Environment | Planning | Development Solutions, Inc.

Date:	January 4, 2022
Prepared by:	Hashem Basrawi, Abby Pal
To:	City of Perris
Site:	NEC Ramona Expressway & Brennan Avenue
Subject:	DRP22-00021: Vehicle Miles Traveled (VMT) & Trip Generation Screening Analysis and Focused Traffic Analysis

Introduction

This technical memorandum evaluates the need to prepare a Level of Service (LOS) or Vehicle Miles Traveled (VMT) analysis for the proposed 99,990 SF industrial warehouse building located at the north-east corner of Ramona Expressway & Brennan Avenue in the City of Perris. Additionally, a Focused Traffic Analysis (FTA) was conducted to evaluate LOS at intersections in the immediate vicinity of the project which provide access to the project site. Access to the project site will be provided via one passenger car driveway on Brennan Avenue North and one truck driveway on Ramona Expressway. An emergency vehicle access driveway will be provided on Brennan Avenue North. The project proposes signalizing the intersection of Brennan Avenue South and Ramona Expressway to allow project truck traffic access from Brennan Avenue South. Project truck traffic will be restricted to only northbound and southbound through movements. The FTA is included in this technical memorandum. The existing site is currently vacant. The project site plan is shown in Figure 1.

Project Trip Generation

The project trip generation was prepared using land use code 150 (Warehousing) trip rates that were obtained from the Institute of Transportation Engineers, Trip Generation,11th Edition, 2021. Per the City of Perris, a Traffic Impact Analysis (TIA) is required for projects that will generate 500 or more daily trips and/or 50 or more peak hour trips. Passenger Car Equivalent (PCE) factors were added to project truck trips to account for the larger size, slower starting times, and reduced maneuverability of trucks.

As shown in Table 1, the project would generate a total of 171 daily trips, 17 AM peak hour trips and 19 PM peak hour trips. With the application of PCE factors, the project would generate 263 daily trips, 22 AM peak hour trips and 24 PM peak hour trips. As per the City's threshold of 50 or more peak hour trips, the project would screen, and a preparation of an LOS TIA would not be required.

VMT Screening Analysis

Senate Bill (SB) 743 was signed by Governor Brown in 2013 and required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to LOS for evaluating Transportation impacts. SB743 specified that the new criteria should promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks and a diversity of land uses. The bill also specified that delay-based level of service could no longer be considered an indicator of a significant impact on the environment. In response, Section 15064.3 was added to the CEQA Guidelines beginning January 1, 2019. Section 15064.3 - Determining the Significance of Transportation Impacts states that Vehicle Miles Traveled (VMT) is the most appropriate measure of transportation impacts and provides lead agencies with the discretion to choose the most appropriate methodology and thresholds for evaluating VMT. Section 15064.3(c) states that the provisions of the section shall apply statewide beginning on July 1, 2020.

City of Perris Transportation Impact Analysis Guidelines for CEQA include VMT analysis methodology, impact thresholds, and screening thresholds to determine if projects would require a vehicle miles traveled (VMT) analysis. The City's TIA Guidelines provide criteria for projects that would be considered to have a less-than significant impact on VMT and therefore could be screened from further VMT analysis. If a project meets one of the following criteria, then the VMT impact of the project is considered less-than significant and no further analysis of VMT would be required:

Screening Criteria

1. Project is 100% affordable housing.
2. Project is within one half mile of qualifying transit.
3. Project is a local serving land use.
4. Project is in a low VMT area.
5. Project generates less than 500 net daily trips.

The applicability of each Screening Criteria to the proposed project is discussed below.

Screening Criteria 1 – Project is 100% affordable housing: According to the City's guidelines, if a project consists of 100% affordable housing, then the presumption can be made that it will have a less than significant impact on VMT. Moreover, sources provided by the Office of Planning and Research (OPR) state that affordable housing projects typically generate lower VMT than market-rate housing and a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less than significant impact on VMT. Since this project is not considered a 100% affordable housing project, Screening Criteria 1 doesn't apply.

Screening Criteria 2 – Project is within one half mile of qualifying transit: The City's guidelines refer to CEQA Guideline Section 15064.3, subdivision (b)(1), which states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within one half mile of an existing major transit stop or an existing stop along a high quality transit corridor will have a less than significant impact on VMT. This project is not located within half a mile of the existing RTA Route 19 bus stop. Additionally, since this is an industrial warehouse project, Screening Criteria 2 doesn't apply.

Screening Criteria 3 – Project is a local serving land use: According to the City's guidelines, local serving land uses provide more opportunities for residents and employees to shop, dine and obtain services closer to home and work. Local serving uses can also include community resources that may otherwise be located outside of the city or local area. The project is not considered a local serving land use per the description in the City's guidelines, therefore Screening Criteria 3 doesn't apply.

Screening Criteria 4 – Project is in a low VMT area: According to the City's guidelines, projects that are located in areas with low VMT, and that incorporate similar features (i.e., land use type, access to the circulation network, etc.), will tend to exhibit similarly low VMT. If a project is located in a Traffic Analysis Zone (TAZ) with VMT per capita or VMT per employee that is less than or equal to the Citywide average, then the project is considered to be located in a low VMT area and can be presumed to have a less than significant impact on VMT. Western Riverside Council of Governments (WRCOG) web-based VMT screening tool has been to utilized to determine if the project is not required to prepare a VMT analysis. The results of the WRCOG VMT screening tool for the project concluded that the project is not located in a low VMT area and therefore does not screen out of further VMT analysis based on this criteria. Figure 2 shows the screening criteria utilized as well as the results of the screening analysis.

Screening Criteria 5 – Project generates less than 500 net daily trips: According to the City's guidelines, development projects that generate less than 500 daily vehicle trips are considered to have a less than significant VMT impact. To determine if the project's trip generation would exceed the 500 daily vehicle trips screening threshold, the passenger vehicle trip generation was utilized.

This project would generate a total of 171 daily trips, 17 AM peak hour trips and 19 PM peak hour trips. Furthermore, according to this screening criteria, a conclusion can be made that this project would screen from the requirement of a VMT analysis. No VMT analysis would be required since the number of daily vehicle trips (171) is fewer than 500 daily trips. Table 1 shows the proposed project trip generation.

Figure 1: Project Site Plan

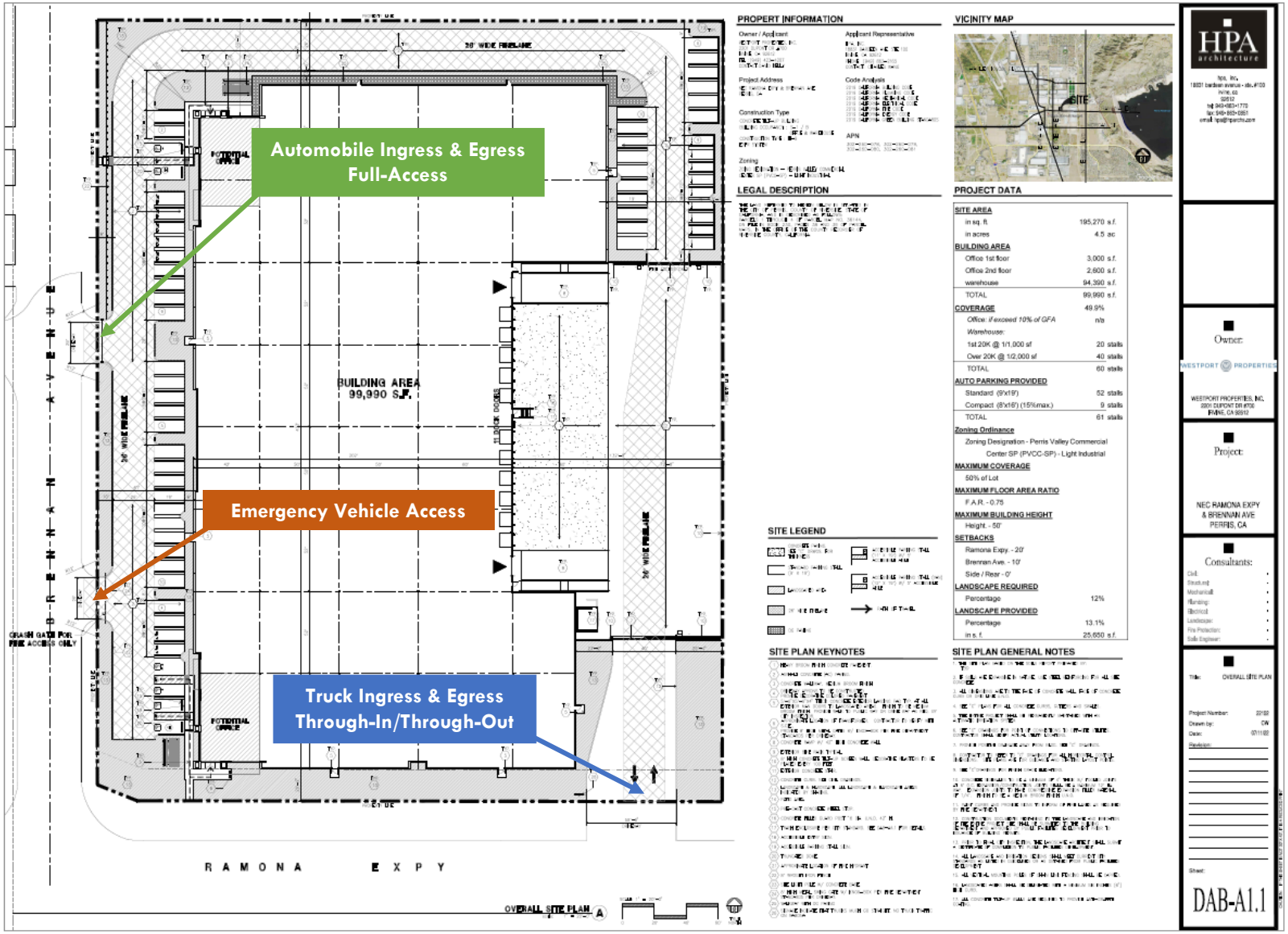
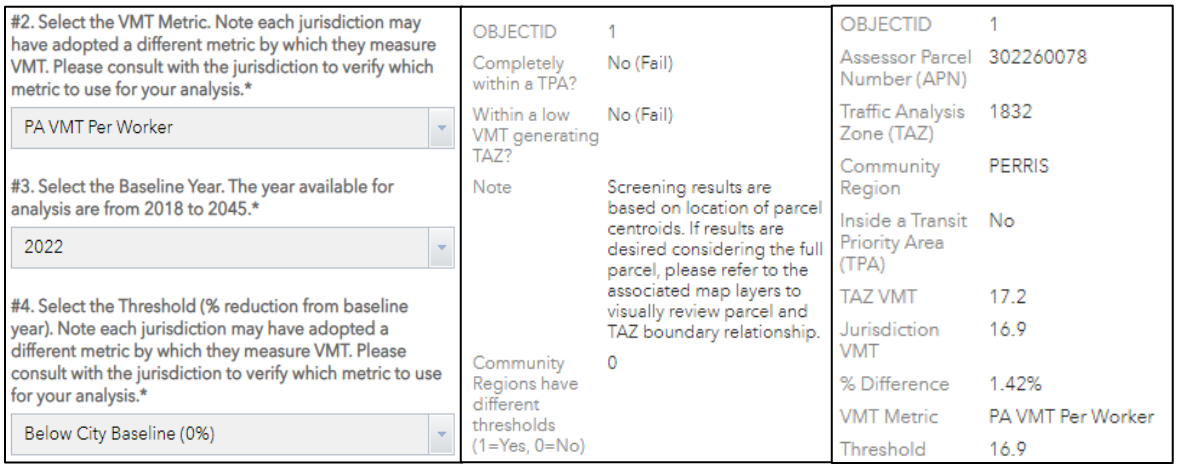


Figure 2: WRCOG VMT Screening Tool Inputs and Results



#2. Select the VMT Metric. Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*

PA VMT Per Worker

#3. Select the Baseline Year. The year available for analysis are from 2018 to 2045.*

2022

#4. Select the Threshold (% reduction from baseline year). Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*

Below City Baseline (0%)

OBJECTID	1
Completely within a TPA?	No (Fail)
Within a low VMT generating TAZ?	No (Fail)
Note	Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
Community Regions have different thresholds (1=Yes, 0=No)	0

OBJECTID	1
Assessor Parcel Number (APN)	302260078
Traffic Analysis Zone (TAZ)	1832
Community Region	PERRIS
Inside a Transit Priority Area (TPA)	No
TAZ VMT	17.2
Jurisdiction VMT	16.9
% Difference	1.42%
VMT Metric	PA VMT Per Worker
Threshold	16.9

Focused Traffic Analysis

A Focused Traffic Analysis has been prepared as part of this technical memorandum which includes the following study intersections and analysis scenarios.

Study Intersections:

1. Ramona Expressway/Brenna Avenue South – Project Driveway
2. Ramona Expressway/Brenna Avenue North

The location of the project site and study area intersections are shown in Figure 3. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing Conditions
- Existing Plus Project Conditions

The analysis methodology and significance criteria utilized in this technical memorandum are provided in *Attachment A* for reference.

Figure 3: Project Site and Study Area Intersections

Existing Conditions Intersection Operations

The existing Levels of Service at the study area intersections were determined using the Highway Capacity Manual (HCM), 7th Edition methodology, described in *Attachment A*. Turning Movement Count for the study intersections were collected during AM and PM peak hours on November 10, 2022 and are provided in *Attachment B*. Existing AM and PM peak hour traffic volumes at the study area intersections are provided in *Attachment C (Figures A-1 and A-2)*. Table 2 shows the existing AM and PM peak hour levels of service at study intersections using the HCM methodology. All LOS calculations are provided in *Attachment D*. As shown in Table 2, both intersections would operate at a satisfactory LOS during the AM and PM peak hour.

Table 2. Existing AM and PM Peak Hour Level of Service

Intersection	Traffic Control	AM Peak		PM Peak	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]
1. Ramona Expressway/Brennan Ave South – Project Driveway	TWSC	15.2	C	18.6	C
2. Ramona Expressway/Brennan Ave North	TWSC	19.9	C	17.1	C

=Unsatisfactory Level of Service

TWSC = Two-Way Stop Control

[1] Delay in Seconds

[2] Level of Service

Project Trip Generation and Trip Distribution

As aforementioned, the project trip generation was prepared using land use code 150 (Warehousing) trip rates that were obtained from the Institute of Transportation Engineers, Trip Generation,11th Edition, 2021. Per the City of Perris, a TIA analysis is required for projects that will generate 500 or more daily trips and/or 50 or more peak hour trips. Passenger Car Equivalent (PCE) factors were added to project truck trips to account for the larger size, slower starting times, and reduced maneuverability of trucks.

As shown in Table 1, the project would generate a total of 171 daily trips, 17 AM peak hour trips and 19 PM peak hour trips. With the application of PCE factors, the project would generate 263 daily trips, 22 AM peak hour trips and 24 PM peak hour trips. Project trips were distributed throughout the study area based on logical travel paths and patterns. The project truck and automobile trip distributions are shown in Figures 3 and 4. The project AM and PM trip assignments are provided in *Attachment C (Figures A-5 and A-6)*.

Table 1: Project Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Trip Rates									
Warehousing Vehicles[1]		TSF	1.71	0.13	0.04	0.17	0.05	0.13	0.18
Project Trip Generation									
Warehouse	99.990	TSF	171	13	4	17	5	13	18
ITE Vehicle Mix[2]									
Passenger (64.9% Daily, 88.2% AM, 83.3% PM)			111	12	3	15	4	11	15
Truck (35.1% Daily, 11.8% AM, 16.7% PM)			60	2	0	2	1	3	4
			171	14	3	17	5	14	19
Truck Vehicle Mix[3]		***Percent***[3]							
2-Axle truck		16.70%	10	0	0	0	0	0	0
3-Axle truck		20.70%	12	1	0	1	0	1	1
4+-Axle Trucks		62.50%	38	1	0	1	1	2	3
		100%	60	2	0	2	1	3	4
PCE Trip Generation[4]		***PCE Factor***[4]							
Passenger Vehicles		1.0	111	12	3	15	4	11	15
2-Axle truck		1.5	15	0	0	0	0	0	0
3-Axle truck		2.0	25	2	0	2	0	1	1
4+-Axle Trucks		3.0	113	4	1	5	2	6	8
			263	18	4	22	6	18	24

TSF = Thousand Square Feet

PCE = Passenger Car Equivalent

[1] Trip rates/Percentages from the Institute of Transportation Engineers, Trip Generation, 11th Edition, 2021. Land Use Code 150 - Warehousing.

[2] ITE Vehicle Mix for Warehousing

[3] SCAQMD Warehouse Truck Study Fleet Mix (Without Cold Storage).

[4] Passenger Car Equivalent (PCE) factors from County of Riverside Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled, dated December 2020.

Figure 3: Project Truck Trip Distribution

Figure 4: Project Automobile Trip Distribution

Existing Plus Project Conditions Intersection Operations

The Existing Plus Project Conditions Levels of Service at the study intersections were determined using the Highway Capacity Manual (HCM), 7th Edition methodology, described in *Attachment A*. Existing Plus Project AM and PM peak hour traffic volumes at the study area intersections are provided in *Attachment C (Figures A-3 and A-4)*. Table 3 shows the Existing Without and With Project AM and PM peak hour levels of service at study intersections using the HCM methodology. All LOS calculations are provided in *Attachment D*. As mentioned previously, it is to be noted that for the Existing Plus Project scenario, a traffic signal control was assumed for the intersection of Ramona Expressway/Brenna Avenue South – Project Driveway to facilitate truck access along Ramona Expressway. As shown in Table 3, under existing plus project conditions, both intersections would operate at a satisfactory LOS during the AM and PM peak hours.

Table 3. Existing Plus Project AM and PM Peak Hour Level of Service (HCM Methodology)

Intersection	Traffic Control	Existing				Existing Plus Project				AM Delay Difference	PM Delay Difference	Impact
		AM Peak		PM Peak		AM Peak		PM Peak				
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]			
1. Ramona Expressway/Brennan Ave South – Project Driveway	Signal	15.2	C	18.6	C	1.7	A	1.9	A	-13.5	-16.7	**No**
2. Ramona Expressway/Brennan Ave North	TWSC	19.9	C	17.1	C	20.6	C	18.4	C	0.7	1.3	**No**

=Unsatisfactory Level of Service

TWSC = Two-Way Stop Control

[1] Delay in Seconds

[2] Level of Service

Summary

As shown in Table 1, with the application of PCE factors, the project would generate a total of 22 AM peak hour trips and 24 PM peak hour trips. As per the City's threshold of 50 or more peak hour trips, the project would screen, and a preparation of an LOS TIA would not be required.

EPD Solutions referenced the City of Perris Transportation Impact Analysis Guidelines for CEQA that discusses analysis methodologies and screening thresholds to determine if this project would require a vehicle miles traveled (VMT) analysis. If a project meets the following criteria, then the VMT impact of the project is considered less-than significant and no further analysis of VMT would be required:

1. Project is 100% affordable housing.
2. Project is within one half mile of qualifying transit.
3. Project is a local serving land use.
4. Project is in a low VMT area.
5. Project generates less than 500 net daily trips.

The project would not meet Screening Criteria 1, 2, 3, or 4. However, the project is expected to generate 171 daily vehicle trips which is less than the City's threshold of 500 daily vehicle trips; therefore, Screening Criteria 5 is satisfied. Furthermore, VMT impacts would be considered less than significant and further analysis of VMT would not be required.

As shown in Table 3, under Existing Plus Project conditions, both intersections would operate at a satisfactory LOS during the AM and PM peak hours. Therefore, the project would not cause an LOS deficiency at the study intersections.

Attachment A

Methodology

Intersection operations are evaluated using Level of Service (LOS), which is a measure of the delay experienced by drivers on a roadway facility. LOS A indicates free-flow traffic conditions and is generally the best operating conditions. LOS F is an extremely congested condition and is the worst operating condition from the driver's perspective. In this report, LOS at signalized and unsignalized intersections is calculated using the Highway Capacity Manual (HCM), 6th Edition methodology.

LOS at signalized intersections is defined in terms of the weighted average control delay for the intersection as a whole. Control delay is a measure of the increase in travel time that is experienced due to traffic signal control and is expressed in terms of average control delay per vehicle (in seconds). Control delay is determined based on the intersection geometry and volume, signal cycle length, phasing and coordination along the arterial corridor. Table 1 shows the relationship between control delay and LOS.

Table 1: Relationship between Control Delay and LOS at a Signalized Intersection

LOS	Delay (Seconds per Vehicle)
A	≤ 10
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	>80

Unsignalized intersections are categorized as either all-way stop control (AWSC) or two-way stop control (TWSC). LOS at AWSC intersections is determined by the weighted average control delay of the overall intersection. The HCM TWSC intersection methodology calculates LOS based on the delay experienced by drivers on the minor (stop-controlled) approaches to the intersection. For TWSC intersections, LOS is determined for each minor-street movement, as well as the major-street left-turns. The relationship between delay and LOS at Unsignalized intersections is shown in Table 2.

Table 2: Relationship between Delay and LOS an Unsignalized Intersection

LOS	Delay (seconds)
A	0-10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

City of Perris LOS Standards and Traffic Criteria for Traffic Studies

LOS Standards

The City of Perris utilizes the following LOS standards:

- LOS "D" along all City maintained roads (including intersections) and LOS "D" along I-215 and SR 74 (including intersections with local streets and roads). An exception to the local road standard is LOS "E", at intersections of any Arterials and Expressways with SR 74, the Ramona-Cajalco Expressway or at I-215 freeway ramps.
- LOS "E" may be allowed within the boundaries of the Downtown Specific Plan Area to the extent that it would support transit-oriented development and walkable communities. Increased congestion in this area will facilitate an increase in transit ridership and encourage development of a complementary mix of land uses within a comfortable walking distance from light rail stations.

Thresholds of a Traffic Impact

The City of Perris utilizes the following thresholds to determine if a project causes a traffic impact:

- A LOS A project-related traffic impact is considered direct when a study intersection operates at an acceptable Level of Service for existing conditions (without the project) and the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable Level of Service for existing plus project conditions.
- A project-related traffic impact is considered direct when a study intersection operates at an unacceptable Level of Service for existing conditions (without the project) and the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more.
- A cumulative impact is considered direct when a study intersection is forecast to operate at an acceptable Level of Service without the project and with the addition of 50 or more a.m. or p.m. peak hour project trips causes the intersection delay to increase by 2 seconds or more and causes the intersection to operate at an unacceptable Level of Service.
- A cumulative impact is considered an indirect traffic impact when a study intersection is forecast to operate at an unacceptable Level of Service with the addition of cumulative/background traffic and the project contributes 50 or more a.m. or p.m. peak hour project trips and causes the intersection delay to increase by 2 seconds or more.

Attachment B

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
11/10/22	LOCATION:	Perris	PROJECT #:	SC3735
THURSDAY	NORTH & SOUTH:	Brennan South	LOCATION #:	1
	EAST & WEST:	Ramona	CONTROL:	STOP N

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM	▲ N	
	Factor	1	1.5	2	3	2	2			PM		
										MD	◄ W	E ►
										OTHER	S	
										OTHER	▼	

		NORTHBOUND Brennan South			SOUTHBOUND Brennan South			EASTBOUND Ramona			WESTBOUND Ramona			
	LANES:	NL X	NT X	NR 0	SL X	ST X	SR X	EL X	ET 3	ER 0	WL X	WT 4	WR X	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	255	1	0	362	0	618
	7:15 AM	0	0	3	0	0	0	0	256	3	0	405	0	666
	7:30 AM	0	0	3	0	0	0	0	312	5	0	394	0	713
	7:45 AM	0	0	0	0	0	0	0	278	4	0	367	0	649
	8:00 AM	0	0	0	0	0	0	0	302	1	0	350	0	653
	8:15 AM	0	0	1	0	0	0	0	271	4	0	334	0	609
	8:30 AM	0	0	1	0	0	0	0	306	8	0	373	0	687
	8:45 AM	0	0	0	0	0	0	0	319	1	0	313	0	632
	VOLUMES	0	0	8	0	0	0	0	2,297	27	0	2,896	0	5,227
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	99%	1%	0%	100%	0%	
	APP/DEPART	8	/	0	0	/	27	2,323	/	2,305	2,896	/	2,896	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	6	0	0	0	0	1,147	13	0	1,515	0	2,681
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	99%	1%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.000			0.916			0.936		0.940
	APP/DEPART	6	/	0	0	/	13	1,160	/	1,153	1,515	/	1,515	0
PM	4:00 PM	0	0	1	0	0	0	0	325	0	0	200	0	526
	4:15 PM	0	0	0	0	0	0	0	344	3	0	298	0	645
	4:30 PM	0	0	1	0	0	0	0	386	0	0	360	0	747
	4:45 PM	0	0	0	0	0	0	0	391	0	0	341	0	732
	5:00 PM	0	0	3	0	0	0	0	365	3	0	351	0	722
	5:15 PM	0	0	0	0	0	0	0	412	0	0	316	0	728
	5:30 PM	0	0	1	0	0	0	0	406	2	0	291	0	700
	5:45 PM	0	0	2	0	0	0	0	391	4	0	325	0	721
	VOLUMES	0	0	7	0	0	0	0	3,018	12	0	2,481	0	5,518
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	APP/DEPART	7	/	0	0	/	12	3,030	/	3,025	2,481	/	2,481	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	4	0	0	0	0	1,553	3	0	1,368	0	2,927
	APPROACH %	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.350			0.000			0.945			0.950		0.980
	APP/DEPART	4	/	0	0	/	3	1,556	/	1,556	1,368	/	1,368	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:				
11/10/22	LOCATION:	Perris	PROJECT #:	SC3735
THURSDAY	NORTH & SOUTH:	Brennan North	LOCATION #:	2
	EAST & WEST:	Ramona	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM	▲ N	
	Factor	1	1.5	2	3	2	2			PM MD	◄ W	E ►
										OTHER	S ▼	
										OTHER		

		NORTHBOUND Brennan North			SOUTHBOUND Brennan North			EASTBOUND Ramona			WESTBOUND Ramona			
	LANES:	NL X	NT X	NR X	SL X	ST X	SR 0	EL X	ET 4	ER X	WL X	WT 4	WR 0	TOTAL
AM	7:00 AM	0	0	0	0	0	2	0	260	0	0	351	9	621
	7:15 AM	0	0	0	0	0	2	0	262	0	0	396	9	669
	7:30 AM	0	0	0	0	0	10	0	307	0	0	391	4	711
	7:45 AM	0	0	0	0	0	3	0	288	0	0	364	4	659
	8:00 AM	0	0	0	0	0	1	0	304	0	0	340	8	653
	8:15 AM	0	0	0	0	0	4	0	276	0	0	328	3	611
	8:30 AM	0	0	0	0	0	0	0	312	0	0	370	5	687
	8:45 AM	0	0	0	0	0	3	0	316	0	0	306	10	634
	VOLUMES	0	0	0	0	0	25	0	2,323	0	0	2,845	51	5,243
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	98%	2%	
	APP/DEPART	0	/	51	25	/	0	2,323	/	2,323	2,896	/	2,870	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	0	0	16	0	1,160	0	0	1,491	24	2,691
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	98%	2%	
	PEAK HR FACTOR		0.000			0.400			0.946			0.936		0.947
	APP/DEPART	0	/	24	16	/	0	1,160	/	1,160	1,515	/	1,507	0
PM	4:00 PM	0	0	0	0	0	3	0	324	0	0	191	6	524
	4:15 PM	0	0	0	0	0	2	0	350	0	0	301	5	658
	4:30 PM	0	0	0	0	0	0	0	385	0	0	359	5	749
	4:45 PM	0	0	0	0	0	5	0	388	0	0	331	6	730
	5:00 PM	0	0	0	0	0	3	0	377	0	0	342	13	734
	5:15 PM	0	0	0	0	0	0	0	407	0	0	311	2	720
	5:30 PM	0	0	0	0	0	2	0	409	0	0	280	2	693
	5:45 PM	0	0	0	0	0	5	0	392	0	0	326	3	726
	VOLUMES	0	0	0	0	0	20	0	3,030	0	0	2,440	42	5,531
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	98%	2%	
	APP/DEPART	0	/	42	20	/	0	3,030	/	3,030	2,481	/	2,460	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	0	0	0	0	0	8	0	1,556	0	0	1,343	26	2,932
	APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	98%	2%	
	PEAK HR FACTOR		0.000			0.400			0.957			0.940		0.979
	APP/DEPART	0	/	26	8	/	0	1,556	/	1,556	1,368	/	1,351	0

Attachment C

Figure A-1: Existing AM Traffic Volumes

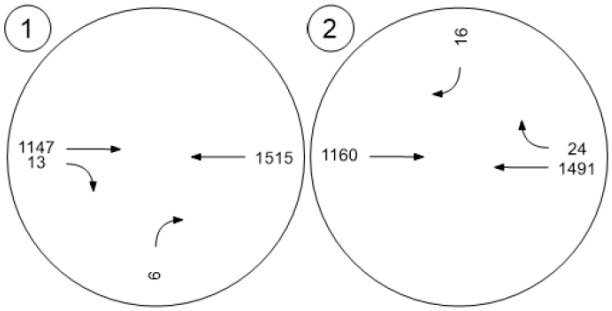


Figure A-2: Existing PM Traffic Volumes

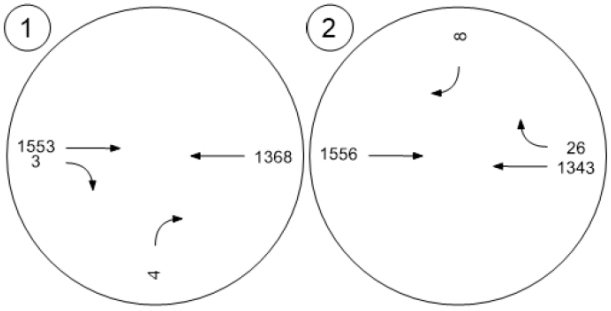


Figure A-3: Existing Plus Project AM Traffic Volumes

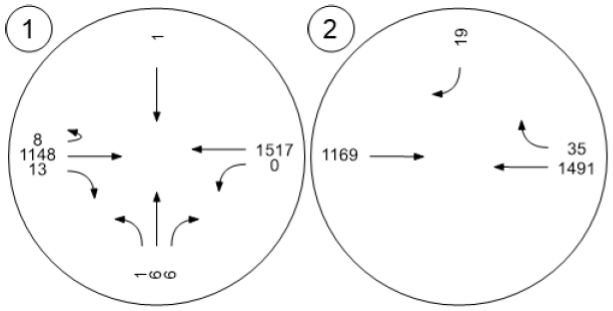


Figure A-4: Existing Plus Project PM Traffic Volumes

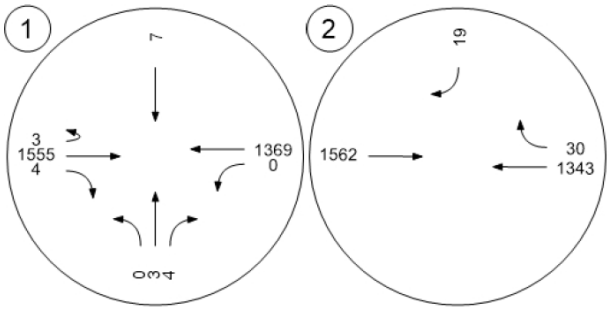


Figure A-5: Project AM Peak Hour Trip Assignment

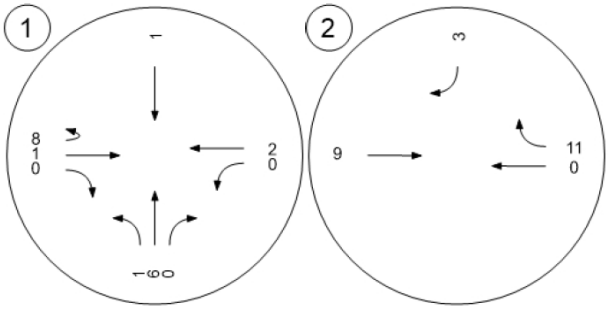
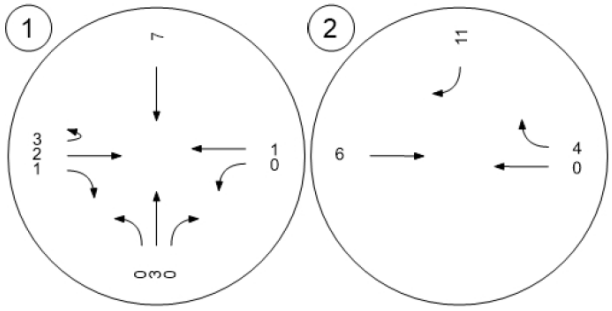


Figure A-6: Project PM Peak Hour Trip Assignment



Attachment D

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing AM.pdf

Scenario 1 Existing AM
1/3/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ramona Expressway/Brenna Ave South – Project Driveway	Two-way stop	HCM 7th Edition	NB Right	0.033	15.2	C
2	Ramona Expressway/Brenna Ave North	Two-way stop	HCM 7th Edition	SB Right	0.142	19.9	C

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: Ramona Expressway/Brenna Ave South – Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

Intersection Setup

Name	Brenna Ave South			Project Driveway			Ramona Expressway			Ramona Expressway		
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	0	0	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	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			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Brenna Ave South			Project Driveway			Ramona Expressway			Ramona Expressway		
Base Volume Input [veh/h]	0	0	6	0	0	0	0	1147	13	0	1515	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Total Hourly Volume [veh/h]	0	0	6	0	0	0	0	1147	13	0	1515	0
Peak Hour Factor	1.0000	1.0000	0.5000	1.0000	1.0000	1.0000	1.0000	0.9160	0.9160	1.0000	0.9360	1.0000
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]	0	0	3	0	0	0	0	313	4	0	405	0
Total Analysis Volume [veh/h]	0	0	12	0	0	0	0	1252	14	0	1619	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	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	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	15.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			C					A	A		A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.17			0.00			0.00			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	0.06											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Ramona Expressway/Brenna Ave North

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.142

Intersection Setup

Name	Brenna Ave North				Ramona Expressway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Brenna Ave North				Ramona Expressway	
Base Volume Input [veh/h]	0	16	0	1160	1491	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	16	0	1160	1491	24
Peak Hour Factor	1.0000	0.4000	1.0000	0.9460	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	10	0	307	398	6
Total Analysis Volume [veh/h]	0	40	0	1226	1593	26
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.14	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	19.94	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.49	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	12.26	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	19.94		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	C					

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing AM.pdf

Scenario 1 Existing AM
1/3/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound	Eastbound		Westbound	Total Volume
		Right	Thru	Right	Thru	
1	Ramona Expressway/Brenna Ave South – Project Driveway	6	1147	13	1515	2681

ID	Intersection Name	Southbound	Eastbound	Westbound		Total Volume
		Right	Thru	Thru	Right	
2	Ramona Expressway/Brenna Ave North	16	1160	1491	24	2691

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing PM.pdf

Scenario 2 Existing PM
1/3/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ramona Expressway/Brenna Ave South – Project Driveway	Two-way stop	HCM 7th Edition	NB Right	0.040	18.6	C
2	Ramona Expressway/Brenna Ave North	Two-way stop	HCM 7th Edition	SB Right	0.063	17.1	C

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: Ramona Expressway/Brenna Ave South – Project Driveway

Control Type:	Two-way stop	Delay (sec / veh):	18.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.040

Intersection Setup

Name	Brenna Ave South			Project Driveway			Ramona Expressway			Ramona Expressway		
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	0	0	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	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			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Brenna Ave South			Project Driveway			Ramona Expressway			Ramona Expressway		
Base Volume Input [veh/h]	0	0	4	0	0	0	0	1553	3	0	1368	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 [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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
Total Hourly Volume [veh/h]	0	0	4	0	0	0	0	1553	3	0	1368	0
Peak Hour Factor	1.0000	1.0000	0.3500	1.0000	1.0000	1.0000	1.0000	0.9450	0.9450	1.0000	0.9500	1.0000
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]	0	0	3	0	0	0	0	411	1	0	360	0
Total Analysis Volume [veh/h]	0	0	11	0	0	0	0	1643	3	0	1440	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	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	0.04	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	18.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			C					A	A		A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.63			0.00			0.00			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	0.07											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Ramona Expressway/Brenna Ave North

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name	Brenna Ave North				Ramona Expressway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Brenna Ave North				Ramona Expressway	
Base Volume Input [veh/h]	0	8	0	1556	1343	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	8	0	1556	1343	26
Peak Hour Factor	1.0000	0.4000	1.0000	0.9570	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	0	406	357	7
Total Analysis Volume [veh/h]	0	20	0	1626	1429	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	17.11	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.20	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	5.02	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.11		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	C					

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing PM.pdf

Scenario 2 Existing PM
1/3/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound	Eastbound		Westbound	Total Volume
		Right	Thru	Right	Thru	
1	Ramona Expressway/Brenna Ave South – Project Driveway	4	1553	3	1368	2928

ID	Intersection Name	Southbound	Eastbound	Westbound		Total Volume
		Right	Thru	Thru	Right	
2	Ramona Expressway/Brenna Ave North	8	1556	1343	26	2933

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing Plus Project AM.pdf

Scenario 3 Existing Plus Project AM
1/3/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ramona Expressway/Brenna Ave South – Project Driveway	Signalized	HCM 7th Edition	NB Right	0.345	1.7	A
2	Ramona Expressway/Brenna Ave North	Two-way stop	HCM 7th Edition	SB Right	0.172	20.6	C

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: Ramona Expressway/Brenna Ave South – Project Driveway

Control Type:	Signalized	Delay (sec / veh):	1.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.345

Intersection Setup

Name	Brenna Ave South			Project Driveway			Ramona Expressway				Ramona Expressway		
Approach	Northbound			Southbound			Eastbound				Westbound		
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.0	12.0	12.0	12.0	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.	100.	100.	100.	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	1	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	100.	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00				50.00		
Grade [%]	0.00			0.00			0.00				0.00		
Curb Present	No			No			No				No		
Crosswalk	No			No			No				No		

Volumes

Name	Brenna Ave South			Project Driveway			Ramona Expressway				Ramona Expressway		
Base Volume Input [veh/h]	0	0	6	0	0	0	0	0	1147	13	0	1515	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
Proportion of CAVs [%]	0.00												
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	6	0	0	1	0	8	0	1	0	0	2	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]	1	6	6	0	1	0	8	0	1148	13	0	1517	0
Peak Hour Factor	1.0000	0.9500	0.5000	1.0000	0.9500	1.0000	1.00	1.00	0.91	0.91	1.0000	0.9360	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	3	0	0	0	2	0	313	4	0	405	0
Total Analysis Volume [veh/h]	1	6	12	0	1	0	8	0	1253	14	0	1621	0
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 major stree	0			0			0				0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0				0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0				0		
v_ci, Inbound Pedestrian Volume crossing minor street [	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]	120
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	Permis	Permis	Permis	Permis	Permis	Permis	Perm	Perm	Perm	Perm	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	34	0	0	34	0	0	0	86	0	0	86	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	10	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
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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No				No			No	
Maximum Recall		No			No				No			No	
Pedestrian Recall		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	L	C	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	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	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	5	107	107	107	107	107
g / C, Green / Cycle	0.04	0.04	0.04	0.89	0.89	0.89	0.89	0.89
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.00	0.03	0.33	0.33	0.00	0.23
s, saturation flow rate [veh/h]	1439	1700	1900	316	1900	1893	444	6901
c, Capacity [veh/h]	100	69	77	324	1696	1689	420	6160
d1, Uniform Delay [s]	56.73	55.80	55.24	1.70	1.04	1.04	0.00	0.90
k, delay calibration	0.11	0.11	0.11	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
d2, Incremental Delay [s]	0.04	1.96	0.07	0.14	0.63	0.64	0.00	0.10
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.01	0.26	0.01	0.02	0.37	0.37	0.00	0.26
d, Delay for Lane Group [s/veh]	56.77	57.76	55.30	1.84	1.67	1.68	0.00	1.01
Lane Group LOS	E	E	E	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.03	0.57	0.03	0.03	0.94	0.93	0.00	0.04
50th-Percentile Queue Length [ft/ln]	0.77	14.19	0.76	0.86	23.39	23.34	0.00	1.12
95th-Percentile Queue Length [veh/ln]	0.06	1.02	0.05	0.06	1.68	1.68	0.00	0.08
95th-Percentile Queue Length [ft/ln]	1.38	25.54	1.37	1.54	42.10	42.01	0.00	2.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.77	57.76	57.76	0.00	55.30	0.00	1.84	0.00	1.67	1.68	0.00	1.01	0.00
Movement LOS	E	E	E		E		A		A	A	A	A	
d_A, Approach Delay [s/veh]	57.71			55.30			1.68				1.01		
Approach LOS	E			E			A				A		
d_I, Intersection Delay [s/veh]	1.69												
Intersection LOS	A												
Intersection V/C	0.345												

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 [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	500	1367	1367
d_b, Bicycle Delay [s]	33.75	33.75	6.02	6.02
l_b,int, Bicycle LOS Score for Intersection	1.591	1.561	2.611	2.228
Bicycle LOS	A	A	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: Ramona Expressway/Brenna Ave North

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.172

Intersection Setup

Name	Brenna Ave North		Ramona Expressway		Ramona Expressway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Brenna Ave North		Ramona Expressway		Ramona Expressway	
Base Volume Input [veh/h]	0	16	0	1160	1491	24
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	9	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	0	1169	1491	35
Peak Hour Factor	1.0000	0.4000	1.0000	0.9460	0.9360	0.9360
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	0	309	398	9
Total Analysis Volume [veh/h]	0	48	0	1236	1593	37
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.17	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	20.60	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.61	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	15.29	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.60		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	C					

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing Plus Project AM.pdf

Scenario 3 Existing Plus Project AM
1/3/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound	Eastbound			Westbound		Total Volume
		Left	Thru	Right	Thru	U-T	Thru	Right	Left	Thru	
1	Ramona Expressway/Brenna Ave South – Project Driveway	1	6	6	1	8	1148	13	0	1517	2700

ID	Intersection Name	Southbound	Eastbound	Westbound		Total Volume
		Right	Thru	Thru	Right	
2	Ramona Expressway/Brenna Ave North	19	1169	1491	35	2714

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing Plus Project PM.pdf

Scenario 4 Existing Plus Project PM
1/3/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Ramona Expressway/Brenna Ave South – Project Driveway	Signalized	HCM 7th Edition	NB Right	0.443	1.9	A
2	Ramona Expressway/Brenna Ave North	Two-way stop	HCM 7th Edition	SB Right	0.152	18.4	C

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: Ramona Expressway/Brenna Ave South – Project Driveway

Control Type:	Signalized	Delay (sec / veh):	1.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.443

Intersection Setup

Name	Brenna Ave South			Project Driveway			Ramona Expressway				Ramona Expressway		
Approach	Northbound			Southbound			Eastbound				Westbound		
Lane Configuration													
Turning Movement	Left	Thru	Right	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.0	12.0	12.0	12.0	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0	1	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.	100.	100.	100.	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	1	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	100.	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00				50.00		
Grade [%]	0.00			0.00			0.00				0.00		
Curb Present	No			No			No				No		
Crosswalk	No			No			No				No		

Volumes

Name	Brenna Ave South			Project Driveway			Ramona Expressway				Ramona Expressway		
Base Volume Input [veh/h]	0	0	4	0	0	0	0	0	1553	3	0	1368	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	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
Proportion of CAVs [%]	0.00												
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	0	7	0	3	0	2	1	0	1	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]	0	3	4	0	7	0	3	0	1555	4	0	1369	0
Peak Hour Factor	1.0000	0.9500	0.3500	1.0000	0.9500	1.0000	1.00	1.00	0.94	0.94	1.0000	0.9500	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.00	1.00	1.00	1.00	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	3	0	2	0	1	0	411	1	0	360	0
Total Analysis Volume [veh/h]	0	3	11	0	7	0	3	0	1646	4	0	1441	0
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 major stree	0			0			0				0		
v_di, Inbound Pedestrian Volume crossing major street [	0			0			0				0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			0			0				0		
v_ci, Inbound Pedestrian Volume crossing minor street [	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]	120
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	Permis	Permis	Permis	Permis	Permis	Permis	Perm	Perm	Perm	Perm	Permis	Permis	Permis
Signal Group	0	8	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups													
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	10	0	0	10	0	0	0	10	0	0	10	0
Maximum Green [s]	0	30	0	0	30	0	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	33	0	0	33	0	0	0	87	0	0	87	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	10	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
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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No				No			No	
Maximum Recall		No			No				No			No	
Pedestrian Recall		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	L	C	C	L	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	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	0.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	4	4	108	108	108	108	108
g / C, Green / Cycle	0.03	0.03	0.03	0.90	0.90	0.90	0.90	0.90
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.00	0.01	0.43	0.43	0.00	0.21
s, saturation flow rate [veh/h]	1431	1669	1900	376	1900	1898	308	6901
c, Capacity [veh/h]	84	55	62	379	1711	1710	304	6215
d1, Uniform Delay [s]	0.00	56.61	56.35	1.38	1.05	1.05	0.00	0.75
k, delay calibration	0.11	0.11	0.11	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
d2, Incremental Delay [s]	0.00	2.44	0.79	0.04	0.98	0.98	0.00	0.09
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.26	0.11	0.01	0.48	0.48	0.00	0.23
d, Delay for Lane Group [s/veh]	0.00	59.05	57.14	1.42	2.02	2.03	0.00	0.84
Lane Group LOS	A	E	E	A	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.00	0.45	0.22	0.01	1.05	1.05	0.00	0.04
50th-Percentile Queue Length [ft/ln]	0.00	11.30	5.50	0.26	26.23	26.24	0.00	0.94
95th-Percentile Queue Length [veh/ln]	0.00	0.81	0.40	0.02	1.89	1.89	0.00	0.07
95th-Percentile Queue Length [ft/ln]	0.00	20.33	9.91	0.47	47.21	47.23	0.00	1.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	59.05	59.05	0.00	57.14	0.00	1.42	0.00	2.02	2.03	0.00	0.84	0.00
Movement LOS	A	E	E		E		A		A	A	A	A	
d_A, Approach Delay [s/veh]	59.05			57.14			2.02				0.84		
Approach LOS	E			E			A				A		
d_I, Intersection Delay [s/veh]	1.85												
Intersection LOS	A												
Intersection V/C	0.443												

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 [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	483	483	1383	1383
d_b, Bicycle Delay [s]	34.50	34.50	5.70	5.70
l_b,int, Bicycle LOS Score for Intersection	1.583	1.571	2.923	2.154
Bicycle LOS	A	A	C	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: Ramona Expressway/Brenna Ave North

Control Type:	Two-way stop	Delay (sec / veh):	18.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.152

Intersection Setup

Name	Brenna Ave North				Ramona Expressway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Brenna Ave North				Ramona Expressway	
Base Volume Input [veh/h]	0	8	0	1556	1343	26
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	0	6	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	0	1562	1343	30
Peak Hour Factor	1.0000	0.4000	1.0000	0.9570	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	0	408	357	8
Total Analysis Volume [veh/h]	0	48	0	1632	1429	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.15	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	18.41	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.53	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	13.21	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.41		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	C					

Ramona and Brennon Warehouse

Vistro File: C:\...\Vistro - Update - 2.vistro
Report File: C:\...\Existing Plus Project PM.pdf

Scenario 4 Existing Plus Project PM
1/3/2023

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound	Eastbound			Westbound		Total Volume
		Left	Thru	Right	Thru	U-T	Thru	Right	Left	Thru	
1	Ramona Expressway/Brenna Ave South – Project Driveway	0	3	4	7	3	1555	4	0	1369	2945

ID	Intersection Name	Southbound	Eastbound	Westbound		Total Volume
		Right	Thru	Thru	Right	
2	Ramona Expressway/Brenna Ave North	19	1562	1343	30	2954