	0	0	0	0	0	0	0	0
Max3	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 Step	0.0	0.0	0.0	0.0	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	0.0	3.0	3.0	4.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	1.0	0.0	2.2	2.0	1.4	0.0	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	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0
Time B4	0	20	0	0	0	20	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
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	3.0	0.0	2.7	2.0	3.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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ECONOLITE

MOVING TRAFFIC FORWARD

Co Rd D @ Southlawn Dr - 672 - Econolite Type - ASC/3

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	Yes
Re-sync Count	3	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

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

Split Demand (MM) 3-5

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

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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Co Rd D @ Southlawn Dr - 672 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	55	Std (COS)	11	Offsets In	Seconds
Offset Value	22s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	2		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 2)	11	27	0	17	11	27	0	17	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	55s	55s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																
Special Funciton Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Seconds
Cycle	55	Std (COS)	156	Offsets In	Seconds
Offset Value	53s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	4		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 4)	11	27	0	17	11	27	0	17	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	55s	55s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																
Special Funciton Outputs																

Coordinator Pattern # 5

Split Pattern	5	TS2 (Pat-Off)	1-2	Splits In	Seconds
Cycle	60	Std (COS)	84	Offsets In	Seconds
Offset Value	54s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	5		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 5)	12	30	0	18	13	29	0	18	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	60s	60s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Special Funciton Outputs								

Coordinator Pattern # 6

Split Pattern	6	TS2 (Pat-Off)	1-3	Splits In	Seconds
Cycle	60	Std (COS)	85	Offsets In	Seconds
Offset Value	38s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	6		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 6)	12	30	0	18	13	29	0	18	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	60s	60s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																
Special Funciton Outputs																

Coordinator Pattern # 8

Split Pattern	8	TS2 (Pat-Off)	2-2	Splits In	Seconds
Cycle	80	Std (COS)	158	Offsets In	Seconds
Offset Value	7s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	8		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 8)	12	40	0	28	17	35	0	28	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	80s	80s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																
Special Funciton Outputs																

Coordinator Pattern # 9

Split Pattern	9	TS2 (Pat-Off)	2-3	Splits In	Seconds
Cycle	70	Std (COS)	155	Offsets In	Seconds
Offset Value	66s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	9		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 9)	15	30	0	25	15	30	0	25	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	70s	70s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																
Special Funciton Outputs																

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MOVING TRAFFIC FORWARD

Co Rd D @ Southlawn Dr - 672 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	11	27	0	17	11	27	0	17	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Ring	1	2	3	4
Split Sum	55s	55s	0s	0s

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	11	27	0	17	11	27	0	17	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Ring	1	2	3	4
Split Sum	55s	55s	0s	0s

Split Pattern # 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	12	30	0	18	13	29	0	18	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Ring	1	2	3	4
Split Sum	60s	60s	0s	0s

Split Pattern # 6

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

Split (seconds)	12	30	0	18	13	29	0	18	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Ring	1	2	3	4
Split Sum	60s	60s	0s	0s

Split Pattern # 8

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	12	40	0	28	17	35	0	28	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Ring	1	2	3	4
Split Sum	80s	80s	0s	0s

Split Pattern # 9

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	15	30	0	25	15	30	0	25	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase																

Ring	1	2	3	4
Split Sum	70s	70s	0s	0s

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ECONOLITE

MOVING TRAFFIC FORWARD

Co Rd D @ Southlawn Dr - 672 - Econolite Type - ASC/3

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2

Pattern	2	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4

Pattern	4	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 5

Pattern	5	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 6

Pattern	6	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 7

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 8

Pattern	8	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 9

Pattern	9	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 99

Pattern	Flash	Override Sys	No
Timing Plan	0	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	Yes	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 100

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	1
Veh Detector Plan	1	Det Log	15
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall		X				X										
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Ramsey County, MN

ECONOLITE

MOVING TRAFFIC FORWARD

Co Rd D @ Southlawn Dr - 672 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	100	00:00
2	6	10:30
3	6	15:00
4	100	17:30

Day Plan #2

Event	Action Plan	Start Time
1	100	00:00
2	4	11:00
3	100	15:45

Day Plan #3

Event	Action Plan	Start Time
1	100	00:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22

	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 5

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X											

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X										
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 6

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X											

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X					

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
		X									
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 7

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
					X							

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X					

Day (DOM)	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		
			X	X	X	X	X	X	X		

Schedule Number - 8

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
							X					

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
						X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
			X								
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 9

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
							X					

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
				X							
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 10

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
							X					

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X					

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
					X						
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 11

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
									X			

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X					

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X				
	12	13	14	15	16	17	18	19	20	21	22
	23	24	25	26	27	28	29	30	31		

Schedule Number - 12

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
											X	

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
					X		

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	12	13	14	15	16	17	18	19	20	21	22
											X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X					

Schedule Number - 13

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
											X	

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
						X	

Day (DOM)	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		
	X	X	X	X	X	X	X				

Schedule Number - 14

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
												X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
						X	

Day (DOM)	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		
		X									

Schedule Number - 15

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
												X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	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		
			X								

Schedule Number - 16

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
												X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X					

Day (DOM)	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		
				X							

Schedule Number - 17

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
												X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
						X	

Day (DOM)	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		
									X		

Table of Contents

Enclave - Maplewood

Vistro File: N:\...\220916_R0037066.00_Enclave - Maplewood.vistro
Scenario 3 AM Existing

Report File: N:\...\AM Existing.pdf
9/24/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	County Road D and Southlawn Drive	Signalized	HCM 7th Edition	NB Left	0.212	6.4	A
2	Beam Avenue and Southlawn Drive	Signalized	HCM 7th Edition	SB Left	0.132	7.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: County Road D and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.212

Intersection Setup

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	50.00	150.00	100.00	125.00	325.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D		
Base Volume Input [veh/h]	5	0	21	1	0	2	3	216	11	53	190	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	21	1	0	2	3	216	11	53	190	1
Peak Hour Factor	0.6250	1.0000	0.5830	0.2500	1.0000	0.5000	0.7500	0.9000	0.6880	0.7790	0.8800	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	9	1	0	1	1	60	4	17	54	1
Total Analysis Volume [veh/h]	8	0	36	4	0	4	4	240	16	68	216	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	4	0	0	8	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	5	15	0	5	15	0
Maximum Green [s]	0	15	0	0	15	0	15	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.2	0.0	3.0	4.0	0.0	3.0	4.0	0.0
All red [s]	0.0	2.2	0.0	0.0	2.0	0.0	2.0	1.4	0.0	2.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.7	0.0	0.0	2.0	0.0	2.0	3.5	0.0	2.0	3.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	20	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.2	0.0	0.0	3.2	0.0	3.0	3.4	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	34	34	34	34	34	34	34	34	34	34
L, Total Lost Time per Cycle [s]	5.20	5.20	5.20	5.20	5.40	5.40	5.40	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	3.20	3.20	3.20	0.00	3.40	3.40	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	2	2	2	21	14	14	22	16	16
g / C, Green / Cycle	0.07	0.07	0.07	0.07	0.62	0.40	0.40	0.63	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.01	0.02	0.12	0.00	0.00	0.07	0.01	0.04	0.06	0.06
s, saturation flow rate [veh/h]	1412	1589	32	1589	1254	3560	1589	1781	1870	1858
c, Capacity [veh/h]	216	114	212	114	1061	1433	640	1374	896	891
d1, Uniform Delay [s]	17.11	15.13	17.15	14.82	2.50	6.57	6.19	2.45	4.94	4.95
k, delay calibration	0.09	0.09	0.04	0.04	0.04	0.13	0.13	0.13	0.13	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	1.33	0.01	0.05	0.00	0.07	0.02	0.02	0.07	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.32	0.02	0.04	0.00	0.17	0.03	0.05	0.12	0.12
d, Delay for Lane Group [s/veh]	17.17	16.46	17.16	14.87	2.50	6.64	6.21	2.47	5.02	5.02
Lane Group LOS	B	B	B	B	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.06	0.26	0.03	0.03	0.00	0.37	0.05	0.05	0.26	0.26
50th-Percentile Queue Length [ft/ln]	1.41	6.53	0.68	0.63	0.08	9.32	1.21	1.27	6.51	6.50
95th-Percentile Queue Length [veh/ln]	0.10	0.47	0.05	0.05	0.01	0.67	0.09	0.09	0.47	0.47
95th-Percentile Queue Length [ft/ln]	2.54	11.75	1.23	1.14	0.14	16.78	2.18	2.29	11.72	11.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.17	16.46	16.46	17.16	17.16	14.87	2.50	6.64	6.21	2.47	5.02	5.02
Movement LOS	B	B	B	B	B	B	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	16.59			16.02			6.55			4.42		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	6.39											
Intersection LOS	A											
Intersection V/C	0.212											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	877	877	3508	3508
d_b, Bicycle Delay [s]	5.39	5.39	9.73	9.73
l_b,int, Bicycle LOS Score for Intersection	1.632	1.573	1.774	1.797
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Beam Avenue and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.132

Intersection Setup

Name	Southlawn Drive			Southlawn Drive			Beam Avenue				Beam Avenue			
Approach	Northbound			Southbound			Eastbound				Westbound			
Lane Configuration														
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	1	0	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	225.00	100.00	275.00	325.0	100.0	100.0	225.0	325.0	100.0	100.0	125.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00				30.00			
Grade [%]	0.00			0.00			0.00				0.00			
Curb Present	No			No			No				No			
Crosswalk	No			No			No				No			

Volumes

Name	Southlawn Drive			Southlawn Drive			Beam Avenue				Beam Avenue			
Base Volume Input [veh/h]	18	4	18	24	14	17	4	53	247	20	7	15	213	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00													
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	4	18	24	14	17	4	53	247	20	7	15	213	36
Peak Hour Factor	0.6430	0.2500	0.9000	0.7500	0.5830	0.7080	0.500	0.697	0.813	0.625	0.583	0.536	0.750	0.692
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	7	4	5	8	6	6	2	19	76	8	3	7	71	13
Total Analysis Volume [veh/h]	28	16	20	32	24	24	8	76	304	32	12	28	284	52
Presence of On-Street Parking	No		No	No		No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0				0			
v_di, Inbound Pedestrian Volume crossing m	0			0			0				0			
v_co, Outbound Pedestrian Volume crossing	0			0			0				0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0				0			
Bicycle Volume [bicycles/h]	0			0			0				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permi	ProtP	Permi	Permi
Signal Group	0	8	0	0	4	0	0	5	2	0	0	1	6	0
Auxiliary Signal Groups														
Lead / Lag	-	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	5	10	0	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	5	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	10	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No			No	No			No	No	
Maximum Recall		No			No			No	No			No	No	
Pedestrian Recall		No			No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	29	29	29	29	29	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	5	5	5	16	10	10	16	9	9
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.55	0.36	0.36	0.55	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.02	0.01	0.02	0.07	0.09	0.02	0.03	0.08	0.03
s, saturation flow rate [veh/h]	1357	1703	1372	1870	1589	1254	3560	1589	1203	3560	1589
c, Capacity [veh/h]	383	289	374	317	269	1008	1296	579	980	1161	518
d1, Uniform Delay [s]	11.97	10.16	12.20	10.07	10.09	3.07	6.37	5.95	2.99	7.11	6.77
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.19	0.10	0.10	0.14	0.04	0.09	0.04	0.02	0.11	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.12	0.09	0.08	0.09	0.08	0.23	0.06	0.04	0.24	0.10
d, Delay for Lane Group [s/veh]	12.05	10.35	12.29	10.17	10.24	3.11	6.46	5.99	3.01	7.22	6.85
Lane Group LOS	B	B	B	B	B	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.13	0.15	0.15	0.10	0.10	0.07	0.38	0.08	0.03	0.40	0.15
50th-Percentile Queue Length [ft/ln]	3.30	3.83	3.83	2.50	2.54	1.73	9.45	1.93	0.80	9.99	3.63
95th-Percentile Queue Length [veh/ln]	0.24	0.28	0.28	0.18	0.18	0.12	0.68	0.14	0.06	0.72	0.26
95th-Percentile Queue Length [ft/ln]	5.93	6.89	6.90	4.49	4.58	3.11	17.01	3.48	1.45	17.99	6.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.05	10.35	10.35	12.29	10.17	10.24	3.11	3.11	6.46	5.99	3.01	3.01	7.22	6.85
Movement LOS	B	B	B	B	B	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	11.09			11.04			5.76				6.72			
Approach LOS	B			B			A				A			
d_I, Intersection Delay [s/veh]	6.96													
Intersection LOS	A													
Intersection V/C	0.132													

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2093	2093	2093	2093
d_b, Bicycle Delay [s]	0.03	0.03	0.03	0.03
l_b,int, Bicycle LOS Score for Intersection	1.665	1.692	1.843	1.847
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Enclave - Maplewood

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Scenario 3 AM Existing

Report File: N:\...\AM Existing.pdf

9/24/2022

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	County Road D and Southlawn Drive	Final Base	5	0	21	1	0	2	3	216	11	53	190	1	503
		Growth 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	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**5**	**0**	**21**	**1**	**0**	**2**	**3**	**216**	**11**	**53**	**190**	**1**	**503**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound				Westbound			
			Left	Thru	Right	Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right
2	Beam Avenue and Southlawn Drive	Final Base	18	4	18	24	14	17	4	53	247	20	7	15	213	36
		Growth 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	1.00	1.00
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**4**	**18**	**24**	**14**	**17**	**4**	**53**	**247**	**20**	**7**	**15**	**213**	**36**

Total Volume
690
-
0
0
0
690

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Enclave - Maplewood

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Scenario 4 PM Existing

Report File: N:\...\PM Existing.pdf
9/24/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	County Road D and Southlawn Drive	Signalized	HCM 7th Edition	NB Left	0.232	11.3	B
2	Beam Avenue and Southlawn Drive	Signalized	HCM 7th Edition	SB Left	0.272	9.6	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: County Road D and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	11.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.232

Intersection Setup

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0	0
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	50.00	150.00	100.00	125.00	325.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00			
Grade [%]	0.00			0.00			0.00			0.00			
Curb Present	No			No			No			No			
Crosswalk	No			No			No			No			

Volumes

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D			
Base Volume Input [veh/h]	23	6	89	29	7	28	36	430	35	1	53	244	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	6	89	29	7	28	36	430	35	1	53	244	28
Peak Hour Factor	0.5750	0.5000	0.8560	0.9060	0.4380	0.8750	0.8180	0.8810	0.6730	0.250	0.722	0.924	0.778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	10	3	26	8	4	8	11	122	13	1	18	66	9
Total Analysis Volume [veh/h]	40	12	104	32	16	32	44	488	52	4	73	264	36
Presence of On-Street Parking	No		No	No		No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0			
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0			
v_co, Outbound Pedestrian Volume crossing	0			0			0			0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0			
Bicycle Volume [bicycles/h]	0			0			0			0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi
Signal Group	0	4	0	0	8	0	1	6	0	0	5	2	0
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	5	15	0	0	5	15	0
Maximum Green [s]	0	15	0	0	15	0	15	60	0	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.2	0.0	3.0	4.0	0.0	0.0	3.0	4.0	0.0
All red [s]	0.0	2.2	0.0	0.0	2.0	0.0	2.0	1.4	0.0	0.0	2.0	1.0	0.0
Split [s]	0	18	0	0	18	0	12	29	0	0	13	30	0
Vehicle Extension [s]	0.0	2.7	0.0	0.0	2.0	0.0	2.0	3.5	0.0	0.0	2.0	3.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	20	0	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.2	0.0	0.0	3.2	0.0	3.0	3.4	0.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No			No	No	
Maximum Recall		No			No		No	No			No	No	
Pedestrian Recall		No			No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	5.20	5.20	5.20	5.20	5.40	5.40	5.40	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	3.20	3.20	3.20	0.00	3.40	3.40	0.00	3.00	3.00
g_i, Effective Green Time [s]	12	12	12	12	37	29	29	38	30	30
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.62	0.48	0.48	0.63	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.06	0.02	0.04	0.14	0.03	0.04	0.08	0.08
s, saturation flow rate [veh/h]	1357	1615	851	1589	1184	3560	1589	1781	1870	1793
c, Capacity [veh/h]	181	322	270	317	877	1710	763	1123	942	903
d1, Uniform Delay [s]	28.18	20.71	20.86	19.62	4.40	9.39	8.38	4.28	8.04	8.05
k, delay calibration	0.09	0.09	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	0.58	0.12	0.05	0.01	0.42	0.17	0.12	0.37	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.36	0.18	0.10	0.05	0.29	0.07	0.07	0.16	0.16
d, Delay for Lane Group [s/veh]	28.70	21.29	20.98	19.67	4.41	9.81	8.55	4.40	8.41	8.44
Lane Group LOS	C	C	C	B	A	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.56	1.36	0.52	0.35	0.16	1.74	0.35	0.30	0.99	0.97
50th-Percentile Queue Length [ft/ln]	14.07	33.94	13.09	8.64	3.88	43.41	8.69	7.53	24.71	24.20
95th-Percentile Queue Length [veh/ln]	1.01	2.44	0.94	0.62	0.28	3.13	0.63	0.54	1.78	1.74
95th-Percentile Queue Length [ft/ln]	25.32	61.10	23.55	15.56	6.99	78.13	15.65	13.55	44.48	43.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.70	21.29	21.29	20.98	20.98	19.67	4.41	9.81	8.55	4.40	4.40	8.42	8.44
Movement LOS	C	C	C	C	C	B	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	23.19			20.45			9.29			7.60			
Approach LOS	C			C			A			A			
d_I, Intersection Delay [s/veh]	11.32												
Intersection LOS	B												
Intersection V/C	0.232												

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	427	427	787	833
d_b, Bicycle Delay [s]	18.57	18.57	11.04	10.21
l_b,int, Bicycle LOS Score for Intersection	1.817	1.692	2.041	1.867
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Beam Avenue and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.272

Intersection Setup

Name	Southlawn Drive			Southlawn Drive				Beam Avenue				Beam Avenue			
Approach	Northbound			Southbound				Eastbound				Westbound			
Lane Configuration															
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	1	0	0	1	1	0	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	225.0	100.0	100.0	275.0	325.0	100.0	100.0	225.0	325.0	100.0	100.0	125.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00				30.00			
Grade [%]	0.00			0.00				0.00				0.00			
Curb Present	No			No				No				No			
Crosswalk	No			No				No				No			

Volumes

Name	Southlawn Drive			Southlawn Drive				Beam Avenue				Beam Avenue			
Base Volume Input [veh/h]	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00														
Growth Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
Peak Hour Factor	0.7920	0.4170	0.8750	0.250	0.884	0.607	0.692	0.750	0.859	0.934	0.712	0.750	0.750	0.879	0.679
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	12	6	10	1	28	7	39	2	46	137	13	1	12	91	28
Total Analysis Volume [veh/h]	48	24	40	4	112	28	156	8	184	548	52	4	48	364	112
Presence of On-Street Parking	No		No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0				0			
v_di, Inbound Pedestrian Volume crossing m	0			0				0				0			
v_co, Outbound Pedestrian Volume crossing	0			0				0				0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0				0			
Bicycle Volume [bicycles/h]	0			0				0				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi	Permi	ProtP	Permi	Permi	Permi	ProtP	Permi	Permi
Signal Group	0	8	0	0	0	4	0	0	5	2	0	0	1	6	0
Auxiliary Signal Groups															
Lead / Lag	-	-	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	0	10	0	0	5	10	0	0	5	10	0
Maximum Green [s]	0	30	0	0	0	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No				No			No	No			No	No	
Maximum Recall		No				No			No	No			No	No	
Pedestrian Recall		No				No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	36	36	36	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	10	10	18	12	12	18	10	10
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.51	0.34	0.34	0.51	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.09	0.01	0.10	0.16	0.15	0.03	0.05	0.10	0.07
s, saturation flow rate [veh/h]	1200	1684	1338	1870	1589	1218	3560	1589	1036	3560	1589
c, Capacity [veh/h]	448	449	452	499	424	848	1209	540	730	988	441
d1, Uniform Delay [s]	11.79	10.04	12.97	9.80	10.71	4.97	9.26	8.10	4.71	10.44	10.09
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	0.14	0.30	0.05	0.53	0.13	0.27	0.08	0.04	0.23	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.14	0.26	0.06	0.37	0.23	0.45	0.10	0.07	0.37	0.25
d, Delay for Lane Group [s/veh]	11.90	10.18	13.27	9.85	11.24	5.10	9.52	8.17	4.75	10.67	10.39
Lane Group LOS	B	B	B	A	B	A	A	A	A	B	B
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.26	0.31	0.70	0.13	0.83	0.46	1.24	0.21	0.11	0.90	0.55
50th-Percentile Queue Length [ft/ln]	6.60	7.78	17.44	3.29	20.64	11.49	30.89	5.23	2.87	22.58	13.87
95th-Percentile Queue Length [veh/ln]	0.47	0.56	1.26	0.24	1.49	0.83	2.22	0.38	0.21	1.63	1.00
95th-Percentile Queue Length [ft/ln]	11.87	14.01	31.38	5.93	37.15	20.69	55.61	9.42	5.17	40.64	24.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.90	10.18	10.18	13.27	13.27	9.85	11.24	5.10	5.10	9.52	8.17	4.75	4.75	10.67	10.39
Movement LOS	B	B	B	B	B	A	B	A	A	A	A	A	A	B	B
d_A, Approach Delay [s/veh]	10.92			11.89				8.36				10.03			
Approach LOS	B			B				A				B			
d_I, Intersection Delay [s/veh]	9.65														
Intersection LOS	A														
Intersection V/C	0.272														

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1676	1676	1676	1676
d_b, Bicycle Delay [s]	0.47	0.47	0.47	0.47
l_b,int, Bicycle LOS Score for Intersection	1.744	1.870	2.061	1.956
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Enclave - Maplewood

Vistro File: N:\...\220916_R0037066.00_Enclave - Maplewood.vistro

Scenario 4 PM Existing

Report File: N:\...\PM Existing.pdf

9/24/2022

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound				Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-T	Left	Thru	Right	
1	County Road D and Southlawn Drive	Final Base	23	6	89	29	7	28	36	430	35	1	53	244	28	1009
		Growth 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	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**6**	**89**	**29**	**7**	**28**	**36**	**430**	**35**	**1**	**53**	**244**	**28**	**1009**

ID	Intersection Name	Volume Type	Northbound			Southbound				Eastbound				Westbound			
			Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right
2	Beam Avenue and Southlawn Drive	Final Base	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
		Growth 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	1.00	1.00	1.00
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**38**	**10**	**35**	**1**	**99**	**17**	**108**	**6**	**158**	**512**	**37**	**3**	**36**	**320**	**76**

Total Volume
1456
-
0
0
0
1456

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Enclave - Maplewood

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Scenario 9 AM 2024 Background

Report File: N:\...\AM Future Background.pdf
9/24/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	County Road D and Southlawn Drive	Signalized	HCM 7th Edition	NB Left	0.213	6.4	A
2	Beam Avenue and Southlawn Drive	Signalized	HCM 7th Edition	SB Left	0.133	7.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: County Road D and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.213

Intersection Setup

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	50.00	150.00	100.00	125.00	325.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D		
Base Volume Input [veh/h]	5	0	21	1	0	2	3	216	11	53	190	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	0	21	1	0	2	3	218	11	54	192	1
Peak Hour Factor	0.6250	1.0000	0.5830	0.2500	1.0000	0.5000	0.7500	0.9000	0.6880	0.7790	0.8800	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	9	1	0	1	1	61	4	17	55	1
Total Analysis Volume [veh/h]	8	0	36	4	0	4	4	242	16	69	218	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	4	0	0	8	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	5	15	0	5	15	0
Maximum Green [s]	0	15	0	0	15	0	15	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.2	0.0	3.0	4.0	0.0	3.0	4.0	0.0
All red [s]	0.0	2.2	0.0	0.0	2.0	0.0	2.0	1.4	0.0	2.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.7	0.0	0.0	2.0	0.0	2.0	3.5	0.0	2.0	3.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	20	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.2	0.0	0.0	3.2	0.0	3.0	3.4	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	34	34	34	34	34	34	34	34	34	34
L, Total Lost Time per Cycle [s]	5.20	5.20	5.20	5.20	5.40	5.40	5.40	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	3.20	3.20	3.20	0.00	3.40	3.40	0.00	3.00	3.00
g_i, Effective Green Time [s]	2	2	2	2	21	14	14	22	16	16
g / C, Green / Cycle	0.07	0.07	0.07	0.07	0.62	0.40	0.40	0.63	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.01	0.02	0.12	0.00	0.00	0.07	0.01	0.04	0.06	0.06
s, saturation flow rate [veh/h]	1412	1589	32	1589	1252	3560	1589	1781	1870	1858
c, Capacity [veh/h]	216	114	212	114	1060	1433	640	1374	898	892
d1, Uniform Delay [s]	17.14	15.16	17.18	14.85	2.50	6.58	6.20	2.45	4.94	4.94
k, delay calibration	0.09	0.09	0.04	0.04	0.04	0.13	0.13	0.13	0.13	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.06	1.33	0.01	0.05	0.00	0.07	0.02	0.02	0.07	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.32	0.02	0.04	0.00	0.17	0.03	0.05	0.12	0.12
d, Delay for Lane Group [s/veh]	17.20	16.49	17.19	14.90	2.50	6.65	6.22	2.47	5.01	5.02
Lane Group LOS	B	B	B	B	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.06	0.26	0.03	0.03	0.00	0.38	0.05	0.05	0.26	0.26
50th-Percentile Queue Length [ft/ln]	1.42	6.54	0.68	0.63	0.08	9.43	1.22	1.30	6.58	6.56
95th-Percentile Queue Length [veh/ln]	0.10	0.47	0.05	0.05	0.01	0.68	0.09	0.09	0.47	0.47
95th-Percentile Queue Length [ft/ln]	2.55	11.78	1.23	1.14	0.14	16.98	2.19	2.33	11.84	11.81

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.20	16.49	16.49	17.19	17.19	14.90	2.50	6.65	6.22	2.47	5.02	5.02
Movement LOS	B	B	B	B	B	B	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	16.62			16.04			6.56			4.41		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	6.38											
Intersection LOS	A											
Intersection V/C	0.213											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	875	875	3502	3502
d_b, Bicycle Delay [s]	5.42	5.42	9.66	9.66
l_b,int, Bicycle LOS Score for Intersection	1.632	1.573	1.776	1.800
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Beam Avenue and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	7.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Southlawn Drive			Southlawn Drive			Beam Avenue				Beam Avenue			
Approach	Northbound			Southbound			Eastbound				Westbound			
Lane Configuration														
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	1	0	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	225.00	100.00	275.00	325.0	100.0	100.0	225.0	325.0	100.0	100.0	125.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00				30.00			
Grade [%]	0.00			0.00			0.00				0.00			
Curb Present	No			No			No				No			
Crosswalk	No			No			No				No			

Volumes

Name	Southlawn Drive			Southlawn Drive			Beam Avenue				Beam Avenue			
Base Volume Input [veh/h]	18	4	18	24	14	17	4	53	247	20	7	15	213	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00													
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	4	18	24	14	17	4	54	249	20	7	15	215	36
Peak Hour Factor	0.6430	0.2500	0.9000	0.7500	0.5830	0.7080	0.500	0.697	0.813	0.625	0.583	0.536	0.750	0.692
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	7	4	5	8	6	6	2	19	77	8	3	7	72	13
Total Analysis Volume [veh/h]	28	16	20	32	24	24	8	77	306	32	12	28	287	52
Presence of On-Street Parking	No		No	No		No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0				0			
v_di, Inbound Pedestrian Volume crossing m	0			0			0				0			
v_co, Outbound Pedestrian Volume crossing	0			0			0				0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0				0			
Bicycle Volume [bicycles/h]	0			0			0				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permi	ProtP	Permi	Permi
Signal Group	0	8	0	0	4	0	0	5	2	0	0	1	6	0
Auxiliary Signal Groups														
Lead / Lag	-	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	5	10	0	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	5	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	10	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No			No	No			No	No	
Maximum Recall		No			No			No	No			No	No	
Pedestrian Recall		No			No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	29	29	29	29	29	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	5	5	5	16	10	10	16	9	9
g / C, Green / Cycle	0.17	0.17	0.17	0.17	0.17	0.55	0.37	0.37	0.55	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.02	0.01	0.02	0.07	0.09	0.02	0.03	0.08	0.03
s, saturation flow rate [veh/h]	1357	1703	1372	1870	1589	1252	3560	1589	1201	3560	1589
c, Capacity [veh/h]	383	288	374	317	269	1007	1299	580	978	1161	518
d1, Uniform Delay [s]	11.99	10.18	12.22	10.09	10.11	3.07	6.37	5.94	2.99	7.13	6.78
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.19	0.10	0.10	0.14	0.04	0.09	0.04	0.02	0.11	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.12	0.09	0.08	0.09	0.08	0.24	0.06	0.04	0.25	0.10
d, Delay for Lane Group [s/veh]	12.07	10.37	12.31	10.19	10.25	3.11	6.46	5.98	3.01	7.24	6.86
Lane Group LOS	B	B	B	B	B	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.13	0.15	0.15	0.10	0.10	0.07	0.38	0.08	0.03	0.41	0.15
50th-Percentile Queue Length [ft/ln]	3.30	3.84	3.84	2.50	2.55	1.75	9.53	1.94	0.81	10.14	3.64
95th-Percentile Queue Length [veh/ln]	0.24	0.28	0.28	0.18	0.18	0.13	0.69	0.14	0.06	0.73	0.26
95th-Percentile Queue Length [ft/ln]	5.95	6.91	6.92	4.51	4.59	3.16	17.15	3.48	1.45	18.25	6.55

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.07	10.37	10.37	12.31	10.19	10.25	3.11	3.11	6.46	5.98	3.01	3.01	7.24	6.86
Movement LOS	B	B	B	B	B	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	11.11			11.06			5.75				6.74			
Approach LOS	B			B			A				A			
d_I, Intersection Delay [s/veh]	6.96													
Intersection LOS	A													
Intersection V/C	0.133													

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2090	2090	2090	2090
d_b, Bicycle Delay [s]	0.03	0.03	0.03	0.03
l_b,int, Bicycle LOS Score for Intersection	1.665	1.692	1.845	1.849
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Enclave - Maplewood

Vistro File: N:\...\220916_R0037066.00_Enclave - Maplewood.vistro

Scenario 9 AM 2024 Background

Report File: N:\...\AM Future Background.pdf

9/24/2022

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	County Road D and Southlawn Drive	Final Base	5	0	21	1	0	2	3	216	11	53	190	1	503
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**5**	**0**	**21**	**1**	**0**	**2**	**3**	**218**	**11**	**54**	**192**	**1**	**508**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound				Westbound			
			Left	Thru	Right	Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right
2	Beam Avenue and Southlawn Drive	Final Base	18	4	18	24	14	17	4	53	247	20	7	15	213	36
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**4**	**18**	**24**	**14**	**17**	**4**	**54**	**249**	**20**	**7**	**15**	**215**	**36**

Total Volume
690
-
0
0
0
695

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Encalve - Maplewood

Vistro File: N:\...\220916_R0037066.00_Enclave - Maplewood.vistro

Scenario 10 PM 2024 Background

Report File: N:\...\PM Future Background.pdf

9/24/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	County Road D and Southlawn Drive	Signalized	HCM 7th Edition	NB Left	0.235	11.3	B
2	Beam Avenue and Southlawn Drive	Signalized	HCM 7th Edition	SB Left	0.275	9.7	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: County Road D and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	11.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.235

Intersection Setup

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0	0
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	50.00	150.00	100.00	125.00	325.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00			
Grade [%]	0.00			0.00			0.00			0.00			
Curb Present	No			No			No			No			
Crosswalk	No			No			No			No			

Volumes

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D			
Base Volume Input [veh/h]	23	6	89	29	7	28	36	430	35	1	53	244	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.010	1.010	1.010	1.010
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	6	90	29	7	28	36	434	35	1	54	246	28
Peak Hour Factor	0.5750	0.5000	0.8560	0.9060	0.4380	0.8750	0.8180	0.8810	0.6730	0.250	0.722	0.924	0.778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	10	3	26	8	4	8	11	123	13	1	19	67	9
Total Analysis Volume [veh/h]	40	12	105	32	16	32	44	493	52	4	75	266	36
Presence of On-Street Parking	No		No	No		No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0			
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0			
v_co, Outbound Pedestrian Volume crossing	0			0			0			0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0			
Bicycle Volume [bicycles/h]	0			0			0			0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi
Signal Group	0	4	0	0	8	0	1	6	0	0	5	2	0
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	5	15	0	0	5	15	0
Maximum Green [s]	0	15	0	0	15	0	15	60	0	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.2	0.0	3.0	4.0	0.0	0.0	3.0	4.0	0.0
All red [s]	0.0	2.2	0.0	0.0	2.0	0.0	2.0	1.4	0.0	0.0	2.0	1.0	0.0
Split [s]	0	18	0	0	18	0	12	29	0	0	13	30	0
Vehicle Extension [s]	0.0	2.7	0.0	0.0	2.0	0.0	2.0	3.5	0.0	0.0	2.0	3.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	20	0	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.2	0.0	0.0	3.2	0.0	3.0	3.4	0.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No			No	No	
Maximum Recall		No			No		No	No			No	No	
Pedestrian Recall		No			No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	5.20	5.20	5.20	5.20	5.40	5.40	5.40	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	3.20	3.20	3.20	0.00	3.40	3.40	0.00	3.00	3.00
g_i, Effective Green Time [s]	12	12	12	12	37	29	29	38	30	30
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.62	0.48	0.48	0.63	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.03	0.07	0.06	0.02	0.04	0.14	0.03	0.04	0.08	0.08
s, saturation flow rate [veh/h]	1357	1614	850	1589	1183	3560	1589	1781	1870	1794
c, Capacity [veh/h]	182	324	270	319	875	1704	761	1121	940	902
d1, Uniform Delay [s]	28.16	20.68	20.82	19.57	4.42	9.47	8.43	4.31	8.07	8.09
k, delay calibration	0.09	0.09	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	0.58	0.12	0.05	0.01	0.43	0.17	0.12	0.37	0.39
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.22	0.36	0.18	0.10	0.05	0.29	0.07	0.07	0.16	0.17
d, Delay for Lane Group [s/veh]	28.67	21.26	20.93	19.62	4.43	9.90	8.61	4.43	8.45	8.48
Lane Group LOS	C	C	C	B	A	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.56	1.37	0.52	0.35	0.16	1.77	0.35	0.31	1.00	0.98
50th-Percentile Queue Length [ft/ln]	14.06	34.21	13.07	8.63	3.90	44.13	8.73	7.76	24.96	24.44
95th-Percentile Queue Length [veh/ln]	1.01	2.46	0.94	0.62	0.28	3.18	0.63	0.56	1.80	1.76
95th-Percentile Queue Length [ft/ln]	25.31	61.58	23.52	15.54	7.02	79.44	15.72	13.97	44.92	44.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.67	21.26	21.26	20.93	20.93	19.62	4.43	9.90	8.61	4.43	4.43	8.46	8.48
Movement LOS	C	C	C	C	C	B	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	23.15			20.41			9.38			7.63			
Approach LOS	C			C			A			A			
d_I, Intersection Delay [s/veh]	11.35												
Intersection LOS	B												
Intersection V/C	0.235												

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	427	427	787	833
d_b, Bicycle Delay [s]	18.57	18.57	11.04	10.21
l_b,int, Bicycle LOS Score for Intersection	1.819	1.692	2.046	1.871
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Beam Avenue and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.275

Intersection Setup

Name	Southlawn Drive			Southlawn Drive				Beam Avenue				Beam Avenue			
Approach	Northbound			Southbound				Eastbound				Westbound			
Lane Configuration															
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	1	0	0	1	1	0	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	225.0	100.0	100.0	275.0	325.0	100.0	100.0	225.0	325.0	100.0	100.0	125.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00				30.00			
Grade [%]	0.00			0.00				0.00				0.00			
Curb Present	No			No				No				No			
Crosswalk	No			No				No				No			

Volumes

Name	Southlawn Drive			Southlawn Drive				Beam Avenue				Beam Avenue			
Base Volume Input [veh/h]	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00														
Growth Factor	1.0100	1.0100	1.0100	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	10	35	1	100	17	109	6	160	517	37	3	36	323	77
Peak Hour Factor	0.7920	0.4170	0.8750	0.250	0.884	0.607	0.692	0.750	0.859	0.934	0.712	0.750	0.750	0.879	0.679
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	12	6	10	1	28	7	39	2	47	138	13	1	12	92	28
Total Analysis Volume [veh/h]	48	24	40	4	113	28	158	8	186	554	52	4	48	367	113
Presence of On-Street Parking	No		No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0				0			
v_di, Inbound Pedestrian Volume crossing m	0			0				0				0			
v_co, Outbound Pedestrian Volume crossing	0			0				0				0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0				0			
Bicycle Volume [bicycles/h]	0			0				0				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi	Permi	ProtP	Permi	Permi	Permi	ProtP	Permi	Permi
Signal Group	0	8	0	0	0	4	0	0	5	2	0	0	1	6	0
Auxiliary Signal Groups															
Lead / Lag	-	-	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	0	10	0	0	5	10	0	0	5	10	0
Maximum Green [s]	0	30	0	0	0	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No				No			No	No			No	No	
Maximum Recall		No				No			No	No			No	No	
Pedestrian Recall		No				No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	36	36	36	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	10	10	18	12	12	18	10	10
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.51	0.34	0.34	0.51	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.09	0.01	0.10	0.16	0.16	0.03	0.05	0.10	0.07
s, saturation flow rate [veh/h]	1197	1684	1338	1870	1589	1216	3560	1589	1032	3560	1589
c, Capacity [veh/h]	447	450	452	499	424	846	1210	540	727	988	441
d1, Uniform Delay [s]	11.80	10.04	12.99	9.81	10.73	4.98	9.28	8.10	4.72	10.47	10.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.10	0.14	0.30	0.05	0.54	0.14	0.27	0.08	0.04	0.23	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.14	0.26	0.06	0.37	0.23	0.46	0.10	0.07	0.37	0.26
d, Delay for Lane Group [s/veh]	11.91	10.19	13.29	9.85	11.27	5.12	9.55	8.18	4.76	10.70	10.41
Lane Group LOS	B	B	B	A	B	A	A	A	A	B	B
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.26	0.31	0.70	0.13	0.84	0.47	1.25	0.21	0.12	0.91	0.56
50th-Percentile Queue Length [ft/ln]	6.60	7.79	17.62	3.30	20.96	11.65	31.34	5.24	2.88	22.83	14.03
95th-Percentile Queue Length [veh/ln]	0.48	0.56	1.27	0.24	1.51	0.84	2.26	0.38	0.21	1.64	1.01
95th-Percentile Queue Length [ft/ln]	11.89	14.02	31.72	5.94	37.74	20.98	56.41	9.43	5.18	41.10	25.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.91	10.19	10.19	13.29	13.29	9.85	11.27	5.12	5.12	9.55	8.18	4.76	4.76	10.70	10.41
Movement LOS	B	B	B	B	B	A	B	A	A	A	A	A	A	B	B
d_A, Approach Delay [s/veh]	10.92			11.92				8.39				10.06			
Approach LOS	B			B				A				B			
d_I, Intersection Delay [s/veh]	9.67														
Intersection LOS	A														
Intersection V/C	0.275														

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1674	1674	1674	1674
d_b, Bicycle Delay [s]	0.48	0.48	0.48	0.48
l_b,int, Bicycle LOS Score for Intersection	1.744	1.873	2.066	1.959
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Encalve - Maplewood

Vistro File: N:\...\220916_R0037066.00_Enclave - Maplewood.vistro

Scenario 10 PM 2024 Background

Report File: N:\...\PM Future Background.pdf

9/24/2022

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound				Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-T	Left	Thru	Right	
1	County Road D and Southlawn Drive	Final Base	23	6	89	29	7	28	36	430	35	1	53	244	28	1009
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**23**	**6**	**90**	**29**	**7**	**28**	**36**	**434**	**35**	**1**	**54**	**246**	**28**	**1017**

ID	Intersection Name	Volume Type	Northbound			Southbound				Eastbound				Westbound			
			Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right
2	Beam Avenue and Southlawn Drive	Final Base	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**38**	**10**	**35**	**1**	**100**	**17**	**109**	**6**	**160**	**517**	**37**	**3**	**36**	**323**	**77**

Total Volume
1456
-
0
0
0
1469

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Encalve - Maplewood

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Scenario 11 AM 2024 Future total

Report File: N:\...\AM 2024 Future total.pdf
9/24/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	County Road D and Southlawn Drive	Signalized	HCM 7th Edition	NB Left	0.150	9.1	A
2	Beam Avenue and Southlawn Drive	Signalized	HCM 7th Edition	SB Left	0.142	7.4	A
3	Southlawn Drive and Project Driveway	Two-way stop	HCM 7th Edition	EB Left	0.003	9.7	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: County Road D and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.150

Intersection Setup

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	50.00	150.00	100.00	125.00	325.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D		
Base Volume Input [veh/h]	5	0	21	1	0	2	3	216	11	53	190	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	1	34	0	0	0	0	0	10	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	1	55	1	0	2	3	218	21	60	192	1
Peak Hour Factor	0.6250	1.0000	0.5830	0.2500	1.0000	0.5000	0.7500	0.9000	0.6880	0.7790	0.8800	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	24	1	0	1	1	61	8	19	55	1
Total Analysis Volume [veh/h]	35	1	94	4	0	4	4	242	31	77	218	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	0	4	0	0	8	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	5	15	0	5	15	0
Maximum Green [s]	0	15	0	0	15	0	15	60	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.2	0.0	3.0	4.0	0.0	3.0	4.0	0.0
All red [s]	0.0	2.2	0.0	0.0	2.0	0.0	2.0	1.4	0.0	2.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	2.7	0.0	0.0	2.0	0.0	2.0	3.5	0.0	2.0	3.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	20	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.2	0.0	0.0	3.2	0.0	3.0	3.4	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	40	40	40	40	40	40	40	40	40	40
L, Total Lost Time per Cycle [s]	5.20	5.20	5.20	5.20	5.40	5.40	5.40	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	3.20	3.20	3.20	0.00	3.40	3.40	0.00	3.00	3.00
g_i, Effective Green Time [s]	7	7	7	7	22	14	14	23	17	17
g / C, Green / Cycle	0.18	0.18	0.18	0.18	0.56	0.36	0.36	0.57	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.02	0.06	0.01	0.00	0.00	0.07	0.02	0.04	0.06	0.06
s, saturation flow rate [veh/h]	1412	1592	558	1589	1249	3560	1589	1781	1870	1858
c, Capacity [veh/h]	215	282	279	282	935	1281	572	1213	818	813
d1, Uniform Delay [s]	19.54	14.43	17.16	13.60	3.93	8.81	8.38	3.94	6.75	6.75
k, delay calibration	0.09	0.09	0.04	0.04	0.04	0.13	0.13	0.13	0.13	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.60	0.01	0.01	0.00	0.09	0.05	0.03	0.09	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.34	0.01	0.01	0.00	0.19	0.05	0.06	0.14	0.14
d, Delay for Lane Group [s/veh]	19.84	15.03	17.17	13.61	3.93	8.90	8.42	3.96	6.84	6.84
Lane Group LOS	B	B	B	B	A	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.30	0.68	0.03	0.03	0.01	0.56	0.14	0.16	0.42	0.42
50th-Percentile Queue Length [ft/ln]	7.58	16.95	0.75	0.64	0.21	14.09	3.53	4.07	10.47	10.44
95th-Percentile Queue Length [veh/ln]	0.55	1.22	0.05	0.05	0.01	1.01	0.25	0.29	0.75	0.75
95th-Percentile Queue Length [ft/ln]	13.64	30.51	1.36	1.15	0.37	25.36	6.35	7.33	18.84	18.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	19.84	15.03	15.03	17.17	17.17	13.61	3.93	8.90	8.42	3.96	6.84	6.84
Movement LOS	B	B	B	B	B	B	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	16.32			15.39			8.77			6.10		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.10											
Intersection LOS	A											
Intersection V/C	0.150											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	751	751	3004	3004
d_b, Bicycle Delay [s]	7.79	7.79	5.03	5.03
l_b,int, Bicycle LOS Score for Intersection	1.774	1.573	1.788	1.806
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Beam Avenue and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	7.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.142

Intersection Setup

Name	Southlawn Drive			Southlawn Drive			Beam Avenue				Beam Avenue			
Approach	Northbound			Southbound			Eastbound				Westbound			
Lane Configuration														
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	0	1	1	0	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	225.00	100.00	275.00	325.0	100.0	100.0	225.0	325.0	100.0	100.0	125.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00				30.00			
Grade [%]	0.00			0.00			0.00				0.00			
Curb Present	No			No			No				No			
Crosswalk	No			No			No				No			

Volumes

Name	Southlawn Drive			Southlawn Drive			Beam Avenue				Beam Avenue			
Base Volume Input [veh/h]	18	4	18	24	14	17	4	53	247	20	7	15	213	36
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00													
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	8	1	8	0	2	0	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	4	18	32	15	25	4	56	249	20	7	15	215	37
Peak Hour Factor	0.6430	0.2500	0.9000	0.7500	0.5830	0.7080	0.500	0.697	0.813	0.625	0.583	0.536	0.750	0.692
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	7	4	5	11	6	9	2	20	77	8	3	7	72	13
Total Analysis Volume [veh/h]	28	16	20	43	26	35	8	80	306	32	12	28	287	53
Presence of On-Street Parking	No		No	No		No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0				0			
v_di, Inbound Pedestrian Volume crossing m	0			0			0				0			
v_co, Outbound Pedestrian Volume crossing	0			0			0				0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0				0			
Bicycle Volume [bicycles/h]	0			0			0				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permi	ProtP	Permi	Permi	Permi	ProtP	Permi	Permi
Signal Group	0	8	0	0	4	0	0	5	2	0	0	1	6	0
Auxiliary Signal Groups														
Lead / Lag	-	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	10	0	0	5	10	0	0	5	10	0
Maximum Green [s]	0	30	0	0	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	5	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	10	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No			No	No			No	No	
Maximum Recall		No			No			No	No			No	No	
Pedestrian Recall		No			No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	30	30	30	30	30	30	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	6	6	6	16	11	11	16	9	9
g / C, Green / Cycle	0.20	0.20	0.20	0.20	0.20	0.54	0.35	0.35	0.54	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.03	0.01	0.02	0.07	0.09	0.02	0.03	0.08	0.03
s, saturation flow rate [veh/h]	1341	1703	1372	1870	1589	1255	3560	1589	1202	3560	1589
c, Capacity [veh/h]	411	337	406	370	314	970	1262	564	941	1121	500
d1, Uniform Delay [s]	11.70	9.91	11.99	9.84	9.92	3.46	6.87	6.41	3.36	7.70	7.32
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.14	0.11	0.08	0.15	0.04	0.10	0.04	0.02	0.12	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.11	0.11	0.07	0.11	0.09	0.24	0.06	0.04	0.26	0.11
d, Delay for Lane Group [s/veh]	11.77	10.05	12.11	9.92	10.07	3.50	6.97	6.45	3.38	7.82	7.41
Lane Group LOS	B	B	B	A	B	A	A	A	A	A	A
Critical Lane Group	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.13	0.15	0.21	0.11	0.15	0.10	0.43	0.09	0.04	0.46	0.17
50th-Percentile Queue Length [ft/ln]	3.34	3.83	5.25	2.72	3.75	2.52	10.85	2.20	1.12	11.47	4.19
95th-Percentile Queue Length [veh/ln]	0.24	0.28	0.38	0.20	0.27	0.18	0.78	0.16	0.08	0.83	0.30
95th-Percentile Queue Length [ft/ln]	6.01	6.89	9.46	4.89	6.75	4.54	19.53	3.95	2.01	20.65	7.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.77	10.05	10.05	12.11	9.92	10.07	3.50	3.50	6.97	6.45	3.38	3.38	7.82	7.41
Movement LOS	B	B	B	B	A	B	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	10.80			10.87			6.21				7.29			
Approach LOS	B			B			A				A			
d_I, Intersection Delay [s/veh]	7.43													
Intersection LOS	A													
Intersection V/C	0.142													

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2000	2000	2000	2000
d_b, Bicycle Delay [s]	0.00	0.00	0.00	0.00
l_b,int, Bicycle LOS Score for Intersection	1.665	1.731	1.845	1.850
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Southlawn Drive and Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Southlawn Drive			Southlawn Drive			Project Driveway			Project Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Southlawn Drive			Southlawn Drive			Project Driveway			Project Driveway		
Base Volume Input [veh/h]	4	26	0	0	64	5	2	0	2	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	16	0	0	0	0	0	17	0	52
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	26	3	16	65	5	2	0	2	17	0	52
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	1	4	18	1	1	0	1	5	0	14
Total Analysis Volume [veh/h]	4	28	3	17	71	5	2	0	2	18	0	57
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.05
d_M, Delay for Movement [s/veh]	7.37	0.00	0.00	7.30	0.00	0.00	9.66	9.91	8.52	9.34	10.11	8.59
Movement LOS	A	A	A	A	A	A	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.01	0.00	0.01	0.01	0.01	0.07	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.17	0.08	0.00	0.71	0.36	0.00	0.19	0.15	0.15	1.63	4.26	4.26
d_A, Approach Delay [s/veh]	0.84			1.33			9.09			8.77		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.09											
Intersection LOS	A											

Encalve - Maplewood

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Scenario 11 AM 2024 Future total

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Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	County Road D and Southlawn Drive	Final Base	5	0	21	1	0	2	3	216	11	53	190	1	503
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	17	1	34	0	0	0	0	0	10	6	0	0	68
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**22**	**1**	**55**	**1**	**0**	**2**	**3**	**218**	**21**	**60**	**192**	**1**	**576**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound				Westbound			
			Left	Thru	Right	Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right
2	Beam Avenue and Southlawn Drive	Final Base	18	4	18	24	14	17	4	53	247	20	7	15	213	36
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	8	1	8	0	2	0	0	0	0	0	1
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**4**	**18**	**32**	**15**	**25**	**4**	**56**	**249**	**20**	**7**	**15**	**215**	**37**

Total Volume
690
-
0
20
0
715

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Southlawn Drive and Project Driveway	Final Base	4	26	0	0	64	5	2	0	2	0	0	0	103
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	3	16	0	0	0	0	0	17	0	52	88
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**4**	**26**	**3**	**16**	**65**	**5**	**2**	**0**	**2**	**17**	**0**	**52**	**192**

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Enclave - Maplewood

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	County Road D and Southlawn Drive	Signalized	HCM 7th Edition	NB Left	0.256	12.0	B
2	Beam Avenue and Southlawn Drive	Signalized	HCM 7th Edition	SB Left	0.281	9.7	A
3	Southlawn Drive and Project Driveway	Two-way stop	HCM 7th Edition	WB Left	0.015	11.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: County Road D and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.256

Intersection Setup

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D			
Approach	Northbound			Southbound			Eastbound			Westbound			
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	1	0	1	1	0	0	0
Entry Pocket Length [ft]	200.00	100.00	100.00	100.00	100.00	50.00	150.00	100.00	125.00	325.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00			
Grade [%]	0.00			0.00			0.00			0.00			
Curb Present	No			No			No			No			
Crosswalk	No			No			No			No			

Volumes

Name	Southlawn Drive			Best Buy Driveway			County Road D			County Road D			
Base Volume Input [veh/h]	23	6	89	29	7	28	36	430	35	1	53	244	28
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.010	1.010	1.010	1.010
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	1	19	0	1	0	0	0	29	0	17	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	7	109	29	8	28	36	434	64	1	71	246	28
Peak Hour Factor	0.5750	0.5000	0.8560	0.9060	0.4380	0.8750	0.8180	0.8810	0.6730	0.250	0.722	0.924	0.778
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	14	4	32	8	5	8	11	123	24	1	25	67	9
Total Analysis Volume [veh/h]	56	14	127	32	18	32	44	493	95	4	98	266	36
Presence of On-Street Parking	No		No	No		No	No		No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0			
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0			
v_co, Outbound Pedestrian Volume crossing	0			0			0			0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0			
Bicycle Volume [bicycles/h]	0			0			0			0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Permi	ProtP	Permi	Permi
Signal Group	0	4	0	0	8	0	1	6	0	0	5	2	0
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	5	15	0	0	5	15	0
Maximum Green [s]	0	15	0	0	15	0	15	60	0	0	15	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.2	0.0	3.0	4.0	0.0	0.0	3.0	4.0	0.0
All red [s]	0.0	2.2	0.0	0.0	2.0	0.0	2.0	1.4	0.0	0.0	2.0	1.0	0.0
Split [s]	0	18	0	0	18	0	12	29	0	0	13	30	0
Vehicle Extension [s]	0.0	2.7	0.0	0.0	2.0	0.0	2.0	3.5	0.0	0.0	2.0	3.5	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	0	7	0
Pedestrian Clearance [s]	0	20	0	0	23	0	0	20	0	0	0	11	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.2	0.0	0.0	3.2	0.0	3.0	3.4	0.0	0.0	3.0	3.0	0.0
Minimum Recall		No			No		No	No			No	No	
Maximum Recall		No			No		No	No			No	No	
Pedestrian Recall		No			No		No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	R	L	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	5.20	5.20	5.20	5.20	5.40	5.40	5.40	5.00	5.00	5.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	3.20	3.20	3.20	0.00	3.40	3.40	0.00	3.00	3.00
g_i, Effective Green Time [s]	13	13	13	13	37	28	28	37	29	29
g / C, Green / Cycle	0.21	0.21	0.21	0.21	0.61	0.46	0.46	0.62	0.49	0.49
(v / s)_i Volume / Saturation Flow Rate	0.04	0.09	0.06	0.02	0.04	0.14	0.06	0.06	0.08	0.08
s, saturation flow rate [veh/h]	1355	1614	817	1589	1185	3560	1589	1781	1870	1793
c, Capacity [veh/h]	184	341	271	336	860	1640	732	1102	920	882
d1, Uniform Delay [s]	28.40	20.45	20.10	19.05	4.68	10.13	9.28	4.62	8.43	8.44
k, delay calibration	0.09	0.09	0.04	0.04	0.04	0.50	0.50	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.69	0.12	0.05	0.01	0.47	0.37	0.17	0.39	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.41	0.18	0.10	0.05	0.30	0.13	0.09	0.17	0.17
d, Delay for Lane Group [s/veh]	29.18	21.14	20.22	19.10	4.69	10.60	9.65	4.79	8.82	8.86
Lane Group LOS	C	C	C	B	A	B	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.80	1.65	0.54	0.34	0.16	1.86	0.69	0.43	1.03	1.01
50th-Percentile Queue Length [ft/ln]	19.95	41.20	13.38	8.47	4.11	46.48	17.33	10.71	25.83	25.26
95th-Percentile Queue Length [veh/ln]	1.44	2.97	0.96	0.61	0.30	3.35	1.25	0.77	1.86	1.82
95th-Percentile Queue Length [ft/ln]	35.91	74.16	24.09	15.25	7.40	83.66	31.19	19.27	46.49	45.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.18	21.14	21.14	20.22	20.22	19.10	4.69	10.60	9.65	4.79	4.79	8.84	8.86
Movement LOS	C	C	C	C	C	B	A	B	A	A	A	A	A
d_A, Approach Delay [s/veh]	23.43			19.78			10.05			7.82			
Approach LOS	C			B			B			A			
d_I, Intersection Delay [s/veh]	11.97												
Intersection LOS	B												
Intersection V/C	0.256												

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	427	427	787	833
d_b, Bicycle Delay [s]	18.57	18.57	11.04	10.21
I_b,int, Bicycle LOS Score for Intersection	1.885	1.695	2.081	1.890
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Beam Avenue and Southlawn Drive

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.281

Intersection Setup

Name	Southlawn Drive			Southlawn Drive				Beam Avenue				Beam Avenue			
Approach	Northbound			Southbound				Eastbound				Westbound			
Lane Configuration															
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right	U-tu	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	1	0	0	1	1	0	0	1
Entry Pocket Length [ft]	125.00	100.00	100.00	225.0	100.0	100.0	275.0	325.0	100.0	100.0	225.0	325.0	100.0	100.0	125.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00				30.00			
Grade [%]	0.00			0.00				0.00				0.00			
Curb Present	No			No				No				No			
Crosswalk	No			No				No				No			

Volumes

Name	Southlawn Drive			Southlawn Drive				Beam Avenue				Beam Avenue			
Base Volume Input [veh/h]	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00														
Growth Factor	1.0100	1.0100	1.0100	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	0	4	0	4	0	6	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	11	35	1	104	17	113	6	166	517	37	3	36	323	80
Peak Hour Factor	0.7920	0.4170	0.8750	0.250	0.884	0.607	0.692	0.750	0.859	0.934	0.712	0.750	0.750	0.879	0.679
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	12	7	10	1	29	7	41	2	48	138	13	1	12	92	29
Total Analysis Volume [veh/h]	48	26	40	4	118	28	163	8	193	554	52	4	48	367	118
Presence of On-Street Parking	No		No	No			No	No			No	No			No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0				0				0			
v_di, Inbound Pedestrian Volume crossing m	0			0				0				0			
v_co, Outbound Pedestrian Volume crossing	0			0				0				0			
v_ci, Inbound Pedestrian Volume crossing mi	0			0				0				0			
v_ab, Corner Pedestrian Volume [ped/h]	0			0				0				0			
Bicycle Volume [bicycles/h]	0			0				0				0			

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permi	Permi	Permi	Permi	Permi	ProtP	Permi	Permi	Permi	ProtP	Permi	Permi
Signal Group	0	8	0	0	0	4	0	0	5	2	0	0	1	6	0
Auxiliary Signal Groups															
Lead / Lag	-	-	-	-	-	-	-	-	Lead	-	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	0	10	0	0	5	10	0	0	5	10	0
Maximum Green [s]	0	30	0	0	0	30	0	0	30	30	0	0	30	30	0
Amber [s]	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	0	10	0	0	0	10	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No				No				No				No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	2.0	0.0
Minimum Recall		No				No			No	No			No	No	
Maximum Recall		No				No			No	No			No	No	
Pedestrian Recall		No				No			No	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	36	36	36	36	36	36	36	36	36	36	36
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	0.00	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	10	10	18	12	12	18	10	10
g / C, Green / Cycle	0.27	0.27	0.27	0.27	0.27	0.51	0.34	0.34	0.51	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.09	0.01	0.10	0.17	0.16	0.03	0.05	0.10	0.07
s, saturation flow rate [veh/h]	1192	1689	1335	1870	1589	1215	3560	1589	1031	3560	1589
c, Capacity [veh/h]	446	452	451	500	425	845	1212	541	726	985	440
d1, Uniform Delay [s]	11.82	10.07	13.09	9.82	10.78	5.02	9.29	8.11	4.73	10.52	10.19
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	0.15	0.32	0.05	0.57	0.14	0.27	0.08	0.04	0.23	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.11	0.15	0.27	0.06	0.38	0.24	0.46	0.10	0.07	0.37	0.27
d, Delay for Lane Group [s/veh]	11.92	10.21	13.41	9.87	11.35	5.16	9.56	8.19	4.78	10.75	10.52
Lane Group LOS	B	B	B	A	B	A	A	A	A	B	B
Critical Lane Group	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.27	0.32	0.74	0.13	0.87	0.49	1.26	0.21	0.12	0.92	0.59
50th-Percentile Queue Length [ft/ln]	6.63	8.07	18.55	3.31	21.80	12.21	31.46	5.26	2.90	22.98	14.81
95th-Percentile Queue Length [veh/ln]	0.48	0.58	1.34	0.24	1.57	0.88	2.27	0.38	0.21	1.65	1.07
95th-Percentile Queue Length [ft/ln]	11.93	14.53	33.40	5.96	39.23	21.98	56.63	9.46	5.21	41.36	26.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.92	10.21	10.21	13.41	13.41	9.87	11.35	5.16	5.16	9.56	8.19	4.78	4.78	10.75	10.52
Movement LOS	B	B	B	B	B	A	B	A	A	A	A	A	A	B	B
d_A, Approach Delay [s/veh]	10.93			12.02				8.38				10.12			
Approach LOS	B			B				A				B			
d_I, Intersection Delay [s/veh]	9.72														
Intersection LOS	A														
Intersection V/C	0.281														

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1669	1669	1669	1669
d_b, Bicycle Delay [s]	0.49	0.49	0.49	0.49
l_b,int, Bicycle LOS Score for Intersection	1.748	1.881	2.066	1.963
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Southlawn Drive and Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Southlawn Drive			Southlawn Drive			Project Driveway			Project Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Southlawn Drive			Southlawn Drive			Project Driveway			Project Driveway		
Base Volume Input [veh/h]	5	118	0	0	94	6	6	0	7	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	10	47	0	0	0	0	0	8	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	119	10	47	95	6	6	0	7	8	0	29
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	32	3	13	26	2	2	0	2	2	0	8
Total Analysis Volume [veh/h]	5	129	11	51	103	7	7	0	8	9	0	32
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	7.44	0.00	0.00	7.56	0.00	0.00	11.06	11.65	8.63	11.08	11.73	8.80
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.09	0.04	0.00	0.04	0.02	0.02	0.05	0.10	0.10
95th-Percentile Queue Length [ft/ln]	0.21	0.10	0.00	2.19	1.09	0.00	0.88	0.60	0.60	1.14	2.53	2.53
d_A, Approach Delay [s/veh]	0.26			2.39			9.76			9.30		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.63											
Intersection LOS	B											

Enclave - Maplewood

Vistro File: N:\...\220916_R0037066.00_Enclave - Maplewood.vistro

Scenario 12 PM 2024 Future total

Report File: N:\...\PM 2024 Future total.pdf

9/24/2022

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound				Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-T	Left	Thru	Right	
1	County Road D and Southlawn Drive	Final Base	23	6	89	29	7	28	36	430	35	1	53	244	28	1009
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	9	1	19	0	1	0	0	0	29	0	17	0	0	76
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**32**	**7**	**109**	**29**	**8**	**28**	**36**	**434**	**64**	**1**	**71**	**246**	**28**	**1093**

ID	Intersection Name	Volume Type	Northbound			Southbound				Eastbound				Westbound			
			Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right	U-T	Left	Thru	Right
2	Beam Avenue and Southlawn Drive	Final Base	38	10	35	1	99	17	108	6	158	512	37	3	36	320	76
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	1	0	0	4	0	4	0	6	0	0	0	0	0	3
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**38**	**11**	**35**	**1**	**104**	**17**	**113**	**6**	**166**	**517**	**37**	**3**	**36**	**323**	**80**

Total Volume
1456
-
0
18
0
1487

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3	Southlawn Drive and Project Driveway	Final Base	5	118	0	0	94	6	6	0	7	0	0	0	236
		Growth Factor	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	1.01	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	10	47	0	0	0	0	0	8	0	29	94
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**5**	**119**	**10**	**47**	**95**	**6**	**6**	**0**	**7**	**8**	**0**	**29**	**332**

APPENDIX E

Crash Data

MN CMAT Training Data Dictionary

CRASH_MONTH	CRASH_DAY	CRASH_YEAR	CRASHSEVERITY	NUMBERKILLED	MANNEROFCOLLISION	FIRSTHARMFULEVENT	RELATIONTOINTERSECTION	ROADWAY_NAME	INTERSECTION_NAME	BASIC_TYPE
6	7	2017	3	0	5	10	3	SOUTHLAWN DR		10
12	28	2018	4	0	5	10	3	SOUTHLAWN DR		9
3	4	2019	1	1		8	3	E COUNTY RD D		1
10	31	2021	5	0	90	10	3	SOUTHLAWN DR	COUNTY ROAD D	90

CRASH_MONTH	CRASH_DAY	CRASH_YEAR	CRASHSEVERITY	NUMBERKILLED	MANNEROFCOLLISION	FIRSTHARMFULEVENT	RELATIONTOINTERSECTION	ROADWAY_NAME	INTERSECTION_NAME	BASIC_TYPE
11	10	2017	5	0	13	10	3	BEAM AVE E	SOUTHLAWN DR	9
12	2	2017	5	0	5	10	3	SOUTHLAWN DR		10
7	2	2017	5	0	90	10	3	SOUTHLAWN DR		90
9	27	2017	4	0	5	10	3	SOUTHLAWN DR		9
12	21	2017	4	0	90	10	3	SOUTHLAWN DR		90
3	22	2017	5	0		11	90	SOUTHLAWN DR		4
9	12	2018	5	0	5	10	3	BEAM AVE E		10
3	29	2019	4	0	5	10	3	BEAM AVE E		10
11	25	2019	2	0	5	10	3	BEAM AVE E		10
8	21	2019	3	0	5	10	3	BEAM AVE E		10
9	27	2019	3	0	5	10	3	BEAM AVE E		10
5	31	2019	4	0	5	10	10	BEAM AVE E		10
10	13	2019	4	0	5	10	3	BEAM AVE E	SOUTHLAWN DR	10
12	11	2019	4	0	5	10	3	SOUTHLAWN DR		10
6	1	2019	5	0	13	10	3	SOUTHLAWN DR	BEAM AVE E	9
5	31	2019	4	0	5	10	3	SOUTHLAWN DR		10
7	11	2019	4	0	5	10	3	SOUTHLAWN DR		9
8	27	2020	3	0	5	10	3	BEAM AVE E		10
2	17	2020	3	0	5	10	3	BEAM AVE E		10
9	17	2020	3	0	13	10	3	SOUTHLAWN DR		7
5	6	2021	3	0	12	10	3	BEAM AVE E		7
1	31	2021	4	0	5	10	3	SOUTHLAWN DR		10
3	21	2021	4	0	12	10	10	SOUTHLAWN DR		7
1	31	2021	4	0	5	10	3	SOUTHLAWN DR		10
3	21	2021	4	0	12	10	10	SOUTHLAWN DR		7
1	12	2021	3	0	12	10	3	RAMP67		7
1	3	2022	4	0	5	10	10	SOUTHLAWN DR	BEAM AVE E	10
1	12	2022	4	0	12	10	27	RAMP68	BEAM AVE E	7

MnCMAT2 Data Dictionary

This file contains information on all of the Data Elements and associated Attributes in MnCMAT2.

The table below lists all the Data Elements. They are in order first by level, then alphabetically.

APPCODEID and **APPCODENAME** (columns A and B) come from the MnDOT source data file. They are used only for reference here.
ABBRV (column C) is the abbreviated column heading used in some reports.
Final Name (column D) lists the name of the data element.
Level (Column E) shows whether the data element is at the Crash, Spatial, or Unit Level
Filter (column F) indicates if the data element has a Filter list. (for example, Incident ID does NOT have a Filter list as you would have to list all Incident ID's in the dropdown menu).
Chart (column G) indicates whether a Chart is available for that data element.

APPCODEID	APPCODENAME	ABBRV	Final Name	LEVEL	FILTER	CHART
		BASIC	Basic Type	Crash Level	YES	YES
	CITY	CITY	City	Crash Level	YES	YES
	COUNTY	CNTY	County	Crash Level	YES	YES
1	Crash Severity	CSEV	Crash Severity	Crash Level	YES	YES
114	Accident Day	DAYW	Day of Week	Crash Level	YES	YES
	Date	DATE	Date	Crash Level	YES	
102	Divided Roadway Direction	DIVDIR	Divided Rdwy Dir	Crash Level	YES	
69	First Harmful Event/Crash Type	FHE	First Harmful Event	Crash Level	YES	YES
	INCIDENT NUMBER	INCID	Incident ID	Crash Level		
	INTERSECTION WITH	INTW	Intersection Name	Crash Level		
29	Light Condition	LIGHT	Light Condition	Crash Level	YES	YES
	LOCAL ID	LOCALID	Local ID	Crash Level		
14	Manner of Collision	MOC	Manner of Collision	Crash Level	YES	YES
	Measure	MEAS	Measure	Crash Level		
115	Accident Month	MON	Month	Crash Level	YES	YES
	Narrative	Narrative	Narrative	Crash Level		
	NUMBER OF FATALITIES	NUMK	Number Killed	Crash Level	YES	YES
	NUMBER OF VEHICLES	NUMV	Number of Vehicles	Crash Level	YES	YES
	Officer Sketch		Officer Sketch	Crash Level		
28	Relationship to Intersection	RELINT	Relationship to Intersection	Crash Level	YES	YES
45	Roadway Surface	RDSRF	Roadway Surface	Crash Level	YES	YES
	ROUTE NAME	RNAME	Route Name	Crash Level		
	ROUTE NUMBER	RNUM	Route Number	Crash Level		
48	Route System	RSYS	Route System	Crash Level	YES	YES
	TIME OF CRASH	TIME	Time	Crash Level	YES	YES
	Township	TWNS	Township	Crash Level		
63	Weather Type	WTHR1	Weather 1	Crash Level	YES	YES
63	Weather Type	WTHR2	Weather 2	Crash Level	YES	YES
46	Roadway Workzone	WZ	Work Zone Type	Crash Level	YES	YES
	YEAR	YEAR	Year	Crash Level	YES	YES
	CITY		City	SPATIAL	YES	
	COUNTY		County	SPATIAL	YES	

	Latitude		Latitude	SPATIAL		
	Longitude		Longitude	SPATIAL		
	MNDOT DISTRICT	DIST	MNDOT District	SPATIAL	YES	YES
	STATE PATROL DISTRICT	PTRLD	State Patrol District	SPATIAL	YES	YES
	TRIBAL GOVERNMENT	TRIBE	Tribal Government	SPATIAL	YES	YES
	UTMX	UTMX	UTMX	SPATIAL		
	UTMY	UTMY	UTMY	SPATIAL		
	AGE	AGE	Age	Unit 0-8	YES	YES
76	Horizontal Alignment	ALGN	Alignment	Unit 0-4	YES	YES
10	Contributing Factor/Action Time of Crash	CFACT1	Contrib Factor1	Unit 0-8	YES	
10	Contributing Factor/Action Time of Crash	CFACT2	Contrib Factor2	Unit 0-8	YES	
15	Direction of Travel	DIR	Direction of Travel	Unit 0-4	YES	
77	Grade	GRADE	Grade	Unit 0-4	YES	YES
112	Non-Motorist Location at Time of Crash	NMLOC	Non-Motorist Location	Unit 5-8	YES	
83	Non-Motorist Maneuver Prior to Crash	NMMAN	Non-Motorist Maneuver	Unit 5-8	YES	
39	Driver Physical Condition	PCOND	Physical Condition	Unit 0-8	YES	YES
43	Roadway Design	RDSGN	Roadway Design	Unit 0-4	YES	YES
52	Sex Code	SEX	Sex	Unit 0-8	YES	YES
118	Speed Limit MPH	SL	Speed Limit	Unit 0-4	YES	YES
55	Traffic Control Device	TCD	Traffic Control Device	Unit 0-4	YES	YES
72	Unit Type	UTYPE	Unit Type	Unit 0-8	YES	YES
3	Pre-Crash Maneuver	VMAN	Vehicle Maneuver	Unit 0-4	YES	
59	Vehicle Type	VTYPE	Vehicle Type	Unit 0-4	YES	YES

The following 3 tabs contain the data elements and atributes.

Filter and Charts shows the attributes and the conversion tables used in both Filters and Charts.
Contributing Factor shows attributes. It has its own tab due to the large number of attributes.
First Harmful Event shows attributes. It has its own tab due to the large number of attributes.

The left hand columns **(columns A through D**) contain all data elements and attribute names and values.
Values in Red are 'retired'. These are attributes in OLD (pre-2016) crashes that did not match with the NEW attributes.

The right hand columns (**columns F through S**) contain the attributes used in Charts and Filter lists.
Columns I through F show the values that apply for each attribute.

These two sets of columns are normally the same. Examples of when and why they are different:

Too Many Attributes: For example - **Age**
The actual age (in years) is stored for each person. But a Filter list or Chart of more than 100 numbers is unmanageable, so ages are grouped into categories

Old Attributes: For Example - **Direction of Travel**
OLD crashes had 8 directions. NEW crashes have only the 4 cardinal directions
So OLD crashes with Direction of NORTHEAST retain the value of 5, but **when you Chart and Filter:**
NORTHEAST is grouped into the Northbound category. Likewise, NORTHWEST is put into Northbound, and SOUTHEAST and SOUTHWEST are put into Southbound (see example below).

ACTUAL VALUES		Filter and Chart Values			
Northbound	1	Northbound	1	5	8
Southbound	2	Southbound	2	6	7
Eastbound	3	Eastbound	3		
Westbound	4	Westbound	4		
Not on Roadway	10	Not on Roadway	10		
Unknown	99	Unknown	99		
	0				
NORTHEAST	5				
SOUTHEAST	6				
SOUTHWEST	7				
NORTHWEST	8				
OTHER	90				
Not Applicable	98				

Please see the "Introduction" tab for more information on this tab

	Actual Attributes>>		
APPCODEID	**APPCODENAME**	**NAME**	**VALUE**
	Basic Type	Pedestrian	1
	Basic Type	Bike	2
	Basic Type	Single Veh ROR	3
	Basic Type	Single Veh other	4
	Basic Type	Sideswipe Passing	5
	Basic Type	Sideswipe Opposing	6
	Basic Type	Rear End	7
	Basic Type	Head On	8
	Basic Type	Left Turn	9
	Basic Type	Angle	10
	Basic Type	Other	99
	City		
	County		
1	Crash Severity		0
1	Crash Severity	K -Fatal	1
1	Crash Severity	A- Serious Injury	2
1	Crash Severity	B - Minor Injury	3
1	Crash Severity	C - Possible Injury	4
1	Crash Severity	N - Prop Dam Only	5
114	Day Of Week		0
114	Day Of Week	Sunday	1
114	Day Of Week	Monday	2
114	Day Of Week	Tuesday	3
114	Day Of Week	Wednesday	4
114	Day Of Week	Thursday	5
114	Day Of Week	Friday	6
114	Day Of Week	Saturday	7
114	Day Of Week		
	Date		
44	Divided Rdwy Dir	Not Applicable	98
44	Divided Rdwy Dir	East	E
44	Divided Rdwy Dir	North	N
44	Divided Rdwy Dir	South	S
44	Divided Rdwy Dir	West	W
44	Divided Rdwy Dir		0
69	First Harmful Event	See separate Tab	
	Incident ID		
	Intersect With		
29	Light Condition	Daylight	1

	FILTER AND CHART DISPLAYS>>>		
APPCODEID	**Final Name**	**Attributes**	**Values>>>>>>**
	Basic Type	Pedestrian	1
	Basic Type	Bike	2
	Basic Type	Single Veh ROR	3
	Basic Type	Single Veh other	4
	Basic Type	Sideswipe Same Direction	5
	Basic Type	Sideswipe Opposing Direction	6
	Basic Type	Rear End	7
	Basic Type	Head On	8
	Basic Type	Left Turn	9
	Basic Type	Angle	10
	Basic Type	Other	99
	City		
	County		
1	Crash Severity		0
1	Crash Severity	K -Fatal	1
1	Crash Severity	A- Serious Injury	2
1	Crash Severity	B - Minor Injury	3
1	Crash Severity	C - Possible Injury	4
1	Crash Severity	N - Prop Dam Only	5
114	Day Of Week		0
114	Day Of Week	Sunday	1
114	Day Of Week	Monday	2
114	Day Of Week	Tuesday	3
114	Day Of Week	Wednesday	4
114	Day Of Week	Thursday	5
114	Day Of Week	Friday	6
114	Day Of Week	Saturday	7
114	Day Of Week		
	Date		
44	Divided Rdwy Dir	Not Applicable	98
44	Divided Rdwy Dir	East	E
44	Divided Rdwy Dir	North	N
44	Divided Rdwy Dir	South	S
44	Divided Rdwy Dir	West	W
44	Divided Rdwy Dir		0
	Incident ID		
	Intersect With		
29	Light Condition	Daylight	1

29	Light Condition	Sunrise	2		29	Light Condition	Sunrise	2															
29	Light Condition	Sunset	3		29	Light Condition	Sunset	3															
29	Light Condition	Dark (Str Lights On)	4		29	Light Condition	Dark (Str Lights On)	4															
29	Light Condition	Dark (Str Lights Off)	5		29	Light Condition	Dark (Str Lights Off)	5															
29	Light Condition	Dark (No Str Lights)	6		29	Light Condition	Dark (No Str Lights)	6															
29	Light Condition	Dark (Unknown Light)	7		29	Light Condition	Dark (Unknown Light)	7															
29	Light Condition	Other	90		29	Light Condition	Other	90															
29	Light Condition	Unknown	99		29	Light Condition	Unknown	99															
29	Light Condition		0		29	Light Condition		0															
	Local ID					Local ID																	
14	Manner of Collision	Angle	5		14	Manner of Collision	Angle	5	3	6													
14	Manner of Collision	Sideswipe - Passing	10		14	Manner of Collision	Sideswipe - Same Direction	10															
14	Manner of Collision	Sideswipe - Opposing	11		14	Manner of Collision	Sideswipe - Opposing Direction	11															
14	Manner of Collision	Front to Rear	12		14	Manner of Collision	Front to Rear	12	1														
14	Manner of Collision	Front to Front	13		14	Manner of Collision	Front to Front	13	8														
14	Manner of Collision	Rear to Side	14		14	Manner of Collision	Rear to Side	14															
14	Manner of Collision	Rear to Rear	15		14	Manner of Collision	Rear to Rear	15															
14	Manner of Collision	Other	90		14	Manner of Collision	Other	90															
14	Manner of Collision	Unknown	99		14	Manner of Collision	Unknown	99															
14	Manner of Collision	Not Applicable	0		14	Manner of Collision	Not Applicable	0	4	7	98												
14	Manner of Collision	REAR-END	1		14	Manner of Collision	~~REAR-END~~																
14	Manner of Collision	LEFT TURN	3		14	Manner of Collision	~~LEFT TURN~~																
14	Manner of Collision	RAN OFF RD-LEFT	4		14	Manner of Collision	~~RAN OFF RD-LEFT~~																
14	Manner of Collision	RIGHT TURN	6		14	Manner of Collision	~~RIGHT TURN~~																
14	Manner of Collision	RAN OFF RD-RIGHT	7		14	Manner of Collision	~~RAN OFF RD-RIGHT~~																
14	Manner of Collision	HEAD-ON	8		14	Manner of Collision	~~HEAD-ON~~																
14	Manner of Collision	NOT APPLICABLE	98		14	Manner of Collision	~~NOT APPLICABLE~~																
	Measure					Measure																	
115	Month		0		115	Month		0															
115	Month	January	1		115	Month	January	1															
115	Month	February	2		115	Month	February	2															
115	Month	March	3		115	Month	March	3															
115	Month	April	4		115	Month	April	4															
115	Month	May	5		115	Month	May	5															
115	Month	June	6		115	Month	June	6															
115	Month	July	7		115	Month	July	7															
115	Month	August	8		115	Month	August	8															
115	Month	September	9		115	Month	September	9															
115	Month	October	10		115	Month	October	10															
115	Month	November	11		115	Month	November	11															
115	Month	December	12		115	Month	December	12															
	Narrative					Narrative																	
	Number Of Fatalities					Number Of Fatalities																	
	Number Of Vehicles					Number Of Vehicles																	

	Officer Sketch				Officer Sketch														
28	Relation to Intersection	Not at Intersection or Interchange	2		28	Relation to Intersection	Not at Intersection or Interchange	2											
28	Relation to Intersection	Four-Way Intersection	3		28	Relation to Intersection	Four-Way Intersection	3											
28	Relation to Intersection	T Intersection	4		28	Relation to Intersection	T Intersection	4											
28	Relation to Intersection	Y Intersection	5		28	Relation to Intersection	Y Intersection	5											
28	Relation to Intersection	Five-Way Intersection or More	6		28	Relation to Intersection	Five-Way Intersection or More	6											
28	Relation to Intersection	Roundabout	7		28	Relation to Intersection	Roundabout	7	1										
28	Relation to Intersection	Other Traffic Circle	8		28	Relation to Intersection	Other Traffic Circle	8											
28	Relation to Intersection	Intersection Related	10		28	Relation to Intersection	Intersection Related	10											
28	Relation to Intersection	Driveway Access Related	16		28	Relation to Intersection	Driveway Access Related	16	15										
28	Relation to Intersection	At School Crossing	18		28	Relation to Intersection	At School Crossing	18											
28	Relation to Intersection	Railway Grade Crossing	19		28	Relation to Intersection	Railway Grade Crossing	19											
28	Relation to Intersection	Shared Use Path or Trail	20		28	Relation to Intersection	Shared Use Path or Trail	20											
28	Relation to Intersection	Interchange on Ramp	25		28	Relation to Intersection	Interchange on Ramp	25											
28	Relation to Intersection	Interchange off Ramp	26		28	Relation to Intersection	Interchange off Ramp	26											
28	Relation to Intersection	Entrance/Exit Ramp	27		28	Relation to Intersection	Entrance/Exit Ramp	27											
28	Relation to Intersection	Crossover Related	28		28	Relation to Intersection	Crossover Related	28											
28	Relation to Intersection	Interchange Other Areas	29		28	Relation to Intersection	Interchange Other Areas	29											
28	Relation to Intersection	Acceleration / Deceleration Lane	30		28	Relation to Intersection	Acceleration / Deceleration Lane	30											
28	Relation to Intersection	Other	90		28	Relation to Intersection	Other	90											
28	Relation to Intersection	Unknown	99		28	Relation to Intersection	Unknown	99											
28	Relation to Intersection		0		28	Relation to Intersection		0	98										
28	Relation to Intersection	CIRCLE/ROUNDABOUT	1		28	Relation to Intersection	~~CIRCLE/ROUNDABOUT~~												
28	Relation to Intersection	ALLEY/DRIVEWAY	15		28	Relation to Intersection	~~ALLEY/DRIVEWAY~~												
28	Relation to Intersection	NOT APPLICABLE	98		28	Relation to Intersection	~~NOT APPLICABLE~~												
45	Roadway Surface	Dry	1		45	Roadway Surface	Dry	1											
45	Roadway Surface	Wet	2		45	Roadway Surface	Wet	2											
45	Roadway Surface	Snow	3		45	Roadway Surface	Snow	3											
45	Roadway Surface	Slush	4		45	Roadway Surface	Slush	4											
45	Roadway Surface	Ice/Frost	5		45	Roadway Surface	Ice/Frost	5											
45	Roadway Surface	Water (Standing or Moving)	6		45	Roadway Surface	Water (Standing or Moving)	6											
45	Roadway Surface	Mud/Dirt/Gravel	7		45	Roadway Surface	Mud/Dirt/Gravel	7											
45	Roadway Surface	Debris	8		45	Roadway Surface	Debris	8											
45	Roadway Surface	Oily	9		45	Roadway Surface	Oily	9											
45	Roadway Surface	Sand	10		45	Roadway Surface	Sand	10											
45	Roadway Surface	Ruts/Holes/Bumps	11		45	Roadway Surface	Ruts/Holes/Bumps	11											
45	Roadway Surface	Other	90		45	Roadway Surface	Other	90											
45	Roadway Surface	Unknown	99		45	Roadway Surface	Unknown	99											
45	Roadway Surface		0		45	Roadway Surface		0											
	Route Name					Route Name													
	Route Number					Route Number													
48	Route System	Interstate Trunk Highway - ISTH	1		48	Route System	01-ISTH	1											
48	Route System	U.S. Trunk Highway - USTH	2		48	Route System	02-USTH	2											
48	Route System	State Trunk Highway - MNTH	3		48	Route System	03-MNTH	3											
48	Route System	County State Aid Highway - CSAH	4		48	Route System	04-CSAH	4											
48	Route System	Municipal State Aid Street - MSAS	5		48	Route System	05-MSAS	5											
48	Route System	County Road - CNTY	7		48	Route System	07-CR	7											

48	Route System	Township Road	8		48	Route System	08-TWNS	8																
48	Route System	Unorganized Township Road	9		48	Route System	09-UTWN	9																
48	Route System	Local (or City) Street - MUN	10		48	Route System	10-MUN	10																
48	Route System	National Park Road - NATP	11		48	Route System	11-NATP	11																
48	Route System	National Forest Road - NATF	12		48	Route System	12-NATF	12																
48	Route System	Indian Service Road - IND	13		48	Route System	13-IND	13																
48	Route System	State Forest Road - SFR	14		48	Route System	14-SFR	14																
48	Route System	State Park Road - SPRK	15		48	Route System	15-SPRK	15																
48	Route System	Military Road - MIL	16		48	Route System	16-MIL	16																
48	Route System	National Monument Road - NATM	17		48	Route System	17-NATM	17																
48	Route System	National Wildlife Refuge Road	18		48	Route System	18-NWRR	18																
48	Route System	Frontage Road - FRNT	19		48	Route System	19-FRNT	19																
48	Route System	State Game Preserve Road	20		48	Route System	20-SGPR	20																
48	Route System	Private Road Open to Public	21		48	Route System	21-PRIV	21																
48	Route System	Ramp or Connector	22		48	Route System	22-RAMP	22																
48	Route System	Airport Roads	23		48	Route System	23-AIRP	23																
48	Route System	Bureau of Indian Affairs Road - BIA	24		48	Route System	24-BIA	24																
48	Route System	Non-Trafficway	25		48	Route System	25-NTRF	25																
48	Route System	Other Local Road - OLR	26		48	Route System	26-OLR	26																
48	Route System	Railroad Service Road - RSR	27		48	Route System	27-RSR	27																
48	Route System	State Toll Road - STL	28		48	Route System	28-STL	28																
48	Route System	Local Toll Road - LTL	29		48	Route System	29-LTL	29																
48	Route System	Alleyways	30		48	Route System	30-ALLY	30																
48	Route System	USBR Road - BRR	31		48	Route System	31-BRR	31																
48	Route System	Other Road	32		48	Route System	32-OTHR	32																
48	Route System	BLM Road	33		48	Route System	33-BLM	33																
48	Route System	Non Trafficway	34		48	Route System	34-NTRF	34																
48	Route System	HOV/HOT/Reversible Lanes on Interstate - IH	41		48	Route System	41-IHO	41																
48	Route System	UHO HOV/HOT/Reversible Lanes on US Hwy -	42		48	Route System	42-UHO	42																
48	Route System	MHO HOV/HOT/Reversible Lanes on MN Hwy	43		48	Route System	43-MHO	43																
48	Route System	Non-numbered Interstates - UNI	51		48	Route System	51-UNI	51																
48	Route System	Non-numbered US Hwy - UNU	52		48	Route System	52-UNU	52																
48	Route System	Non-numbered MN Hwy - UNM	53		48	Route System	53-UNM	53																
48	Route System	Not Located	98		48	Route System	UNK	98																
	Time	ACTUAL TIME				Time	12:00 AM TO 12:59 AM																	
							1:00 AM TO 1:59 AM																	
							ETC																	
	Township					Township																		
63	Weather Type	Clear	1		63	Weather Type	Clear	1																
63	Weather Type	Cloudy	2		63	Weather Type	Cloudy	2																
63	Weather Type	Rain	3		63	Weather Type	Rain	3																
63	Weather Type	Snow	4		63	Weather Type	Snow	4																
63	Weather Type	Sleet, Hail (Freezing Rain or Drizzle)	5		63	Weather Type	Sleet, Hail (Freezing Rain or Drizzle)	5																
63	Weather Type	Fog/Smog/Smoke	6		63	Weather Type	Fog/Smog/Smoke	6																
63	Weather Type	Blowing Sand/Soil/Dirt/Snow	7		63	Weather Type	Blowing Sand/Soil/Dirt/Snow	7																
63	Weather Type	Severe Crosswinds	8		63	Weather Type	Severe Crosswinds	8																
63	Weather Type	Other	90		63	Weather Type	Other	90																
63	Weather Type	Unknown	99		63	Weather Type	Unknown	99																
63	Weather Type		0		63	Weather Type		0																

63	Weather Type	Not Applicable	98
46	Work Zone Type		0
46	Work Zone Type	Lane Closure	1
46	Work Zone Type	Lane Shift/Crossover	2
46	Work Zone Type	Work on Shoulder/Median	3
46	Work Zone Type	Intermittent or Moving Work Zone	6
46	Work Zone Type	Other	90
46	Work Zone Type	NOT APPLICABLE	98
46	Work Zone Type	UNKNOWN	99
	Year		
	MNDOT District	Duluth	1
	MNDOT District	Bemidji	2
	MNDOT District	Baxter	3
	MNDOT District	Detroit Lakes	4
	MNDOT District	Metro	5
	MNDOT District	Rochester	6
	MNDOT District	Mankato	7
	MNDOT District	Willmar	8
	State Patrol District	Rochester	2100
	State Patrol District	Mankato	2200
	State Patrol District	Marshall	2300
	State Patrol District	Oakdale	2400
	State Patrol District	Golden Valley	2500
	State Patrol District	St Cloud	2600
	State Patrol District	Duluth	2700
	State Patrol District	Brainerd	2800
	State Patrol District	Detroit Lakes	2900
	State Patrol District	Virginia	3100
	State Patrol District	Thief Rvr Falls	3200
	Tribal Government		
	Age	Actual Age	

63	Weather Type	Not Applicable	98
46	Work Zone Type		0
46	Work Zone Type	Lane Closure	1
46	Work Zone Type	Lane Shift/Crossover	2
46	Work Zone Type	Work on Shoulder/Median	3
46	Work Zone Type	Intermittent or Moving Work Zone	6
46	Work Zone Type	Other	90
46	Work Zone Type	NOT APPLICABLE	98
46	Work Zone Type	UNKNOWN	99
	Year		
	MNDOT District	Duluth	1
	MNDOT District	Bemidji	2
	MNDOT District	Baxter	3
	MNDOT District	Detroit Lakes	4
	MNDOT District	Metro	5
	MNDOT District	Rochester	6
	MNDOT District	Mankato	7
	MNDOT District	Willmar	8
	State Patrol District	Rochester	2100
	State Patrol District	Mankato	2200
	State Patrol District	Marshall	2300
	State Patrol District	Oakdale	2400
	State Patrol District	Golden Valley	2500
	State Patrol District	St Cloud	2600
	State Patrol District	Duluth	2700
	State Patrol District	Brainerd	2800
	State Patrol District	Detroit Lakes	2900
	State Patrol District	Virginia	3100
	State Patrol District	Thief Rvr Falls	3200
	Tribal Government		
	Age	<14	
	Age	14	
	Age	15	
	Age	16	
	Age	17	
	Age	18	
	Age	19	
	Age	20	
	Age	21-24	
	Age	25-29	
	Age	30-34	
	Age	35-39	
	Age	40-44	
	Age	45-49	
	Age	50-54	
	Age	55-59	

						Age	60-64																
						Age	65-69																
						Age	70-74																
						Age	75-79																
						Age	80-84																
						Age	85-89																
						Age	90-94																
						Age	95+																
76	Alignment	Straight	11		76	Alignment	Straight	11															
76	Alignment	Curve Left	12		76	Alignment	Curve Left	12															
76	Alignment	Curve Right	13		76	Alignment	Curve Right	13															
76	Alignment		0		76	Alignment		0	90	99													
76	Alignment	CURVE	10		76	Alignment	CURVE (pre 2016)	10															
76	Alignment	OTHER	90		76	Alignment	~~OTHER~~																
76	Alignment	UNKNOWN	99		76	Alignment	~~UNKNOWN~~																
10	Contributing Factor/Action	No Clear Contributing Action	1		SEE "Contrb Fctr" tab																		
15	Direction of Travel	Northbound	1		15	Direction of Travel	Northbound	1	5	8													
15	Direction of Travel	Southbound	2		15	Direction of Travel	Southbound	2	6	7													
15	Direction of Travel	Eastbound	3		15	Direction of Travel	Eastbound	3															
15	Direction of Travel	Westbound	4		15	Direction of Travel	Westbound	4															
15	Direction of Travel	Not on Roadway	10		15	Direction of Travel	Not on Roadway	10															
15	Direction of Travel	Unknown	99		15	Direction of Travel	Unknown	99															
15	Direction of Travel		0		15	Direction of Travel		0	98														
15	Direction of Travel	NORTHEAST	5		15	Direction of Travel	~~NORTHEAST~~																
15	Direction of Travel	SOUTHEAST	6		15	Direction of Travel	~~SOUTHEAST~~																
15	Direction of Travel	SOUTHWEST	7		15	Direction of Travel	~~SOUTHWEST~~																
15	Direction of Travel	NORTHWEST	8		15	Direction of Travel	~~NORTHWEST~~																
15	Direction of Travel	OTHER	90		15	Direction of Travel	OTHER	90															
15	Direction of Travel	Not Applicable	98		15	Direction of Travel	~~Not Applicable~~																
77	Grade	Level	21		77	Grade	Level	21															
77	Grade	Hillcrest	22		77	Grade	Hillcrest	22															
77	Grade	Uphill	23		77	Grade	Uphill	23															
77	Grade	Downhill	24		77	Grade	Downhill	24															
77	Grade	Sag (Bottom)	25		77	Grade	Sag (Bottom)	25															
77	Grade		0		77	Grade		0															
77	Grade	GRADE (pre 2016)	20		77	Grade	GRADE (pre 2016)	20															
112	Non-Motorist Location	Intersection - Marked Crosswalk	1		112	Non-Motorist Location	Intersection - Marked Crosswalk	1															
112	Non-Motorist Location	Intersection - Unmarked Crosswalk	2		112	Non-Motorist Location	Intersection - Unmarked Crosswalk	2															
112	Non-Motorist Location	Intersection - Other	3		112	Non-Motorist Location	Intersection - Other	3															
112	Non-Motorist Location	Midblock- Marked Crosswalk	4		112	Non-Motorist Location	Midblock- Marked Crosswalk	4															
112	Non-Motorist Location	Travel Lane - Other Location	5		112	Non-Motorist Location	Travel Lane - Other Location	5															
112	Non-Motorist Location	Bicycle Lane	6		112	Non-Motorist Location	Bicycle Lane	6															
112	Non-Motorist Location	Shoulder/Roadside	7		112	Non-Motorist Location	Shoulder/Roadside	7															
112	Non-Motorist Location	Sidewalk	8		112	Non-Motorist Location	Sidewalk	8															
112	Non-Motorist Location	Median/Crossing Island	9		112	Non-Motorist Location	Median/Crossing Island	9															
112	Non-Motorist Location	Driveway Access	10		112	Non-Motorist Location	Driveway Access	10															
112	Non-Motorist Location	Shared - Use Path or Trail	11		112	Non-Motorist Location	Shared - Use Path or Trail	11															

112	Non-Motorist Location	Non-Trafficway Area	12	112	Non-Motorist Location	Non-Trafficway Area	12															
112	Non-Motorist Location	Other	90	112	Non-Motorist Location	Other	90															
112	Non-Motorist Location	Unknown	99	112	Non-Motorist Location	Unknown	99															
112	Non-Motorist Location		0	112	Non-Motorist Location		0															
83	Non-Motorist Maneuver	Walk/Cycle Across Traffic (X-ing Road)	30	83	Non-Motorist Maneuver	Walk/Cycle Across Traffic (X-ing Road)	30	1	2	3	4	5	6	22	23	24	25					
83	Non-Motorist Maneuver	Standing/Stopped	31	83	Non-Motorist Maneuver	Standing/Stopped	31															
83	Non-Motorist Maneuver	Walk/Cycle With Traffic	32	83	Non-Motorist Maneuver	Walk/Cycle With Traffic	32	9	19													
83	Non-Motorist Maneuver	Walk/Cycle Against Traffic	33	83	Non-Motorist Maneuver	Walk/Cycle Against Traffic	33	10	20													
83	Non-Motorist Maneuver	Walk/Cycle on Sidewalk	34	83	Non-Motorist Maneuver	Walk/Cycle on Sidewalk	34															
83	Non-Motorist Maneuver	In Roadway - Other (Work, Play, etc.)	35	83	Non-Motorist Maneuver	In Roadway - Other (Work, Play, etc.)	35	7	8	11	12	15	16	17	26							
83	Non-Motorist Maneuver	Next to Roadway (e.g, Shoulder, Median)	36	83	Non-Motorist Maneuver	Next to Roadway (e.g, Shoulder, Median)	36															
83	Non-Motorist Maneuver	Going to or From School (K-12)	37	83	Non-Motorist Maneuver	Going to or From School (K-12)	37															
83	Non-Motorist Maneuver	Going to School Bus	38	83	Non-Motorist Maneuver	Going to School Bus	38															
83	Non-Motorist Maneuver	Coming From School Bus	39	83	Non-Motorist Maneuver	Coming From School Bus	39	13														
83	Non-Motorist Maneuver	Working in Trafficway (Maint, Constr)	40	83	Non-Motorist Maneuver	Working in Trafficway (Maint, Constr)	40															
83	Non-Motorist Maneuver	Working in Trafficway (Utility)	41	83	Non-Motorist Maneuver	Working in Trafficway (Utility)	41															
83	Non-Motorist Maneuver	Working in Trafficway (EMS, Police,Fire)	42	83	Non-Motorist Maneuver	Working in Trafficway (EMS, Police,Fire)	42															
83	Non-Motorist Maneuver	Going to or From Public Transit	43	83	Non-Motorist Maneuver	Going to or From Public Transit	43	14														
83	Non-Motorist Maneuver	Other	90	83	Non-Motorist Maneuver	Other	90	18														
83	Non-Motorist Maneuver	Unknown	99	83	Non-Motorist Maneuver	Unknown	99															
83	Non-Motorist Maneuver		0	83	Non-Motorist Maneuver		0	98														
83	Non-Motorist Maneuver	PED XNG W SIGNAL	1	83	Non-Motorist Maneuver	~~PED XNG W SIGNAL~~																
83	Non-Motorist Maneuver	PED XNG AGNT SIG	2	83	Non-Motorist Maneuver	~~PED XNG AGNT SIG~~																
83	Non-Motorist Maneuver	PED DARTNG INTO TRAF	3	83	Non-Motorist Maneuver	~~PED DARTNG N2 TR~~																
83	Non-Motorist Maneuver	PED--OTHR IMPROP	4	83	Non-Motorist Maneuver	~~PED--OTHR IMPROP~~																
83	Non-Motorist Maneuver	PED XNG NO MK XWK	5	83	Non-Motorist Maneuver	~~PED XNG N MK XWK~~																
83	Non-Motorist Maneuver	PED XNG-NO SIG/X	6	83	Non-Motorist Maneuver	~~PED XNG NO SIG/X~~																
83	Non-Motorist Maneuver	PED FAIL YLD ROW	7	83	Non-Motorist Maneuver	~~PED FAIL YLD ROW~~																
83	Non-Motorist Maneuver	PED INATEN/DISTR	8	83	Non-Motorist Maneuver	~~PED INATEN/DISTR~~																
83	Non-Motorist Maneuver	PED WLKRUN W TRF	9	83	Non-Motorist Maneuver	~~PED WLKRUN W TRF~~																
83	Non-Motorist Maneuver	PED WLKRN AGN TR	10	83	Non-Motorist Maneuver	~~PED WLKRN AGN TR~~																
83	Non-Motorist Maneuver	PED STD/LY IN RD	11	83	Non-Motorist Maneuver	~~PED STD/LY IN RD~~																
83	Non-Motorist Maneuver	PED EMG BHD PK V	12	83	Non-Motorist Maneuver	~~PED EMG BHD PK V~~																
83	Non-Motorist Maneuver	CHLD ON/OFF SBUS	13	83	Non-Motorist Maneuver	~~CHLD ON/OFF SBUS~~																
83	Non-Motorist Maneuver	PERSN ON/OFF VEH	14	83	Non-Motorist Maneuver	~~PERSN ON/OFF VEH~~																
83	Non-Motorist Maneuver	PED PSH/WRK ON V	15	83	Non-Motorist Maneuver	~~PED PSH/WRK ON V~~																
83	Non-Motorist Maneuver	WORKING IN RDWAY	16	83	Non-Motorist Maneuver	~~WORKING IN RDWAY~~																
83	Non-Motorist Maneuver	PLAYING IN RDWAY	17	83	Non-Motorist Maneuver	~~PLAYING IN RDWAY~~																
83	Non-Motorist Maneuver	NOT IN ROADWAY	18	83	Non-Motorist Maneuver	~~NOT IN ROADWAY~~																
83	Non-Motorist Maneuver	BIK RIDNG W TRFC	19	83	Non-Motorist Maneuver	~~BIK RIDNG W TRFC~~																
83	Non-Motorist Maneuver	BIK RDNG AGNT TR	20	83	Non-Motorist Maneuver	~~BIK RDNG AGNT TR~~																
83	Non-Motorist Maneuver	BIK MAKNG RIT TN	22	83	Non-Motorist Maneuver	~~BIK MAKNG RIT TN~~																
83	Non-Motorist Maneuver	BIK MKNG LFT TRN	23	83	Non-Motorist Maneuver	~~BIK MKNG LFT TRN~~																
83	Non-Motorist Maneuver	BIK MAKING U TRN	24	83	Non-Motorist Maneuver	~~BIK MAKING U TRN~~																
83	Non-Motorist Maneuver	BIK RDNG ACRS RD	25	83	Non-Motorist Maneuver	~~BIK RDNG ACRS RD~~																
83	Non-Motorist Maneuver	BK SLG/STPG/STNG	26	83	Non-Motorist Maneuver	~~BK SLG/STPG/STNG~~																
83	Non-Motorist Maneuver	Not Applicable	98	83	Non-Motorist Maneuver	~~Not Applicable~~																
39	Physical Condition	Apparently Normal	5	39	Physical Condition	Apparently Normal	5															
39	Physical Condition	Physical Disability (Short or Long Term)	6	39	Physical Condition	Physical Disability (Short or Long Term)	6															
39	Physical Condition	Medical Issue (Ill, Sick or Fainted)	7	39	Physical Condition	Medical Issue (Ill, Sick or Fainted)	7															

39	Physical Condition	Emotional (Depression, Angry, etc.)	8	39	Physical Condition	Emotional (Depression, Angry, etc.)	8																
39	Physical Condition	Asleep or Fatigued	9	39	Physical Condition	Asleep or Fatigued	9																
39	Physical Condition	Has Been Drinking Alcohol	10	39	Physical Condition	Has Been Drinking Alcohol	10	1	4														
39	Physical Condition	Has Been Taking Illicit Drugs	11	39	Physical Condition	Has Been Taking Illicit Drugs	11	2															
39	Physical Condition	Has Been Taking Medications	12	39	Physical Condition	Has Been Taking Medications	12																
39	Physical Condition	Other	90	39	Physical Condition	Other	90																
39	Physical Condition	Unknown	99	39	Physical Condition	Unknown	99	98															
39	Physical Condition		0	39	Physical Condition																		
39	Physical Condition	UNDER THE INFLU	1	39	Physical Condition	~~UNDER THE INFLU~~																	
39	Physical Condition	HAD BN TKNG DRGS	2	39	Physical Condition	~~HAD BN TKNG DRGS~~																	
39	Physical Condition	CMRL DRV >.04BAC	4	39	Physical Condition	~~CMRL DRV >.04BAC~~																	
39	Physical Condition	NOT APPLICABLE	98	39	Physical Condition	~~NOT APPLICABLE~~																	
43	Roadway Design	One Way Trafficway	11	43	Roadway Design	One Way Trafficway	11	2															
43	Roadway Design	Two-Way, Not Divided	12	43	Roadway Design	Two-Way, Not Divided	12	4	7														
43	Roadway Design	Two-Way, Not Divided, Continous LTL	13	43	Roadway Design	Two-Way, Not Divided, Continous LTL	13	5	6														
43	Roadway Design	Two-Way, Divided, No Median Barrier	14	43	Roadway Design	Two-Way, Divided, No Median Barrier	14	1	3														
43	Roadway Design	Two-Way, Divided, Median Barrier	15	43	Roadway Design	Two-Way, Divided, Median Barrier	15																
43	Roadway Design	Other	90	43	Roadway Design	Other	90	8															
43	Roadway Design	Unknown	99	43	Roadway Design	Unknown	99																
43	Roadway Design		0	43	Roadway Design		0	10															
43	Roadway Design	FREEWAY-MAINLINE	1	43	Roadway Design	~~FREEWAY-MAINLINE~~																	
43	Roadway Design	FREEWAY-RAMPS	2	43	Roadway Design	~~FREEWAY-RAMPS~~																	
43	Roadway Design	OTHER DIVIDD HWY	3	43	Roadway Design	~~OTHER DIVIDD HWY~~																	
43	Roadway Design	4-6 LNS 2-3-EACH	4	43	Roadway Design	~~4-6 LNS 2-3-EACH~~																	
43	Roadway Design	3 LANES UNDIVIDD	5	43	Roadway Design	~~3 LANES UNDIVIDD~~																	
43	Roadway Design	5 LN UNDV W L TURN	6	43	Roadway Design	~~5 LN UNDV W L TURN~~																	
43	Roadway Design	2-LANES 1-ECH-WY	7	43	Roadway Design	~~2-LANES 1-ECH-WY~~																	
43	Roadway Design	ALLEY OR DRIVEWY	8	43	Roadway Design	~~ALLEY OR DRIVEWY~~																	
43	Roadway Design	PRIVATE PROPERTY	10	43	Roadway Design	~~PRIVATE PROPERTY~~																	
52	Sex	Unknown	99	52	Sex	Unknown	99																
52	Sex	Female	F	52	Sex	Female	F																
52	Sex	Male	M	52	Sex	Male	M																
52	Sex		0	52	Sex		0																
118	Speed Limit MPH		0	118	Speed Limit MPH		0																
118	Speed Limit MPH	Not Applicable	98	118	Speed Limit MPH	Not Applicable	98																
118	Speed Limit MPH	Unknown	99	118	Speed Limit MPH	Unknown	99																
55	Traffic Control Device	No Controls	9	55	Traffic Control Device	No Controls	9																
55	Traffic Control Device	RR Crossing Device (RR or LRT)	10	55	Traffic Control Device	RR Crossing Device (RR or LRT)	10	7	11	12	13	14	15										
55	Traffic Control Device	Traffic Control Signal	20	55	Traffic Control Device	Traffic Control Signal	20																
55	Traffic Control Device	Flashing Overhead Traffic Control Signal	21	55	Traffic Control Device	Flashing Overhead Traffic Control Signal	21																
55	Traffic Control Device	Yield Sign	22	55	Traffic Control Device	Yield Sign	22																
55	Traffic Control Device	Stop Sign	23	55	Traffic Control Device	Stop Sign	23	1	2														
55	Traffic Control Device	Warning Sign	24	55	Traffic Control Device	Warning Sign	24																
55	Traffic Control Device	Person (Flagger, Police, etc.)	25	55	Traffic Control Device	Person (Flagger, Police, etc.)	25																
55	Traffic Control Device	School Zone or School Bus Flashing	30	55	Traffic Control Device	School Zone or School Bus Flashing	30	3	4														
55	Traffic Control Device	Other	90	55	Traffic Control Device	Other	90	5															
55	Traffic Control Device	Not Applicable	98	55	Traffic Control Device	Not Applicable	98																
55	Traffic Control Device	Unknown	99	55	Traffic Control Device	Unknown	99																

55	Traffic Control Device		0		55	Traffic Control Device		0														
55	Traffic Control Device	STOP SIGN ALL WAY	1		55	Traffic Control Device	~~STOP SIGN ALL WAY~~															
55	Traffic Control Device	THRU/STOP	2		55	Traffic Control Device	~~THRU/STOP~~															
55	Traffic Control Device	SCHL BUS STOPARM	3		55	Traffic Control Device	~~SCHL BUS STOPARM~~															
55	Traffic Control Device	SCHOOL ZONE SIGN	4		55	Traffic Control Device	~~SCHOOL ZONE SIGN~~															
55	Traffic Control Device	NO PASSING ZONE	5		55	Traffic Control Device	~~NO PASSING ZONE~~															
55	Traffic Control Device	RR or LRT FLSHNG LT	7		55	Traffic Control Device	~~RR or LRT FLSHNG LT~~															
55	Traffic Control Device	RR or LRT CROSSING GATE	11		55	Traffic Control Device	~~RR or LRT CROSSING GATE~~															
55	Traffic Control Device	RR or LRT CROSSBUCK	12		55	Traffic Control Device	~~RR or LRT CROSSBUCK~~															
55	Traffic Control Device	RR or LRT OVRHD FLSH+GT	13		55	Traffic Control Device	~~RR or LRT OVRHD FLSH+GT~~															
55	Traffic Control Device	RR or LRT STOP SIGN	14		55	Traffic Control Device	~~RR or LRT STOP SIGN~~															
55	Traffic Control Device	RR or LRT OVRHD FLS	15		55	Traffic Control Device	~~RR or LRT OVRHD FLS~~															
72	Unit Type	Hit-And-Run Vehicle or Unknown Driver	1		72	Unit Type	Hit-And-Run Vehicle or Unknown Driver	1														
72	Unit Type	Motor Vehicle in Transport	2		72	Unit Type	Motor Vehicle in Transport	2														
72	Unit Type	Parked/Stalled Motor Vehicle	3		72	Unit Type	Parked/Stalled Motor Vehicle	3														
72	Unit Type	Working Vehicle / Equipment	4		72	Unit Type	Working Vehicle / Equipment	4														
72	Unit Type	Pedestrian	5		72	Unit Type	Pedestrian	5														
72	Unit Type	Bicycle	6		72	Unit Type	Bicycle	6														
72	Unit Type	Other Cycle (Unicycle, Tricycle, etc.)	7		72	Unit Type	Other Cycle (Unicycle, Tricycle, etc.)	7														
72	Unit Type	Other Personal Conveyance (Wheelchair, Hor	8		72	Unit Type	Other Personal Conveyance (Wheelchair, Hor	8														
72	Unit Type		0		72	Unit Type		0														
3	Vehicle Maneuver	Parked or Entering or Leaving a Parked Positio	20		3	Vehicle Maneuver	Parked, Entering or Leaving a Parked stall	20	1	2	3											
3	Vehicle Maneuver	Moving Forward	21		3	Vehicle Maneuver	Moving Forward	21	7													
3	Vehicle Maneuver	Wrong Way into Opposing Traffic	22		3	Vehicle Maneuver	Wrong Way into Opposing Traffic	22														
3	Vehicle Maneuver	Turning Right	23		3	Vehicle Maneuver	Turning Right	23	4													
3	Vehicle Maneuver	Turning Left	24		3	Vehicle Maneuver	Turning Left	24	5													
3	Vehicle Maneuver	Making a U Turn	25		3	Vehicle Maneuver	Making a U Turn	25														
3	Vehicle Maneuver	Slowing	26		3	Vehicle Maneuver	Slowing	26														
3	Vehicle Maneuver	Swerved or Attempt to Avoid Object in Roadv	27		3	Vehicle Maneuver	Swerved to Avoid Object in Roadway	27														
3	Vehicle Maneuver	Changing Lanes	28		3	Vehicle Maneuver	Changing Lanes	28	10													
3	Vehicle Maneuver	Overtaking/Passing	29		3	Vehicle Maneuver	Overtaking/Passing	29														
3	Vehicle Maneuver	Leaving Traffic Lane	30		3	Vehicle Maneuver	Leaving Traffic Lane	30														
3	Vehicle Maneuver	Entering Traffic Lane	31		3	Vehicle Maneuver	Entering Traffic Lane	31	6													
3	Vehicle Maneuver	Negotiating a Curve	32		3	Vehicle Maneuver	Negotiating a Curve	32														
3	Vehicle Maneuver	Backing	33		3	Vehicle Maneuver	Backing	33														
3	Vehicle Maneuver	Vehicle Stopped or Stalled in Roadway	34		3	Vehicle Maneuver	Vehicle Stopped or Stalled in Roadway	34	8	9												
3	Vehicle Maneuver	Other	90		3	Vehicle Maneuver	Other	90														
3	Vehicle Maneuver	Unknown	99		3	Vehicle Maneuver	Unknown	99														
3	Vehicle Maneuver		0		3	Vehicle Maneuver		0														
3	Vehicle Maneuver	VEH PRKD LEGALLY	1		3	Vehicle Maneuver	~~VEH PRKD LEGALLY~~															
3	Vehicle Maneuver	VEH PRKD ILLEGLY	2		3	Vehicle Maneuver	~~VEH PRKD ILLEGLY~~															
3	Vehicle Maneuver	VEH STPD OFF RDW	3		3	Vehicle Maneuver	~~VEH STOPPED OFF RDW~~															
3	Vehicle Maneuver	VEH RT TN ON RED	4		3	Vehicle Maneuver	~~VEH RT TN ON RED~~															
3	Vehicle Maneuver	VEH LFT TN ON RD	5		3	Vehicle Maneuver	~~VEH LFT TN ON RD~~															
3	Vehicle Maneuver	VEH STRG FR PRKD	6		3	Vehicle Maneuver	~~VEH STARTING FROM PARKED~~															
3	Vehicle Maneuver	VEH STRTNG N TRC	7		3	Vehicle Maneuver	~~VEH STARTNG IN TRAFFIC~~															
3	Vehicle Maneuver	VEH STOPD IN TRF	8		3	Vehicle Maneuver	~~VEH STOPPED IN TRAFFIC~~															
3	Vehicle Maneuver	VEH ENTG PRK PTN	9		3	Vehicle Maneuver	~~VEH ENTERING PARKED POSITION~~															
3	Vehicle Maneuver	VEHICLE MERGING	10		3	Vehicle Maneuver	~~VEHICLE MERGING~~															
3	Vehicle Maneuver	Not Applicable	98		3	Vehicle Maneuver	Not Applicable	98														

59	Vehicle Type	Passenger Car	2	59	Vehicle Type	Passenger Car	2															
59	Vehicle Type	Pickup	3	59	Vehicle Type	Pickup	3															
59	Vehicle Type	Sport Utility Vehicle	4	59	Vehicle Type	Sport Utility Vehicle	4															
59	Vehicle Type	Passenger Van (Seats Installed Behind Driver)	5	59	Vehicle Type	Passenger Van (Seats Behind Driver)	5	1														
59	Vehicle Type	Cargo Van 10,000lbs or Less (No Seats Installe	6	59	Vehicle Type	Cargo Van 10k lbs or Less (No Seats)	6															
59	Vehicle Type	Limousine	10	59	Vehicle Type	Limousine	10															
59	Vehicle Type	School Bus	13	59	Vehicle Type	School Bus	13															
59	Vehicle Type	Transit Bus	14	59	Vehicle Type	Transit Bus	14															
59	Vehicle Type	Motorcoach	15	59	Vehicle Type	Motorcoach	15															
59	Vehicle Type	Motor Home/Camper/RV	20	59	Vehicle Type	Motor Home/Camper/RV	20															
59	Vehicle Type	Snowmobile	21	59	Vehicle Type	Snowmobile	21															
59	Vehicle Type	ATV	22	59	Vehicle Type	ATV	22															
59	Vehicle Type	Motorcycle	31	59	Vehicle Type	Motorcycle	31															
59	Vehicle Type	Moped or Motor Scooter	32	59	Vehicle Type	Moped or Motor Scooter	32	30														
59	Vehicle Type	Low Speed Vehicle (LSV)	33	59	Vehicle Type	Low Speed Vehicle (LSV)	33															
59	Vehicle Type	Golf Cart	34	59	Vehicle Type	Golf Cart	34															
59	Vehicle Type	Other Light Trucks (10,000lbs or Less)	48	59	Vehicle Type	Other Light Trucks (10,000lbs or Less)	48															
59	Vehicle Type	Medium / Heavy Trucks (More than 10,000lbs	49	59	Vehicle Type	Medium/Heavy Trucks (More than 10k lbs)	49	40	41	42	43	44	45	46	47			
59	Vehicle Type	Farm Vehicle (Tractor, Combine, etc.)	50	59	Vehicle Type	Farm Vehicle (Tractor, Combine, etc.)	50															
59	Vehicle Type	Other Bus	51	59	Vehicle Type	Other Bus	51	11	12													
59	Vehicle Type	Other	90	59	Vehicle Type	Other	90	60	61	62	63	99						
59	Vehicle Type		0	59	Vehicle Type		0	98														
59	Vehicle Type	VAN OR MINIVAN	1	59	Vehicle Type	~~VAN OR MINIVAN~~																
59	Vehicle Type	BUS(7-15 INC DRV)	11	59	Vehicle Type	~~BUS(7-15 INC DRV)~~																
59	Vehicle Type	BUS(8+ INCL DRV)	12	59	Vehicle Type	~~BUS(8+ INCL DRV)~~																
59	Vehicle Type	MOPED/MOTORZ BIKE	30	59	Vehicle Type	~~MOPED/MOTORZ BIKE~~																
59	Vehicle Type	2-AX 6-T SG TR/S	40	59	Vehicle Type	~~2-AX 6-T SG TR/S~~																
59	Vehicle Type	3+AXL SGL UNT TR	41	59	Vehicle Type	~~3+AXL SGL UNT TR~~																
59	Vehicle Type	SG UNT TR W TRLR	42	59	Vehicle Type	~~SG UNT TR W TRLR~~																
59	Vehicle Type	TRK TRC W NO TRL	43	59	Vehicle Type	~~TRK TRC W NO TRL~~																
59	Vehicle Type	TRK TRAC W SEMI	44	59	Vehicle Type	~~TRK TRAC W SEMI~~																
59	Vehicle Type	TRK TRC W TWN TR	45	59	Vehicle Type	~~TRK TRC W TWN TR~~																
59	Vehicle Type	TRK TRAC W TRIPL	46	59	Vehicle Type	~~TRK TRAC W TRIPL~~																
59	Vehicle Type	HEAV TRK-TYP UNK	47	59	Vehicle Type	~~HEAV TRK-TYP UNK~~																
59	Vehicle Type	PEDESTRIAN	60	59	Vehicle Type	~~PEDESTRIAN~~																
59	Vehicle Type	SKATER	61	59	Vehicle Type	~~SKATER~~																
59	Vehicle Type	BICYCLIST	62	59	Vehicle Type	~~BICYCLIST~~																
59	Vehicle Type	OTHER NONMOTORST	63	59	Vehicle Type	~~OTHER NONMOTORST~~																
59	Vehicle Type	Not Applicable	98	59	Vehicle Type	~~Not Applicable~~																
59	Vehicle Type	Unknown	99	59	Vehicle Type	~~Unknown~~																

Please see the "Introduction" tab for more information on this tab

	Actual Attributes>>		
APPCODEID	**APPCODENAME**	**NAME**	**VALUE**
10	Contributing Factor/Action Time of Crash	No Clear Contributing Action	1
10	Contributing Factor/Action Time of Crash	Failure to Yield Right-of-Way	2
10	Contributing Factor/Action Time of Crash	Following Too Closely	4
10	Contributing Factor/Action Time of Crash	Failure to Obey Traffic Signs, Signals, or Officer	5
10	Contributing Factor/Action Time of Crash	Improper Passing	7
10	Contributing Factor/Action Time of Crash	Improper Turn/Merge	10
10	Contributing Factor/Action Time of Crash	Improper Backing	11
10	Contributing Factor/Action Time of Crash	Inattentive/Distraction (Talking, Eating, etc.)	15
10	Contributing Factor/Action Time of Crash	No Improper Action	22
10	Contributing Factor/Action Time of Crash	Dart/Dash	23
10	Contributing Factor/Action Time of Crash	In Roadway Improperly (Standing, Lying, Working, Playing)	24
10	Contributing Factor/Action Time of Crash	Disabled Vehicle Related (Working on, Pushing, Leaving/Approaching	25
10	Contributing Factor/Action Time of Crash	Not Visible (Dark Clothing, No Lighting, etc.)	26
10	Contributing Factor/Action Time of Crash	Wrong Way Riding or Walking	27
10	Contributing Factor/Action Time of Crash	Entering/Exiting Parked/Standing Vehicle	29
10	Contributing Factor/Action Time of Crash	Ran Off Road	62
10	Contributing Factor/Action Time of Crash	Ran Red Light	63
10	Contributing Factor/Action Time of Crash	Ran Stop Sign	64
10	Contributing Factor/Action Time of Crash	Disregard Other Traffic Signs	65
10	Contributing Factor/Action Time of Crash	Disregard Other Road Markings	66
10	Contributing Factor/Action Time of Crash	Wrong Side or Wrong Way	67
10	Contributing Factor/Action Time of Crash	Failed to Keep in Proper Lane	68
10	Contributing Factor/Action Time of Crash	Operated Motor Vehicle in Reckless or Aggressive Manner	69
10	Contributing Factor/Action Time of Crash	Operated Motor Vehicle in Careless, Negligent, or Erratic Manner	70
10	Contributing Factor/Action Time of Crash	Swerved or Avoided Due to Wind, Slippery Surface, Motor Vehicle, Object, Non-Motorist in Roadway, etc.	71
10	Contributing Factor/Action Time of Crash	Over-correcting / Over Steering	72
10	Contributing Factor/Action Time of Crash	Passing on Shoulder	73
10	Contributing Factor/Action Time of Crash	Driver Distracted	74
10	Contributing Factor/Action Time of Crash	Driver Speeding	75
10	Contributing Factor/Action Time of Crash	Other Contributing Action	90
10	Contributing Factor/Action Time of Crash	Unknown	99
10	Contributing Factor/Action Time of Crash	ILLEGAL/UNSAF SP	3
10	Contributing Factor/Action Time of Crash	DRVNG LFT OF CTR	6
10	Contributing Factor/Action Time of Crash	IMPRP/UNSF LN US	8
10	Contributing Factor/Action Time of Crash	IMP PKG/STR/STPG	9
10	Contributing Factor/Action Time of Crash	IMPRP/NO SIGNAL	12
10	Contributing Factor/Action Time of Crash	IMPEDING TRAFFIC	14
10	Contributing Factor/Action Time of Crash	DRIVR INXPERENCE	16
10	Contributing Factor/Action Time of Crash	NON-MOTRST ERROR	17
10	Contributing Factor/Action Time of Crash	CHEMICAL IMPRMNT	18
10	Contributing Factor/Action Time of Crash	FAIL TO USE LITS	19
10	Contributing Factor/Action Time of Crash	DRVR ON PH/CB/RA	20
10	Contributing Factor/Action Time of Crash	OTH HMN CNTR FCT	21
10	Contributing Factor/Action Time of Crash	Not Applicable	98

FILTER AND CHART DISPLAYS>>>										
Contributing Factor/Action Time of Crash	**Attributes**									
Driver and Non-motorist		**Values>>>>>>**								
	Failure to Yield Right-of-Way	2								
	Improper Passing	7								
	Improper Turn/Merge	10								
	Other Contributing Action	90	14	16	17	18	19	20	21	
	Not Applicable	98								
	Unknown	99								
Driver Only										
	Disregard Other Road Markings	66								
	Disregard Other Traffic Signs	65								
	Driver Distracted	74								
	Driver Speeding	75	3							
	Failed to Keep in Proper Lane	68	6	8	9					
	Following Too Closely	4								
	Improper Backing	11								
	No Clear Contributing Action	1								
	Operated Motor Vehicle in Careless, Negligent, or Erratic Manner	70	12							
	Operated Motor Vehicle in Reckless or Aggressive Manner	69								
	Over-correcting / Over Steering	72								
	Passing on Shoulder	73								
	Ran Off Road	62								
	Ran Red Light	63								
	Ran Stop Sign	64								
	Swerved or Avoided Due to Wind, etc.	71								
	Wrong Side or Wrong Way	67								
Non Motorist Only										
	Dart/Dash	23								
	Disabled Vehicle Related (Working on, Pushing,etc.)	25								
	Entering/Exiting Parked/Standing Vehicle	29								
	Failure to Obey Traffic Signs, Signals, or Officer	5								
	In Roadway Improperly (Standing, Lying, Working, Playing)	24								
	Inattentive/Distraction (Talking, Eating, etc.)	15								
	No Improper Action	22								
	Not Visible (Dark Clothing, No Lighting, etc.)	26								
	Wrong Way Riding or Walking	27								

Please see the "Introduction" tab for more information on this tab

Actual Attributes>>

APPCODEID	APPCODENAME	NAME	VALUE
21	Harmful Event	Pedestrian	8
21	Harmful Event	Pedalcyclist (Bicyclist)	9
21	Harmful Event	Motor Vehicle In Transport	10
21	Harmful Event	Parked Motor Vehicle	11
21	Harmful Event	Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	12
21	Harmful Event	Train - LRT	13
21	Harmful Event	Train - Passenger	14
21	Harmful Event	Train - Cargo	15
21	Harmful Event	Deer	16
21	Harmful Event	Other Animal - Alive at Time of Crash	17
21	Harmful Event	Other Animal - Dead Before Crash	18
21	Harmful Event	Separation of Units	20
21	Harmful Event	Ran Off Roadway Right	21
21	Harmful Event	Ran Off Roadway Left	22
21	Harmful Event	Cross Median	23
21	Harmful Event	Cross Centerline	24
21	Harmful Event	Other - Non Fixed Object	25
21	Harmful Event	Utility Pole/Light Support	28
21	Harmful Event	Traffic Signal or Signal Structure	30
21	Harmful Event	RR / LRT Crossing Device	31
21	Harmful Event	Roadway Sign or Sign Structure	32
21	Harmful Event	Downhill Runaway	33
21	Harmful Event	Fell/Jumped From Motor Vehicle	34
21	Harmful Event	Other Post, Pole or Support	35
21	Harmful Event	Construction or Maintenance Equipment	36
21	Harmful Event	Reentering Roadway	37
21	Harmful Event	Thrown or Falling Object	38
21	Harmful Event	Cargo/Equipment Loss or Shift	39
21	Harmful Event	Bridge Pier or Support	41
21	Harmful Event	Bridge Overhead Structure	42
21	Harmful Event	Bridge Rail	43
21	Harmful Event	Culvert	46
21	Harmful Event	Curb	47
21	Harmful Event	Ditch	48
21	Harmful Event	Embankment	49
21	Harmful Event	Snowbank	50
21	Harmful Event	Other - Non-Motorist	51
21	Harmful Event	Cable Median Barrier	55
21	Harmful Event	Concrete Traffic Barrier	56
21	Harmful Event	Other Traffic Barrier	57
21	Harmful Event	Impact attenuator/ Crash Cushion	60
21	Harmful Event	Guardrail (Face)	61
21	Harmful Event	Guardrail (End)	62
21	Harmful Event	Mailboxes/Posts	67
21	Harmful Event	Hydrant	68
21	Harmful Event	Standing Tree/Shrubbery	69
21	Harmful Event	Fence (Non-Median Barrier)	70
21	Harmful Event	Parking Meter	71
21	Harmful Event	Other - Fixed Object	75
21	Harmful Event	Overturn/Rollover	83

FILTER AND CHART DISPLAYS>>>

APPCODEID	Attributes	Values>>>>>>				
Collision Person, MV, or Non-fixed	Pedestrian	8				
Collision Person, MV, or Non-fixed	Pedalcyclist (Bicyclist)	9				
Collision Person, MV, or Non-fixed	Motor Vehicle In Transport	10	6	7		
Collision Person, MV, or Non-fixed	Parked Motor Vehicle	11	81	82		
Collision Person, MV, or Non-fixed	Struck by Falling, Shifting Cargo or Anything Set in Motion by Motor Vehicle	12				
Collision Person, MV, or Non-fixed	Train	13	14	15	3	
Collision Person, MV, or Non-fixed	~~Train - Passenger~~					
Collision Person, MV, or Non-fixed	~~Train - Cargo~~					
Collision Person, MV, or Non-fixed	Deer/Animal	16	17	18	4	
Collision Person, MV, or Non-fixed	~~Other Animal - Alive at Time of Crash~~					
Collision Person, MV, or Non-fixed	~~Other Animal - Dead Before Crash~~					
Collision Person, MV, or Non-fixed	Other - Non Fixed Object	25	51	5	1	2
Collision Person, MV, or Non-fixed	~~Other - Non-Motorist~~					
Collision Fixed Object	Utility Pole/Light Support	28	26	27		
Collision Fixed Object	Traffic Signal or Signal Structure	30				
Collision Fixed Object	RR / LRT Crossing Device	31				
Collision Fixed Object	Roadway Sign or Sign Structure	32				
Collision Fixed Object	Other Post, Pole or Support	35				
Collision Fixed Object	Construction or Maintenance Equipment	36				
Collision Fixed Object	Bridge Pier or Support	41				
Collision Fixed Object	Bridge Overhead Structure	42				
Collision Fixed Object	Bridge Rail	43				
Collision Fixed Object	Culvert	46	40			
Collision Fixed Object	Curb	47				
Collision Fixed Object	Ditch	48				
Collision Fixed Object	Embankment	49	45			
Collision Fixed Object	Snowbank	50				
Collision Fixed Object	Cable Median Barrier	55	53			
Collision Fixed Object	Concrete Traffic Barrier	56				
Collision Fixed Object	Other Traffic Barrier	57				
Collision Fixed Object	Impact attenuator/ Crash Cushion	60				
Collision Fixed Object	Guardrail (Face)	61	54			
Collision Fixed Object	Guardrail (End)	62				
Collision Fixed Object	Mailboxes/Posts	67				
Collision Fixed Object	Hydrant	68				
Collision Fixed Object	Standing Tree/Shrubbery	69				
Collision Fixed Object	Fence (Non-Median Barrier)	70				
Collision Fixed Object	Parking Meter	71				
Collision Fixed Object	Other - Fixed Object	75	65	66	76	
Non-collision Harmful Events	Fell/Jumped From Motor Vehicle	34				
Non-collision Harmful Events	Thrown or Falling Object	38				
Non-collision Harmful Events	Cargo/Equipment Loss or Shift	39				
Non-collision Harmful Events	Overturn/Rollover	83				
Non-collision Harmful Events	Immersion (Full or Partial)	84				
Non-collision Harmful Events	Fire/Explosion	85				
Non-collision Harmful Events	Jackknife	86				
Non-collision Harmful Events	Other Non-Collision	89	80			
Non-Harmful Events	Equipment Failure (blown tire, brake failure, etc.)	19				
Non-Harmful Events	Separation of Units	20				
Non-Harmful Events	Ran Off Roadway Right	21				

21	Harmful Event	Immersion (Full or Partial)	84
21	Harmful Event	Fire/Explosion	85
21	Harmful Event	Jackknife	86
21	Harmful Event	Other Non-Collision	89
21	Harmful Event	Unknown	99
21	Harmful Event		0
21	Harmful Event	COL-RDEQP-SNOWP	1
21	Harmful Event	COL-RDEQP-OTHER	2
21	Harmful Event	COL WITH TRAIN	3
21	Harmful Event	COL ANML NOT DER	4
21	Harmful Event	RUNAWAY VEHICLE	5
21	Harmful Event	COL UNDRIDE-REAR	6
21	Harmful Event	COL UNDRIDE-SIDE	7
21	Harmful Event	LIGHT POLE	26
21	Harmful Event	UTILITY POLE	27
21	Harmful Event	CULVERT/HEADWALL	40
21	Harmful Event	EMBANKMT/DTCH/CB	45
21	Harmful Event	MEDIAN SAFTY BAR	53
21	Harmful Event	GUARDRAIL	54
21	Harmful Event	BUILDING/WALL	65
21	Harmful Event	ROCK OUTCROPS	66
21	Harmful Event	UNKNOWN TYPE FIXED OBJECT	76
21	Harmful Event	UNKN TYP NONCOLL	80
21	Harmful Event	LOSS/SPIL-NONHAZ	81
21	Harmful Event	LOSS/SPIL-HAZMAT	82
21	Harmful Event	UNKNOWN COLLISION TYPE	91
21	Harmful Event	OTHER CRASH TYPE	92
21	Harmful Event	OTHER COLISN TYP	93

Non-Harmful Events	Ran Off Roadway Left	22					
Non-Harmful Events	Cross Median	23					
Non-Harmful Events	Cross Centerline	24					
Non-Harmful Events	Downhill Runaway	33					
Non-Harmful Events	Reentering Roadway	37					
	Unknown	99	91	92	93	0	
		~~0~~					
	~~COL-RDEQP-SNOWP~~						
	~~COL-RDEQP-OTHER~~						
	~~COL WITH TRAIN~~						
	~~COL ANML NOT DER~~						
	~~RUNAWAY VEHICLE~~						
	~~COL UNDRIDE-REAR~~						
	~~COL UNDRIDE-SIDE~~						
	~~LIGHT POLE~~						
	~~UTILITY POLE~~						
	~~CULVERT/HEADWALL~~						
	~~EMBANKMT/DTCH/CB~~						
	~~MEDIAN SAFTY BAR~~						
	~~GUARDRAIL~~						
	~~BUILDING/WALL~~						
	~~ROCK OUTCROPS~~						
	~~UNKNOWN TYPE FIXED OBJECT~~						
	~~UNKN TYP NONCOLL~~						
	~~LOSS/SPIL-NONHAZ~~						
	~~LOSS/SPIL-HAZMAT~~						
	~~UNKNOWN COLLISION TYPE~~						
	~~OTHER CRASH TYPE~~						
	~~OTHER COLISN TYP~~						

APPENDIX F

Enclave – Maplewood Project Information

Enclave - Maplewood

County Road D & Southlawn Drive, Maplewood, MN 55109
06/01/22

GROSS AREA - TOTAL

Level	*Area*
Level 4	68,735 ft²
Level 3	69,281 ft²
Level 2	69,281 ft²
Level 1	69,606 ft²
Level -1	70,411 ft²
Grand total	347,314 ft²

PARKING

Level	*Type*	*Count*
Level 1	Level 1 Garage	56
Level 1	Surface Parking	94
Level -1	Underground Parking	204
		354

UNIT MIX - GROSS AREA

Name	*Count*	*Unit Gross Area Main Floor*	Total Area	%
0 BR (Studio)				
Unit 0-0	22	581 ft²	12,783 ft²	9%
	22		12,783 ft²	9%
1BR				
Unit 1-0	52	718 ft²	37,334 ft²	22%
Unit 1-4	69	728 ft²	50,221 ft²	29%
	121		87,555 ft²	50%
2BR				
Unit 2-0	64	1,068 ft²	68,336 ft²	27%
Unit 2-1	13	1,149 ft²	14,937 ft²	5%
Unit 2-2	3	1,130 ft²	3,390 ft²	1%
Unit 2-3	3	1,265 ft²	3,794 ft²	1%
Unit 2-4	4	1,139 ft²	4,557 ft²	2%
	87		95,014 ft²	36%
3BR				
Unit 3-0	11	1,339 ft²	14,729 ft²	5%
	11		14,729 ft²	5%
Grand total	241		210,081 ft²	100%

Level 1

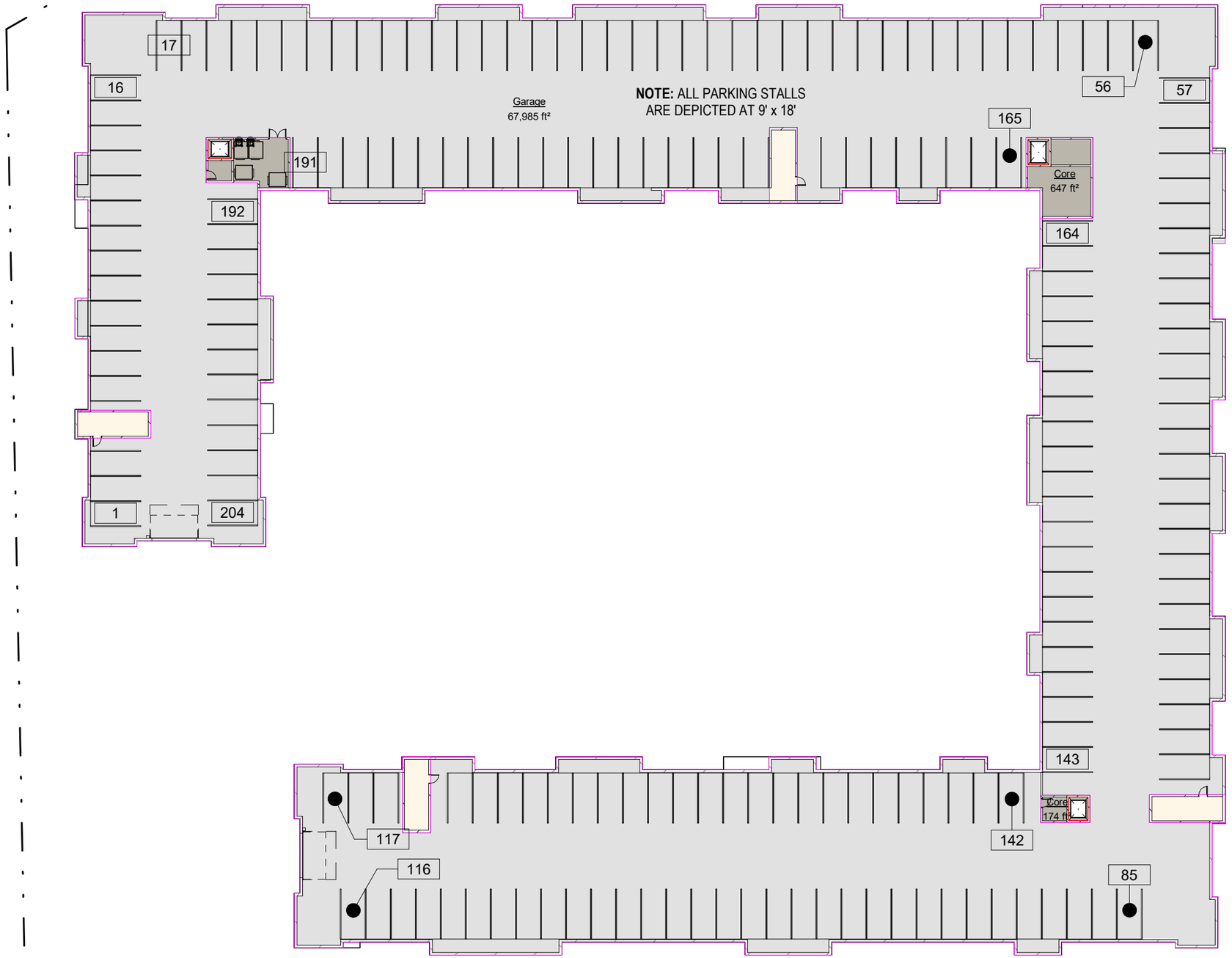
Enclave - Maplewood

kaas wilson architects

County Road D & Southlawn Drive, Maplewood, MN 55109 06/01/22


Unit 2-2
1,130 ft²
Unit 1-4
728 ft²
Unit 0-0
581 ft²
Unit 1-0
718 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 0-0
581 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 2-0
1,068 ft²
Unit 1-0
718 ft²
Unit 1-0
718 ft²
Unit 1-4
728 ft²
Unit 2-4
1,139 ft²
Unit 2-0
1,068 ft²
Core
839 ft²
Unit 1-0
718 ft²
Unit 0-0
581 ft²
Unit 2-0
1,068 ft²
Unit 1-0
718 ft²
Unit 1-4
728 ft²
Unit 2-0
1,068 ft²
Unit 0-0
581 ft²
Unit 2-0
1,068 ft²
Unit 3-0
1,339 ft²
Core
839 ft²
Unit 2-0
1,068 ft²
Unit 1-0
718 ft²
Unit 1-0
718 ft²
Unit 3-0
1,339 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 0-0
581 ft²
Unit 1-0
718 ft²
Unit 2-0
1,068 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 2-1
1,149 ft²
Unit 2-1
1,149 ft²
Unit 1-4
728 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 2-0
1,068 ft²
Unit 1-0
718 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 1-0
718 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 1-0
718 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 1-4
728 ft²
Unit 1-0
718 ft²
Unit 2-0
1,067 ft²
Core
729 ft²
Unit 2-1
1,149 ft²
Unit 2-1
1,149 ft²
Unit 1-4
728 ft²
Unit 0-0
581 ft²
Unit 3-0
1,339 ft²
Unit 1-0
718 ft²
Unit 1-4
728 ft²
Unit 2-0
1,068 ft²
Unit 1-0
718 ft²
Unit 2-0
1,068 ft²
Unit 1-0
718 ft²
Unit 2-3
1,265 ft²


Sky Deck
744 ft²
Sky Lounge
731 ft²
Unit 0-0
581 ft²
Unit 1-0
718 ft²
Unit 2-0
1,068 ft²
Unit 1-4
728 ft²
Unit 2-4
1,139 ft²
Unit 3-0
1,339 ft²
Core
839 ft²
Unit 2-1
1,149 ft²
Core
729 ft²
Unit 2-3
1,265 ft²


17
16
Garage
67,985 ft²
NOTE: ALL PARKING STALLS
ARE DEPICTED AT 9' x 18'
56
57
165
191
Core
647 ft²
192
164
1
204
143
Core
174 ft²
117
142
116
85