
Appendix I

Transportation Impact Analysis

Transportation Impact Analysis

Apple Valley 143

Town of Apple Valley

JUNE 2023

Prepared for:

TOWN OF APPLE VALLEY

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1 Introduction

1.1 Purpose and Scope of the TIA

The purpose of this Transportation Impact Analysis (TIA) is to identify traffic impacts associated with the proposed Apple Valley Industrial Project (proposed project or project), an industrial development in the Town of Apple Valley (Town), in San Bernardino County (County). This TIA has been prepared per the Town of Apple Valley adopted Resolution No 2021-08 related to Vehicle Miles Traveled (May 2021) and the San Bernardino County Transportation Impact Study Guidelines (July 2019). In addition, this TIA complies with the Town of Apple Valley General Plan Circulation Element requirements and with the Congestion Management Program (CMP) for the San Bernardino County Transportation Authority (SBCTA).

The objectives of this TIA are to:

- Document existing roadway, pedestrian, bicycle, transit and traffic conditions, including intersection levels of service in the study area;
- Estimate trip generation, distribution, and assignment characteristics for the proposed project;
- Provide a Vehicle Miles Traveled (VMT) analysis per Senate Bill 743, the updated California Environmental Quality Act (CEQA) Guidelines, the Town of Apple Valley adopted Resolution No 2021-08, and the San Bernardino County Transportation Impact Study Guidelines;
- Document future short-range (Opening Year 2025) intersection levels of service in the study area per traffic volumes derived from adding growth to existing traffic volumes;
- Analyze the traffic impacts that would occur as a result of buildout of the proposed project under the Existing (2022), Opening Year (2025), and Horizon Year (2040) buildout conditions;
- Describe the significance of the potential impacts under the Existing, Opening Year 2025, and General Plan buildout conditions;
- Identify CEQA-required mitigation measures for significant transportation impacts and/or other improvements needed to meet level of service standards (if any); and,
- Provide findings and recommendations based on the traffic analysis of the proposed project.

Figure 1, Project Location and Study Area, shows the project location and study area. As illustrated in Figure 1, the study area is comprised of 3 intersections, 2 roadway segments, and the project driveways.

1.2 Project Description

The approximately 143-acre Project site is located in the northern part of the Town, which is within the Victor Valley Region of San Bernardino County. The Project site is located on the northeast quadrant of I-15 and Stoddard Wells Road. Land uses surrounding the Project site primarily consist of vacant land. In the immediate vicinity, the project site is bordered by Johnson Road to the north, vacant land and Grasshopper Road to the east, Stoddard Wells Road and a planned travel center to the south, and I-15 to the west.

The Project would include construction of three industrial/warehouse buildings and associated improvements on 143 acres of vacant land (see Figure 2, Site Plan). Building 1, the southernmost building, would be approximately 615,000 square feet, Building 2, the center building, would be approximately 1,221,000 square feet, and Building 3, the northernmost building, would be approximately 682,500 square feet.

On-Site and Off-Site Improvements

The Project would include improvements along Stoddard Wells Road and Johnson Road, including frontage landscaping and pedestrian improvements. A variety of trees, shrubs, plants, and land covers would be planted within the Project frontage's landscape setback area, as well as within the landscape areas found around the proposed industrial/warehouse buildings and throughout the Project site. The Project would also involve the off-site construction of Outer I-15 on the eastern boundary of the Project Site. This would be a public road once constructed.

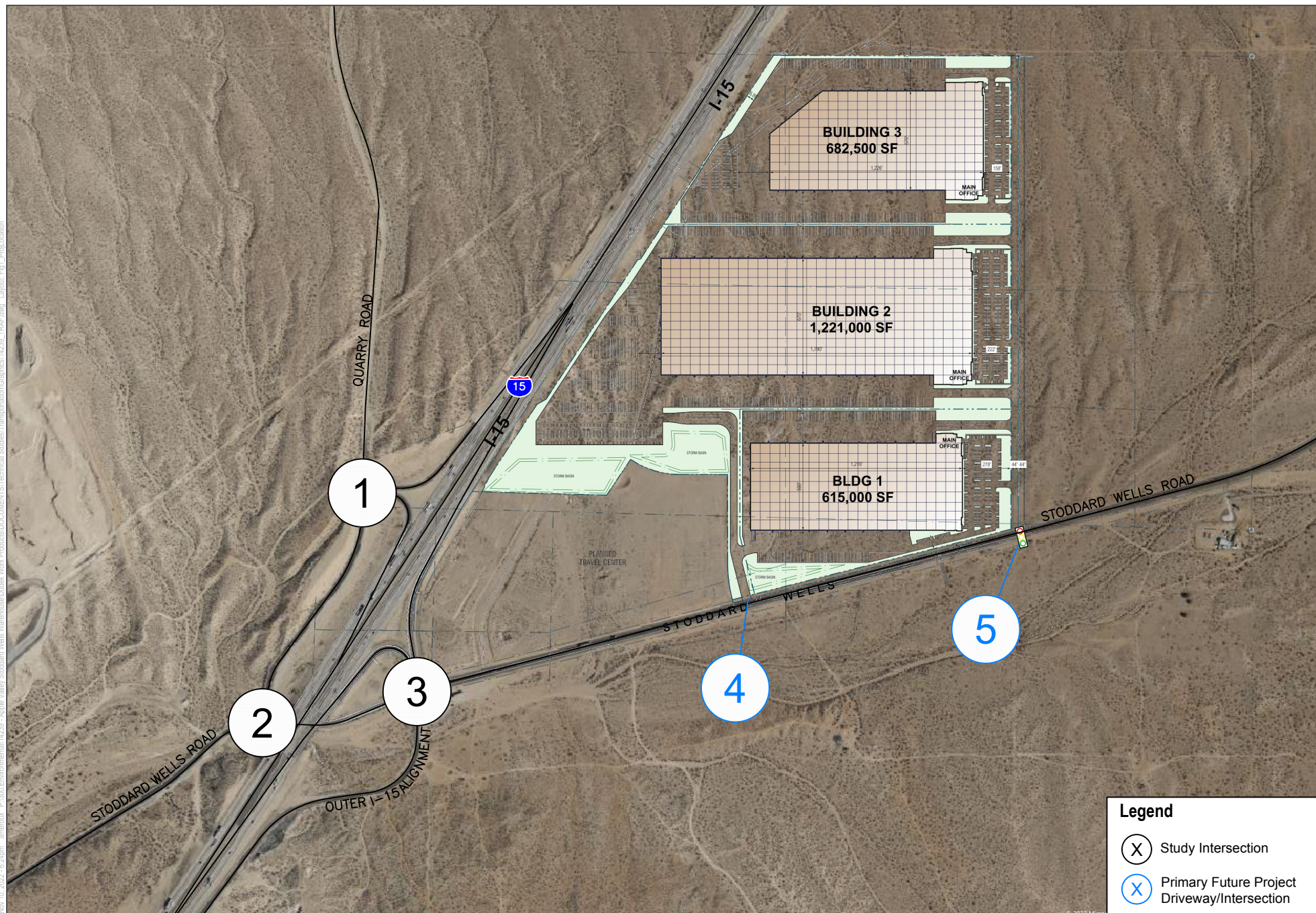
Site Access and Circulation

Access to the Project site would be provided via Outer I-15 Road on the eastern boundary of the project site, as well as a driveway off of Stoddard Wells Road. Paved passenger vehicle parking areas would be provided within areas east of Buildings 1, 2 and 3, while tractor-trailer stalls and loading docks would be surrounding Building 1 to the north and south, and surrounding Buildings 2 and 3 to the north, south, and west. In total, the Project would provide approximately 515 loading dock positions, approximately 884 tractor-trailer stalls, roughly 975 passenger vehicle spaces, and approximately 920,000 square feet of landscape area coverage.

Operations

Tenants for the Project have not been identified and the three industrial warehouse buildings are considered speculative. Business operations would be expected to be conducted within the enclosed buildings, with the exception of trucks and passenger vehicles accessing the site, passenger and truck parking, the loading and unloading of trailers within designated truck courts/loading area, and the internal and external movement of materials around the Project site via forklifts, pallet jacks, yard hostlers, and similar equipment. It is anticipated that the facilities would be operated 24 hours a day, 7 days a week.

Nov 10, 2022 2:24pm amrcow P:\300\Environmental\4239-Apple Valley Stoddard Wells Warehouse\DUDEK Work Products\DOCUMENT\ST\Technical Studies Transportation\Graphics\4239_TPAF_Zimg Layout_Fig 1_Pollution



SOURCE: Bing Maps; RGA 2022

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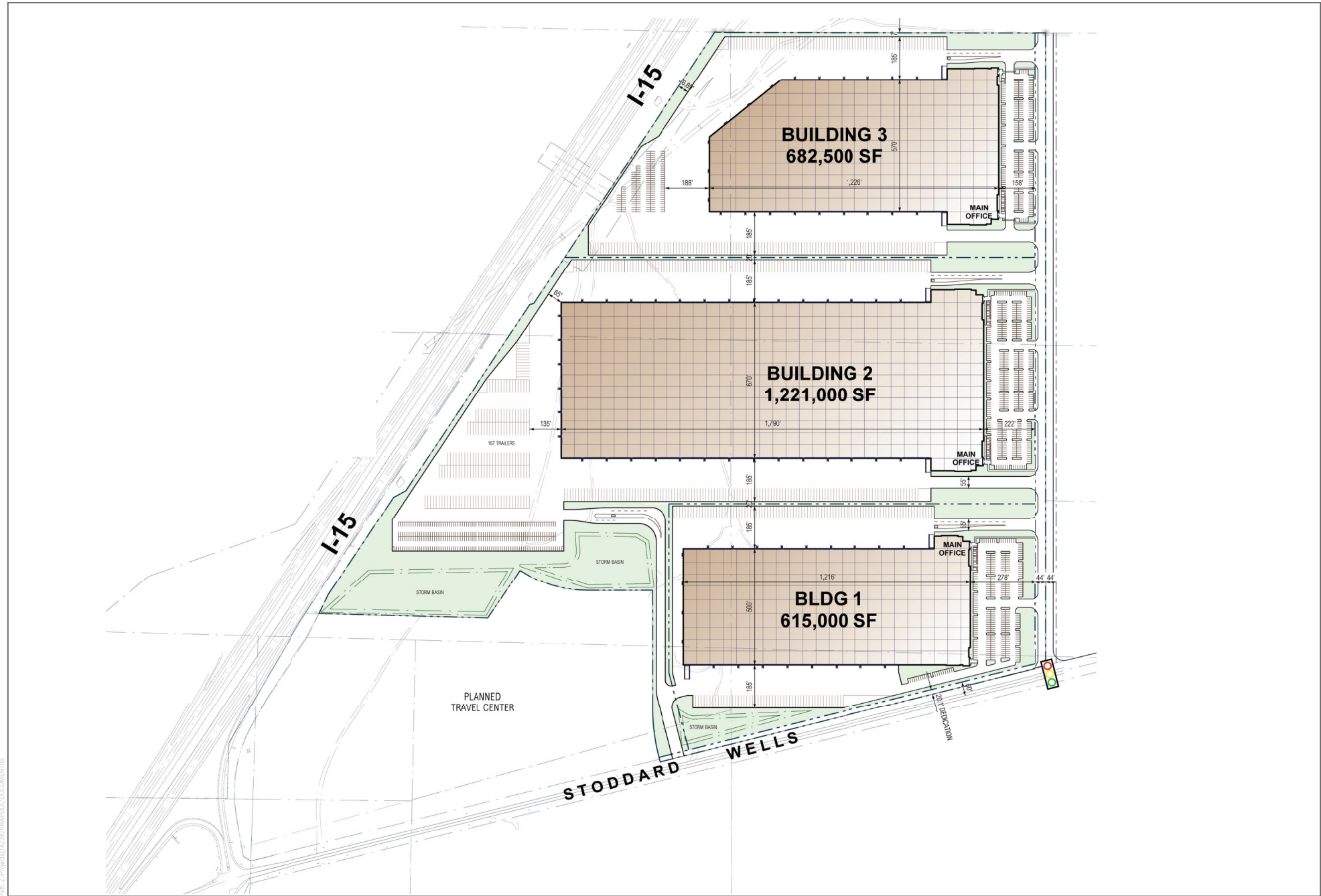


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FIGURE 1
Project Location and Study Area

Apple Valley 143 Project

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SOURCE: RGA 2022

FIGURE 2
Project Site Plan
Apple Valley 143 Project

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2 Study Area

This section provides a summary of the existing street network, including the major roadways serving the site, the existing transit service, and bicycle and pedestrian facilities in the study area.

2.1 Existing Street Network

Figure 3 provides the Town of Apple Valley General Plan Traffic Circulation Plan. Primary access to the site would be provided from I-15 to Stoddard Wells Road and Quarry Road. Characteristics of the primary roadways within the study area are described below. A map of the Town's designated truck routes is also provided as Figure 4.

- **I-15** is a north-south, divided, four to eight-lane freeway located near the project's western boundary. I-15 is a major interstate freeway that begins near the Mexico—US Border and extends to Alberta, Canada, and serves as a critical connection for many other regional roadways, freeways, and highways. Caltrans classifies I-15 as a designated truck route on the National Network (STAA). The posted speed limit is 65 miles per hour (MPH).
- **Stoddard Wells Road** is generally aligned in a north-south direction, with two lanes. It is an undivided rural road with unpaved shoulders and a designated truck route in the Town of Apple Valley. Stoddard Wells is proposed to be upgraded from a Major Road to a Major Divided arterial per the Town of Apple Valley General Plan Circulation Element as noted in Table 1.
- **Quarry Road** is a north-south paved two-lane road between Stoddard Wells Road and the I-15 southbound ramps. North of the I-15 ramps, Quarry Road is an unpaved rural road. Additionally, Quarry Road extends east-west from I-15 to the eastern Town boundary, north of the Project site. Upgrades to this section of Quarry Road within the Town limits are identified in Table 1. There is no posted speed limit.
- **Outer I-15** is a north-south two-lane road that parallels I-15 to the east. No pedestrian or bicycle facilities are located along the road. It terminates at the I-15 northbound ramp intersection at Stoddard Wells Road. There is no posted speed limit. The Project would extend Outer I-15 along the eastern boundary of the Project Site. Once constructed, this would be a public road.

2.1.1 Apple Valley General Plan Recommended Improvements

The Apple Valley General Plan Circulation Element (Town of Apple Valley 2009) identifies a range of recommended improvements to the local street network to accommodate buildout of the General Plan. Figure 4 shows the functional classification of roads within the Town at build out of the General Plan. The map reflects the land use pattern contained in the Land Use Element, the roadway classifications previously implemented by the Town, and the land use and circulation plans of surrounding jurisdictions, including the City of Victorville and the County of San Bernardino. It includes the assignment of a new roadway classification, Collector roadway, to the Town's hierarchy of roads, in order to enhance the circulation network.

Table 1 presents the roadway improvements that are proposed within the vicinity of the project site. These improvements would provide additional roadway capacity. The Stoddard Wells Road widening projects is currently listed in the Town's Five-Year Capital Improvement Plan (CIP) (Town of Apple Valley 2020).

Table 1. Apple Valley General Plan Recommended Improvements

Roadway	Recommended Improvement
I-15	▪ A future interchange at I-15 and Quarry Road
Outer I-15	▪ Extend Outer I-15 along the east side of I-15 between Stoddard Wells Road and Dale Evans Parkway. Extension would be classified as a Secondary Road (88" ROW)
Stoddard Wells Road	▪ between I-15 Freeway and Alembic Street – upgrade from Major Road (104' ROW) to Major Divided Arterial (128' ROW) ▪ between Alembic Street and Johnson Street - upgrade from Major Road to Major Divided Arterial
Quarry Road	▪ between I-15 Freeway and Stoddard Wells Road – upgrade from Secondary Road (88' ROW) to Major Divided Arterial (128' ROW) ▪ between Stoddard Wells Road and Dale Evans Road - upgrade from Secondary Road (88' ROW) to Major Divided Arterial (128' ROW)

2.2 Rail and Transit System

The Town of Apple Valley is served by bus services provided by Victor Valley Transit Authority (VVTa), which provides regional and local services throughout Victor Valley. Regionally, the Town is served by passenger rail services offered by the National Railroad Passenger Corporation (Amtrak). Victor Valley and its neighboring communities are also expected to benefit from the development of Brightline West, a high-speed passenger rail system that will connect Los Angeles with Las Vegas and will include a stop in Victor Valley (Brightline West 2022). The rail and transit providers are described below.

Amtrak

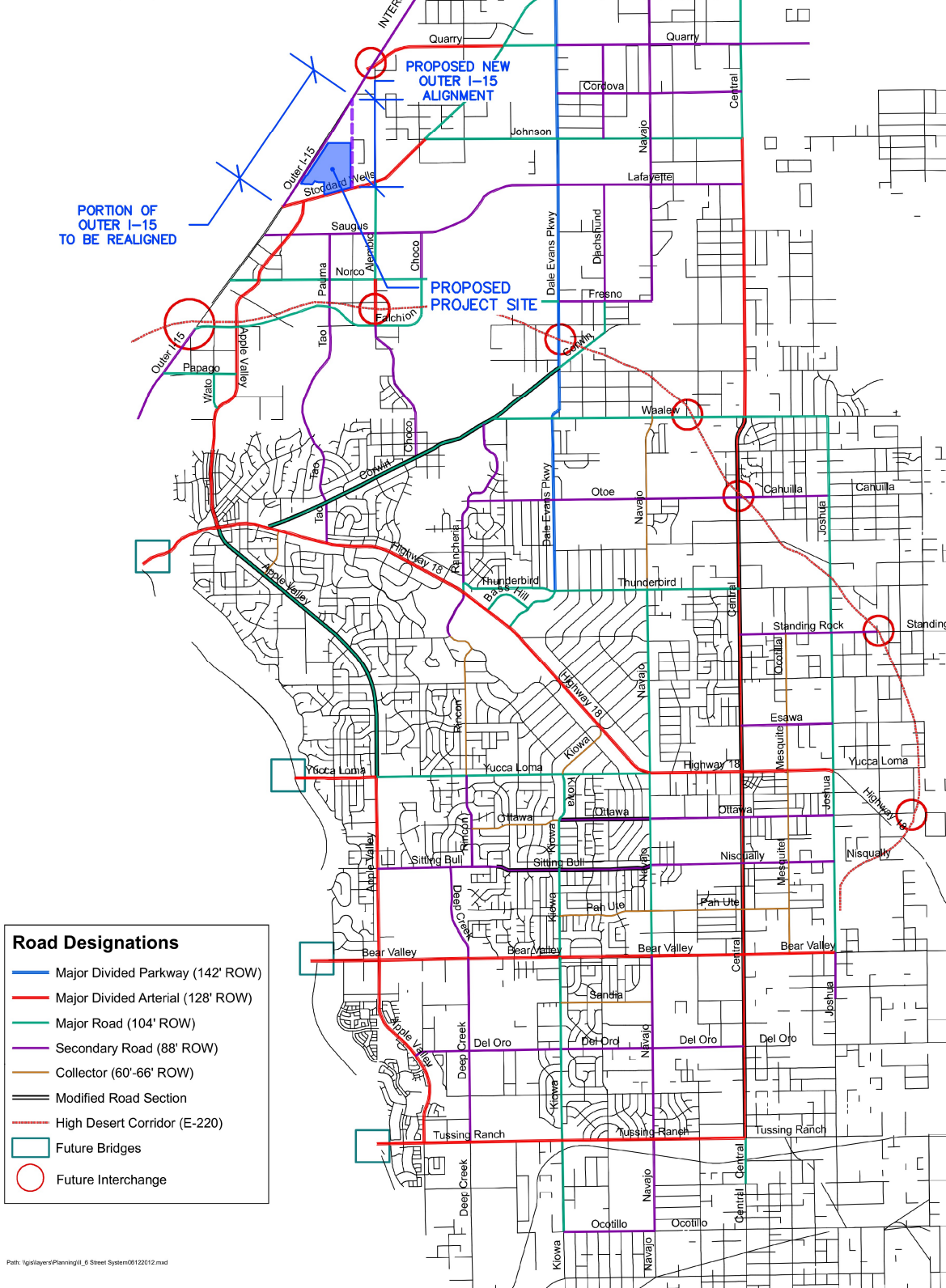
Amtrak is a national rail operator, with 21,000 route miles in 46 states, the District of Columbia, and three Canadian Provinces. Amtrak operates more than 300 trains each day at speeds up to 150 MPH to more than 500 destinations. Amtrak is the chosen operator for state-supported corridor services in 17 states and four commuter rail agencies (Amtrak 2022a). The closest passenger rail station is the Victorville Amtrak Station, located at 16858 South D Street in Victorville, located approximately 5 miles south of the project site. The Victorville Amtrak Station is part of the Southwest Chief Route, an east-west rail line extending from Los Angeles, California, to Chicago, Illinois (Amtrak 2022b).

Brightline West

Brightline West is a proposed high-speed passenger rail system that would be designed to connect the extended communities of Los Angeles, Palmdale, Cajon Pass, Victor Valley with Las Vegas through 200 to 300 miles of rail. At full operations, approximately 11 million one-way trips are expected to be made between southern California and Las Vegas. The project is expected to break ground in 2023 and could begin serving passengers in 2026. Brightline West has acquired property in the newly annexed area of Apple Valley near Dale Evans Parkway for a high-speed rail station (Town of Apple Valley 2022).

Town of Apple Valley Street System General Plan Exhibit II-6

Adopted August 11, 2009, Town Council Resolution 2009-21
Amended June 12, 2012, Town Council Resolution 2012-25



SOURCE: Terra Nova 2009

FIGURE 3

Circulation Element Map

Apple Valley 143 Project

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Victor Valley Transit Authority

VVTA provides local bus service for the communities of Adelanto, Apple Valley, Hesperia, Victorville, and unincorporated areas of San Bernardino County. VVTA operates five bus routes in Apple Valley, providing bus connections between shopping, the Apple Valley Post Office, schools and colleges, and residential areas. Route 42 shown in Figure 6, Existing Transit Routes, is the closest bus route to the project site, with bus stops near the intersection of Dale Evans Parkway and Johnson Road, approximately 2 ½ miles east of the project site. Route 42 connects Victor Valley College, St. Mary Medical Center, Los Ranchos, the Walmart Distribution Center, the Regional Public Safety Center, and the Juvenile Detention Center. The route operates weekdays, between 6:30 a.m. and 9:00 p.m., Saturday between 7:30 a.m. and 8:00 p.m., and Sunday between 8:30 a.m. and 5:00 p.m. (VVTA 2022)

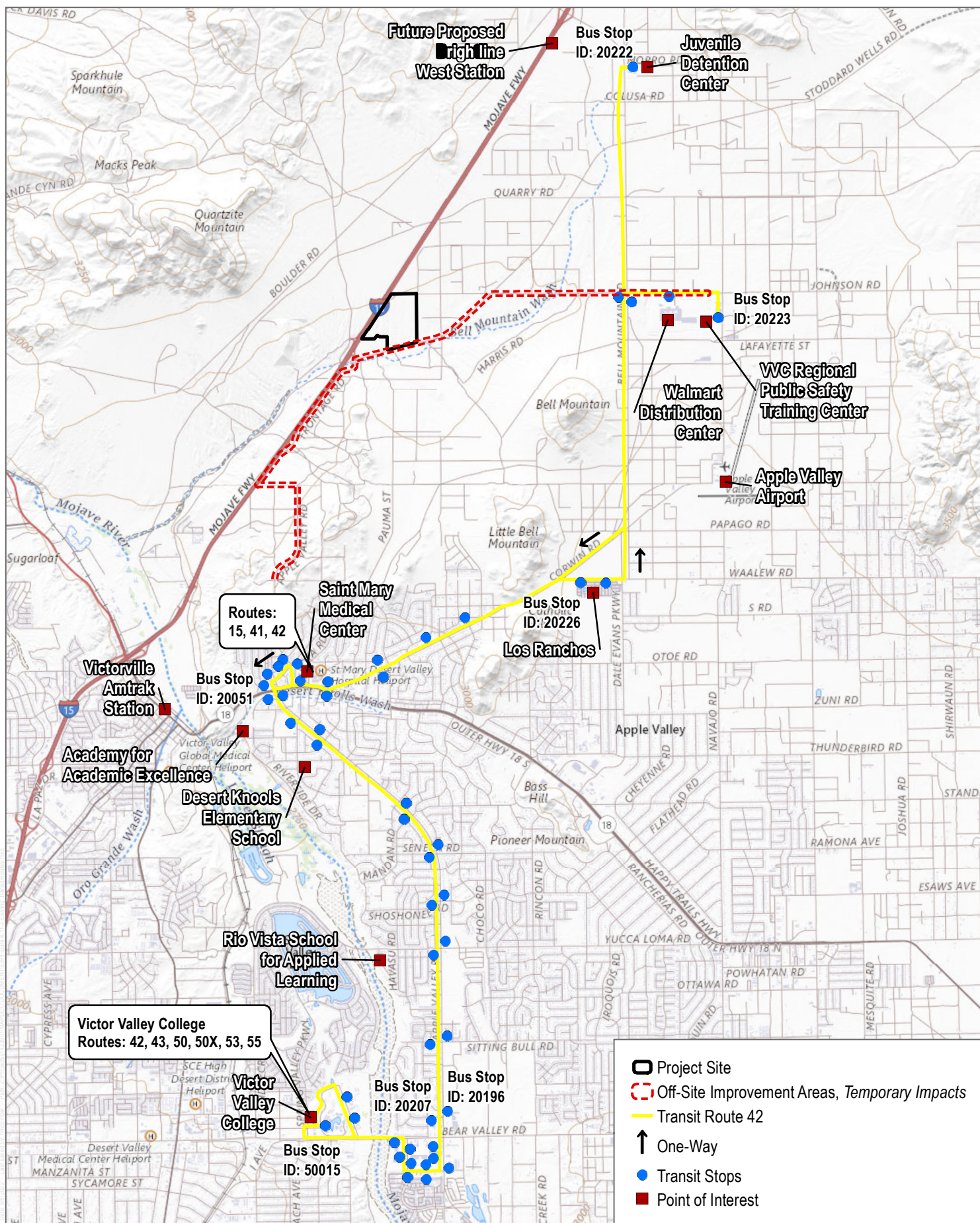
VVTA also offers paratransit services for persons with special needs on any paved street within Apple Valley as long as it is within their service boundaries. The VVTA paratransit services do not travel a fixed route and provide a flexible alternative to the fixed bus routes (VVT 2022).

2.3 Pedestrian and Bicycle Facilities

The project site is located in an undeveloped area of the town with no existing pedestrian or bicycle facilities in the immediate vicinity of the site. The Apple Valley General Plan (Apple Valley 2009) has an adopted Recreation Trail System, which identifies “lifeline” trails for equestrian use and multi-use, as well as recorded bridle trails (for horses). The Town’s Recreational Trail System is presented as Figure 6. A lifeline trail is proposed on Stoddard Wells Road, east of the site, between Johnson Road and Central Road.

The General Plan also identifies proposed bike paths to ensure greater connectivity and access throughout the community, and promote non-motorized modes of travel. The Town’s Bike Paths are presented as Figure 7. A Class II bike lane (on-street painted bike lane) is proposed along Outer Highway I-15 S between Norco Street and Stoddard Wells Road and along Stoddard Wells Road, between the I-15 and Alembic Street. A Class I (separated bicycle path) is proposed along Stoddard Wells Road, between Alembic Street and Central Road, consistent with the lifeline trail identified in the Town’s Recreational Trail System.

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SOURCE: USGS Basemap; San Bernadino County 2021; Victor Valley Transit 2022

FIGURE 5

Existing Transit Facilities
Apple Valley 143 Project

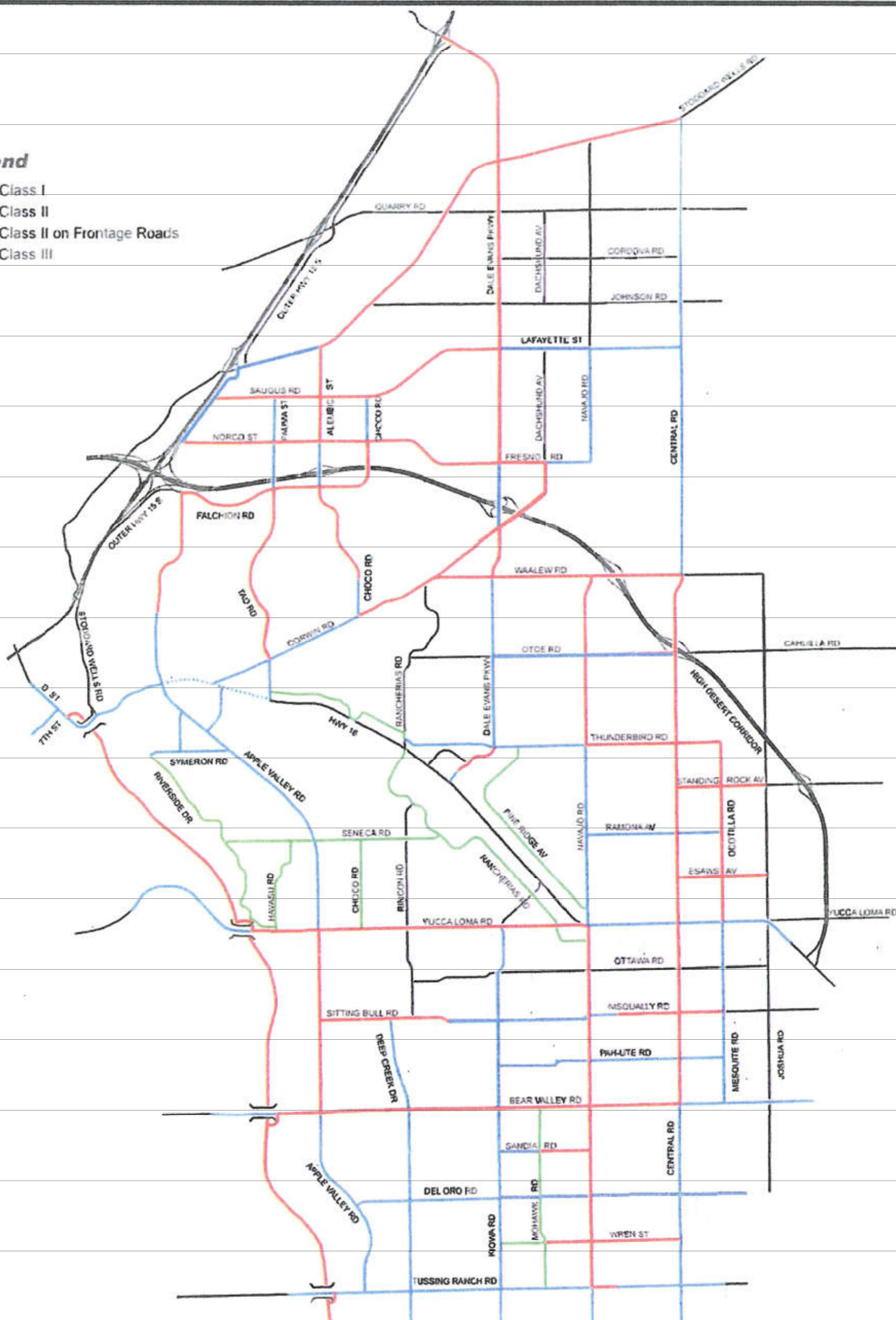
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Legend

- Class I
- Class II
- Class II on Frontage Roads
- Class III



SOURCE: Terra Nova 2009

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FIGURE 7
Bike Paths

Apple Valley 143 Project

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3 Project Traffic

This section documents the trip generation, distribution, and assignment of project traffic in the study area.

3.1 Trip Generation

The Project would include construction of an approximately 2,518,500 square feet industrial/warehouse building with associated office spaces, surface parking, and loading areas. Trip generation estimates for the proposed project are based on daily and AM and PM peak hour trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Handbook, 11th Edition* (2021). Additionally, Passenger car equivalent (PCE) factors were applied to the trip generation estimates to account for truck traffic. The San Bernardino County CMP indicates that projects with high truck percentages should convert project trips to PCE. A 1.5 PCE factor was applied to 2-axle trucks, 2.0 PCE for 3-axle trucks, and a 3.0 PCE factor was applied to 4-axle trucks per the San Bernardino County CMP. As the ITE *Trip Generation Handbook* does not provide a breakdown of truck traffic by axle classification, vehicle mix data and percentages are also applied to the project trip generation estimates from the 2014 SCAQMD *Warehouse Truck Trip Study Data Results and Usage* (SCAQMD Study). Trip generation rates, vehicle splits, and the resulting trip generation estimates for the project are summarized in Table 2.

The layout of the building is most representative of a high-cube warehousing land use. However, as a specific end-user is not in place for the proposed project, a 15% High-Cube Cold Storage Warehousing and 85% High-Cube Fulfillment Center Warehousing split of the total building square footage, is applied to provide a conservative analysis for daily trip generation. Incorporation of the cold-storage rate split, in the event that a small portion of the building is used for cold storage, increases the total trip generation estimate compared to a warehousing-only estimate, the expected sole land use of the facility. As such, the following vehicle-mix and land use assumptions provide a conservative analysis:

- **High-Cube Cold Storage (ITE Code 157)** trip rates were used to obtain trip generation estimates for 15% of the project, totaling approximately 377,775 square feet of the total estimated building area.
- **High-Cube Fulfillment Center Warehouse (ITE Code 155)** trip rates were used to obtain trip generation estimates for 85% of the project, totaling approximately 2,140,725 square feet of the total estimated building area.

As shown in Table 2, the proposed project would generate 4,855 daily trips, 340 AM peak hour trips (242 inbound and 98 outbound), and 365 PM peak hour trips (155 inbound and 210 outbound). Accounting for truck traffic from warehousing and industrial land uses, the proposed project would generate 7,065 daily PCE trips, 492 AM peak hour PCE trips (350 inbound and 142 outbound), and 528 PM peak hour PCE trips (225 inbound and 303 outbound).

Table 2. Apple Valley 143 Project Trip Generation Summary

Land Use	ITE Code	Size/Units	Daily	AM Peak Hour			PM Peak Hour			
				In	Out	Total	In	Out	Total	
Trip Rates ¹										
High-Cube Fulfillment Center Warehouse (non-sort)	155	TSF	1.81	0.12	0.03	0.15	0.06	0.10	0.16	
High-Cube Cold Storage Warehouse	157	TSF	2.12	0.06	0.06	0.11	0.06	0.06	0.12	
Trip Generation										
Building 1	155 (non-sort)	522.750	TSF	946	64	15	78	33	51	84
	157	92.250	TSF	196	5	5	10	6	6	11
Building 1 Total		615.000	TSF	1,142	69	20	89	38	57	95
Building 2	155 (non-sort)	1037.850	TSF	1,879	126	30	156	65	101	166
	157	183.150	TSF	388	10	10	20	11	11	22
Building 2 Total		1221.000	TSF	2,267	136	40	176	76	112	188
Building 3	155 (non-sort)	580.125	TSF	1,230	32	32	64	35	35	70
	157	102.375	TSF	217	6	6	12	6	6	12
Building 3 Total		682.500	TSF	1,447	38	38	76	41	41	82
Apple Valley 143 Project Total		2,518.500	TSF	4,855	242	98	340	155	210	365
Trip Generation Summary (Non-PCE, by Vehicle Classification)										
Building 1										
ITE 155 (non-sort)										
Vehicle Mix ²	% ²									
Passenger Vehicles	72.5%		686	46	11	57	24	37	61	
2-Axle Trucks	4.6%		44	3	1	4	2	2	4	
3-Axle Trucks	5.7%		54	4	0	4	2	3	5	
4+-Axle Trucks	17.2%		163	11	3	13	6	9	14	
ITE 155 (non-sort) Total (Non-PCE)			946	64	14	78	33	51	84	

Table 2. Apple Valley 143 Project Trip Generation Summary

Land Use	ITE Code	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
ITE 157									
Vehicle Mix²	%²								
Passenger Vehicles	55.3%		108	3	3	6	3	3	6
2-Axle Trucks	15.5%		30	1	1	2	1	1	2
3-Axle Trucks	4.9%		10	0	0	0	0	0	1
4+-Axle Trucks	24.3%		48	1	1	2	1	1	3
ITE 157 Total (Non-PCE)			196	5	5	10	6	6	11
Building 1 Total			1,142	69	19	88	38	57	95
Building 2									
ITE 155 (sort)									
Vehicle Mix²	%²								
Passenger Vehicles	72.5%		1,362	91	21	113	47	73	120
2-Axle Trucks	4.6%		86	6	1	7	3	5	8
3-Axle Trucks	5.7%		107	7	2	9	4	6	9
4+-Axle Trucks	17.2%		323	22	5	27	11	17	29
ITE 155 (sort) Total (Non-PCE)			1,879	126	30	156	65	101	166
ITE 157									
Vehicle Mix²	%²								
Passenger Vehicles	55.3%		215	6	6	11	6	6	12
2-Axle Trucks	15.5%		60	2	2	3	2	2	3
3-Axle Trucks	4.9%		19	0	0	1	1	1	1
4+-Axle Trucks	24.3%		94	2	2	5	3	3	5
ITE 157 Total (Non-PCE)			388	10	10	20	11	11	22
Building 2 Total			2,267	136	40	176	76	112	188

Table 2. Apple Valley 143 Project Trip Generation Summary

Land Use	ITE Code	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Building 3									
ITE 155 (non-sort)									
Vehicle Mix²	%²								
Passenger Vehicles	72.5%		892	23	23	46	25	25	50
2-Axle Trucks	4.6%		57	2	2	3	2	2	3
3-Axle Trucks	5.7%		70	2	2	4	2	2	4
4+-Axle Trucks	17.2%		212	5	5	10	6	6	12
Building 3 Total (Non-PCE)			1,230	32	32	64	34	35	70
ITE 157									
Vehicle Mix²	%²								
Passenger Vehicles	55.3%		120	3	3	7	3	3	7
2-Axle Trucks	15.5%		34	1	1	2	1	1	2
3-Axle Trucks	4.9%		11	0	0	1	0	0	1
4+-Axle Trucks	24.3%		53	1	1	3	1	1	3
ITE 157 Total (Non-PCE)			217	6	6	12	6	6	12
Building 3 Total			1,447	38	38	76	40	41	82
Total by Vehicle Classification									
Passenger Vehicles			3,382	172	67	239	108	148	257
Trucks			1,473	71	30	101	46	62	108
Total Trip Generation (Non-PCE)			4,855	243	97	341	155	210	365
Trip Generation Summary (PCE, by Vehicle Classification)									
Building 1									
Vehicle Mix	PCE³								
Passenger Vehicles	1.0		794	49	14	63	27	40	67
2-Axle Trucks	1.5		111	6	2	8	4	5	9

Table 2. Apple Valley 143 Project Trip Generation Summary

Land Use	ITE Code	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
3-Axle Trucks		2.0	127	8	0	10	4	6	10
4+-Axle Trucks		3.0	631	36	11	47	21	30	51
<i>Building 1 Total (PCE)</i>			1,663	99	28	128	55	82	137
Building 2									
Vehicle Mix	PCE³								
Passenger Vehicles		1.0	1,577	97	27	124	53	80	133
2-Axle Trucks		1.5	220	11	4	15	7	10	17
3-Axle Trucks		2.0	252	15	4	20	8	13	21
4+-Axle Trucks		3.0	1,252	72	23	95	41	60	101
<i>Building 2 Total (PCE)</i>			3,301	196	58	255	110	162	271
Building 3									
Vehicle Mix	PCE³								
Passenger Vehicles		1.0	1,012	26	26	52	29	29	58
2-Axle Trucks		1.5	135	4	4	8	4	4	8
3-Axle Trucks		2.0	161	4	4	8	5	5	10
4+-Axle Trucks		3.0	793	21	21	42	22	22	44
<i>Building 3 Total (PCE)</i>			2,101	55	55	110	60	60	120
Total by Vehicle Classification									
Passenger Vehicles			3,382	172	67	239	109	148	257
Trucks (PCE)			3,683	178	75	253	116	155	271
Total Trip Generation (PCE)			7,065	350	142	492	225	303	528

Notes: Rounding discrepancies may occur. TSF = Thousand Square Feet; PCE = Passenger Car Equivalent

¹ Trip rates from the Institute of Transportation Engineers (ITE), *Trip Generation, 11th Edition, 2021*.

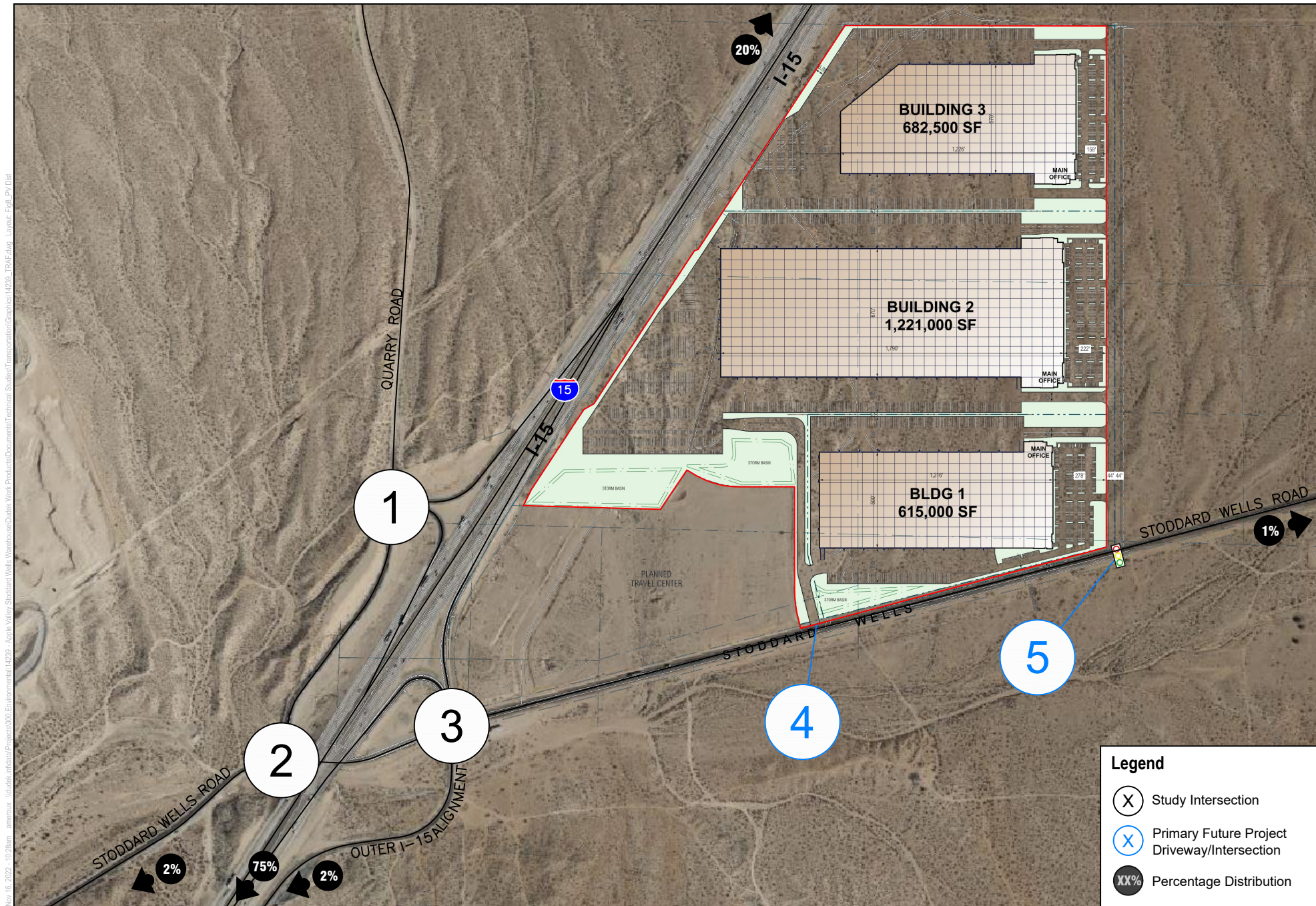
² Vehicle mix and percent from SCAQMD Warehouse Truck Trip Study Data Results and Usage, July 17, 2014.

³ Passenger Car Equivalent (PCE) factors from the San Bernardino County CMP, Appendix B - Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County, 2016.

3.2 Trip Distribution and Assignment

Regional Project trip distribution percentages are based on logical travel paths to and from the project site, consideration of designated truck routes, and the traffic distribution patterns analyzed for a recently approved industrial project adjacent to the project site.

Project trip distribution percentages are shown in Figures 8 and 9, for passenger vehicle and truck trips, respectively. Project trips were assigned to the study area intersections by applying the above-referenced project trip generation estimates to the trip distribution percentages at each study area roadway segment and intersections. The project trip assignments are shown in Figures 10, 11, and 12 for passenger vehicle, truck, and total trip assignments, respectively.



SOURCE: Bing Maps; RGA 2022

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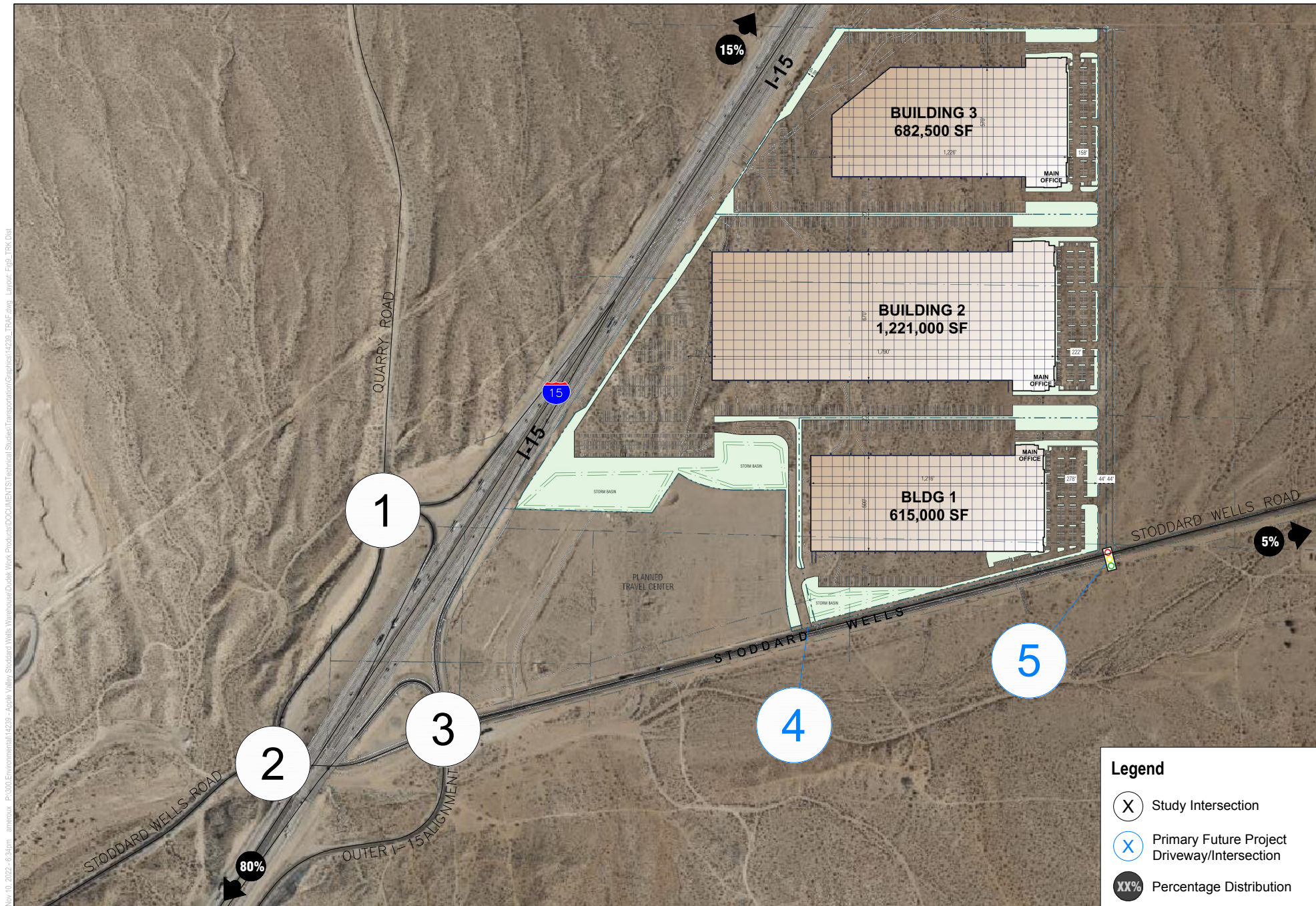


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FIGURE 8
Project Passenger Vehicle Trip Distribution

Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

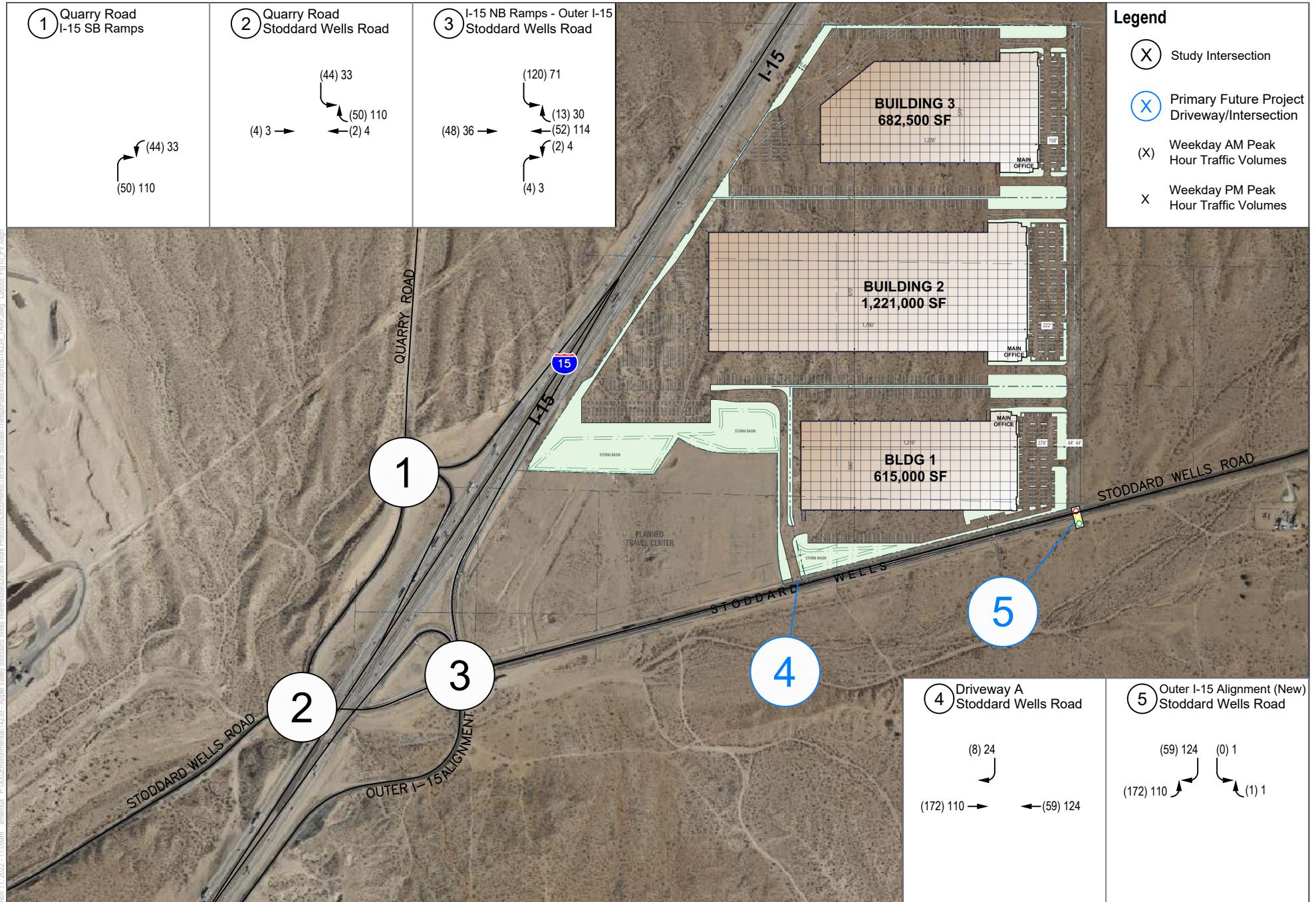
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FIGURE 9
Project Truck Trip Distribution
Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

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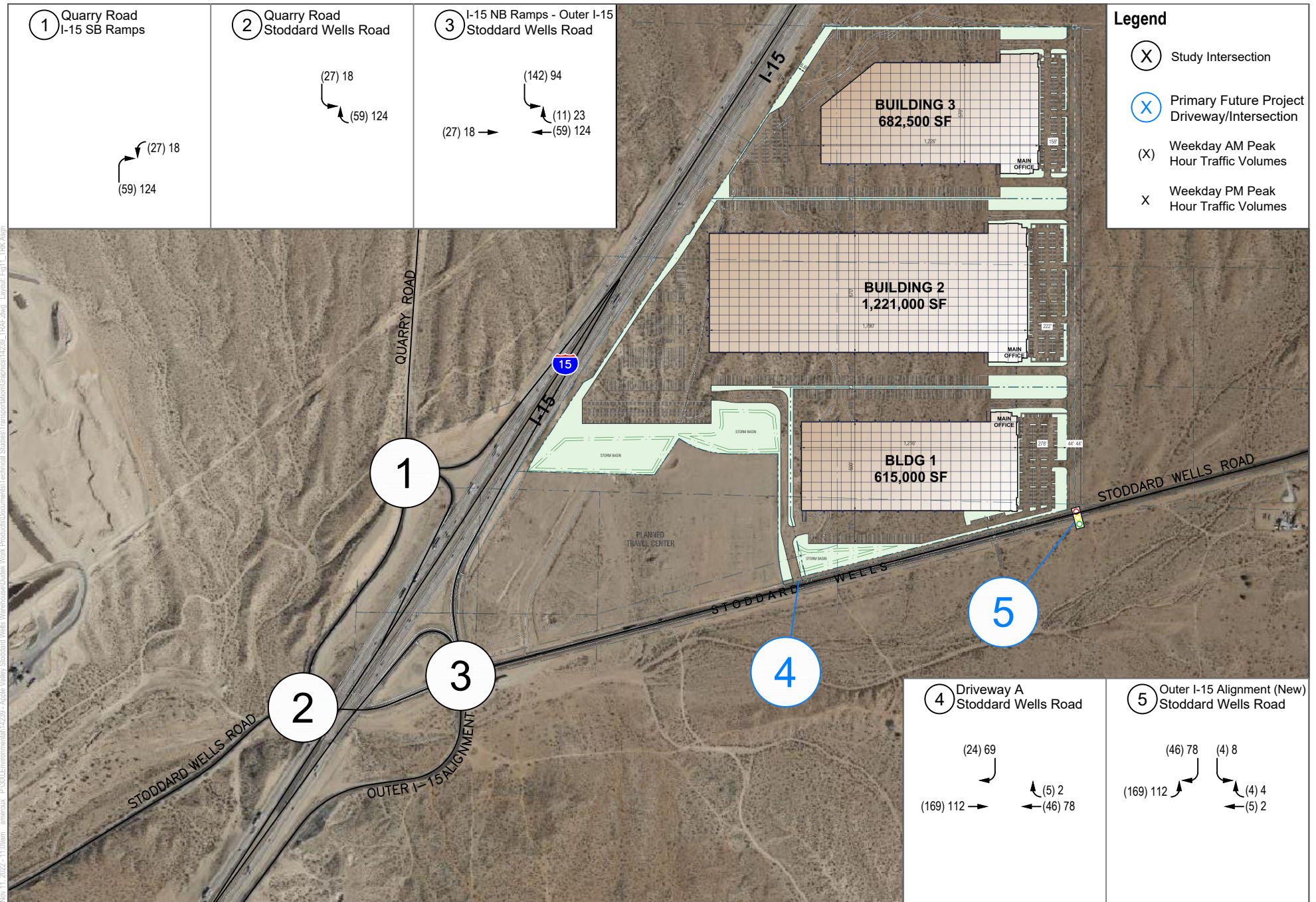


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FIGURE 10
Project Passenger Vehicle Trip Assignment

Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

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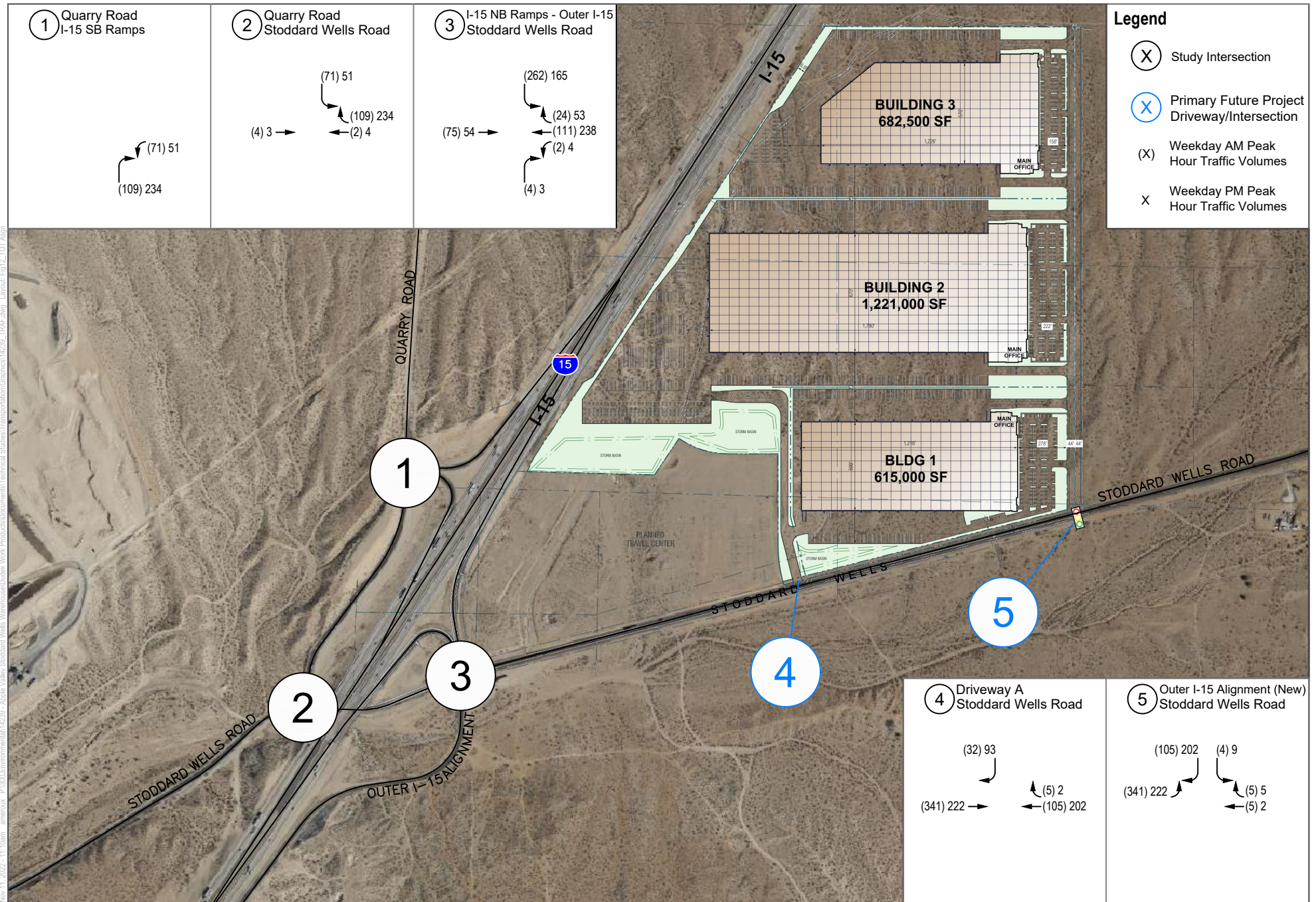


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FIGURE 11
Project Truck Trip Assignment

Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

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FIGURE 12
Total Project Trip Assignment

Apple Valley 143 Project

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4 Level of Service (LOS) Methodology and Thresholds

The Town has vehicle LOS policies to ensure that proposed developments are consistent with the Town's General Plan. Therefore, an LOS analysis has been prepared to evaluate the project's consistency with the Town's General Plan Circulation Element. Because the Town does not have specific transportation impact analysis guidelines, the LOS analysis is based on the San Bernardino County Transportation Impact Study Guidelines (County Guidelines) (July 2019). The study intersection and roadway segments, analysis scenarios, traffic volumes, and LOS methodology and impact criteria are presented in the following section.

4.1 Study Intersections and Roadway Segments

The following intersections were selected for analysis:

- | | |
|--|--|
| 1. Quarry Road/ I-15 Southbound Ramps (unsignalized) | 8. Outer I-15 (New)/Driveway D (unsignalized) |
| 2. Quarry Road/ Stoddard Wells Road (unsignalized) | 9. Outer I-15 (New)/Driveway E (unsignalized) |
| 3. Stoddard Wells Road/ I-15 Northbound Ramps (unsignalized) | 10. Outer I-15 (New)/Driveway F (unsignalized) |
| 4. Driveway A/Stoddard Wells Road (unsignalized) | 11. Outer I-15 (New)/Driveway G (unsignalized) |
| 5. Outer I-15 (New)/Stoddard Wells Road (signalized) | 12. Outer I-15 (New)/Driveway H (unsignalized) |
| 6. Driveway A/Driveway B (unsignalized) | 13. Outer I-15 (New)/Driveway I (unsignalized) |
| 7. Outer I-15 (New)/Driveway C (unsignalized) | 14. Outer I-15 (New)/Driveway J (unsignalized) |
| | 15. Outer I-15 (New)/Driveway K (unsignalized) |
| | 16. Driveway L/Driveway K (unsignalized) |
| | 17. Driveway M/Driveway I (unsignalized) |

In addition, the following road segments were selected for analysis:

1. Stoddard Wells Road, Quarry Road to the I-15 Northbound ramps/Outer I-15
2. Stoddard Wells Road, east of the I-15 Northbound ramps

4.2 Analysis Scenarios

Consistent with the County Guidelines, intersection LOS analyses were prepared for the weekday AM and PM peak hours at the study area intersections and road segments listed above for the following analysis scenarios:

- Existing Condition
- Opening Year (2025) (cumulative projects + ambient growth)
- Opening Year (2025) plus Project (cumulative projects + ambient growth)
- Horizon Year (2040) (General Plan Buildout)
- Horizon Year (2040) plus Project

4.3 Traffic Volumes

Daily, AM and PM peak hour turning movements counts were collected at the study intersections on August 23, 2022. The raw traffic data is provided as Appendix B. Traffic counts were adjusted to passenger car equivalents (PCE) to reflect truck traffic according to the standards set forth in the County's Guidelines, as shown below:

- Light-duty trucks (2-axle): 1.5 PCE
- Medium-duty trucks (3-axle): 2.0 PCE
- Heavy-duty trucks (4+-axle): 3.0 PCE

The 2025 Opening Year condition represents a short-term horizon period (less than 5 years) where the proposed project is constructed and fully occupied. The peak hour traffic forecasts for the Year 2025 have been projected by increasing the traffic volumes by an annual growth rate of 0.5% per year, consistent with recent traffic studies conducted in the area, and adding traffic volumes generated by pending projects. These approved or pending projects are developments in the review process, but not fully approved; or, projects that have been approved, but not fully constructed or occupied. A list of cumulative projects was provided by the Town on October 12, 2022, and further discussed in Section 6.1. The Horizon Year 2040 assumes buildout of the land uses designated in the Town's General Plan. General Plan Year volumes were derived from the San Bernardino Transportation Analysis Model (SBTAM) for the year 2040.

4.4 Analysis Methodology

LOS is commonly used as a qualitative description of intersection operations and roadway segments and is based on the design capacity of the intersection configuration and roadway facility, compared to the volume of traffic using the facility. The Town's intersection evaluation methodology to assess transportation impacts and traffic operating conditions for intersections is based on the latest version of the Highway Capacity Manual (HCM) methodology.

The HCM analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding control delay experienced per vehicle based on the worst turning movement for unsignalized intersections.

Synchro version 11 software was used to determine intersection LOS (for all scenarios), consistent with HCM 6 methodologies. Detailed LOS calculation worksheets (for all scenarios) are included in Appendix B. Table 3 shows the LOS values by delay ranges for unsignalized and signalized intersections under the HCM methodology.

Table 3. Levels of Service for Intersections using HCM Methodology

Level of Service	Unsignalized Intersections Control Delay (in seconds per vehicle)	Signalized Intersections Control Delay (in seconds per vehicle)
A	≤ 10.0	≤ 10.0
B	> 10.0 to < 15.0	> 10.0 to < 20.0
C	> 15.0 to < 25.0	> 20.0 to < 35.0
D	> 25.0 to < 35.0	> 35.0 to < 55.0
E	> 35.0 to < 50.0	> 55.0 to < 80.0
F	> 50.0	> 80.0

Source: HCM 6 (Transportation Research Board 2016).

Additionally, roadway segments are analyzed in the General Plan to determine their operating conditions based on a volume to capacity (V/C) ratio. Table 4 identifies the daily roadway capacities for various roadway classifications as identified in the Town's General Plan Circulation Element.

Table 4. Daily Roadway Capacity Values

Facility	Number of Lanes	Maximum Two-Way Volume (ADT)
		Capacity
Major Divided Parkway (142' ROW) or Arterial (128' ROW)	6D	69,300
Major Road (104' ROW)	4D	40,500
Secondary Road (88' ROW)	4U	25,500
Collector/Local (60-66' ROW) w/Median	2D	17,300
Collector/Local (60'-66' ROW)	2U	12,700

Source: Town of Apple Valley General Plan Community Development Circulation Element (2009)

Notes: XU = # of lanes Undivided; XD = # of lanes Divided

The following daily service V/C thresholds based on the capacities in Table 4 are identified below (Town of Apple Valley 2009):

- 0 to 0.80 = acceptable
- 0.81 – 1.00 = approaching capacity
- >1.01 = potentially exceeds capacity

4.5 General Plan Consistency Requirements

The Town of Apple Valley General Plan Circulation Element Update (Town of Apple Valley 2009) contains the following policies and programs related to transportation compliance and LOS requirements. These policies were used to identify the project's potential impacts on intersections and roadway LOS:

Program 1.A.4. The Town shall require all intersections maintain a minimum of LOS D during both the morning and evening peak hour

Policy 1.H. New development proposals pay their fair share for the improvement of streets within and surrounding their projects on which they have an impact, including roadways, bridges, and traffic signals.

4.5.1 Improvements for Transportation Impacts

At locations where a project is forecast to have deficient operations or significant impacts, needed improvements are identified to offset the projects' impacts. Locations at which unsignalized intersections are operating or forecast to operate at deficient levels of service shall be evaluated for traffic signal warrants based on the California Manual of Traffic Control Devices (CA MUTCD) for peak hour signal warrants unless data shows that other warrants could be applicable.

It is the project's responsibility to implement the needed improvements to the Town's satisfaction either through construction of the improvement(s), fair-share payment to the improvement(s), or payment of Town fees. If improvements are included in a fee program, the cost of implementing the improvements could be credited against fees payable by the project. Improvements required in the TIA and subsequently listed in the conditions of approval shall be completed prior to occupancy.

Fair Share Contribution

As noted above, project improvements may include a combination of fee payments to established programs (e.g., Development Impact Fee program), construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. When off-site improvements are identified with a minor share of responsibility assigned to the proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Improvements included in a defined program and constructed by the development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the Town of Apple Valley's discretion). The project's fair share cost is calculated based on the following formula, which estimates the ratio of Project-related traffic to all new traffic between 2022 and the Horizon Year 2040:

$$\text{Project Fair Share \%} = \text{Project Traffic} / (\text{Horizon Year 2040 plus Project Traffic} - \text{Existing Year 2022 Traffic})$$

The following are regional and local funding mechanisms in place within the Town of Apple Valley.

Regional Funding Mechanisms – Measure “I” Funds

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure “I,” a one-half of one percent sales tax on retail transactions, through the year 2040, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure “I” extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by SBCTA and concluded that each jurisdiction should include a regional fee component in their local programs to meet the Measure “I” requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in September 2017. Revenues collected through these programs are used in tandem with Measure “I” funds to deliver projects identified in the Nexus Study.

While Measure “I” is a self-executing sales tax administered by SBCTA, the funds raised through Measure “I” have funded in the past, and will continue to fund, new transportation facilities in San Bernardino County, including within the Town of Apple Valley.

Town of Apple Valley Development Impact Fee Program

The Town of Apple Valley has created its own local Development Impact Fee (DIF) program to impose and collect fees from new residential, commercial, and industrial development for the purpose of funding roadways and intersections necessary to accommodate Town growth as identified in the Town's General Plan Circulation Element. The Town's DIF includes Transportation Impact Fees.

The project applicant will be subject to the Town's DIF fee program and will pay the requisite Town DIF fees at the rates then in effect. The project applicant's payment of the requisite DIF fees at the rates then in effect pursuant to

the DIF Program will reduce its deficiencies to DIF-funded facilities. After the County's DIF fees are collected, they are placed in a separate interest-bearing account pursuant to the requirements of Government Code § 66000 et seq. The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the Town's Public Works Department.

4.6 Caltrans Transportation Impact Study Guide

As the owner and operator of the State Highway System, Caltrans, implements established state planning priorities in all functional plans, programs, and activities. Caltrans has the responsibility to coordinate and consult with local jurisdictions when proposed local land use planning and development may impact state highway facilities. To comply with SB 743 implementation, the Caltrans Transportation Impact Study Guide (May 2020), replaced the Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). Per the 2020 Transportation Impact Study Guide, Caltrans' primary review focus is VMT, replacing LOS as the metric used in CEQA transportation analyses. Caltrans recommends use of OPR's recommended thresholds and guidance on methods of VMT assessment found in OPR's Technical Advisory (OPR 2018). In addition to VMT, Caltrans has developed an Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance (July 2020) which may request a targeted operational and safety analysis to address a specific geometric or operational issue related to the State Highway System and connections with the State Highway System (Caltrans 2020). To comply with this requirement, an assessment of queuing at the I-15 off-ramps in the project study area has been included in this TIA.

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5 Existing (2022) Conditions Analysis

This section details the existing intersection and roadway segment operations within the study area. Existing traffic controls and geometrics at all study intersections are shown in Figure 13 and existing peak hour traffic volumes are shown in Figure 14. Raw traffic counts are provided in Appendix A and all synchro LOS worksheets are in Appendix B.

5.1 Intersection Operations

Table 5 summarizes the results of the intersection analysis for the AM and PM peak hours for existing conditions. As shown in the table, two of study intersections are currently operating at satisfactory levels of service (LOS D or better) under existing conditions. However, the I-15 NB Ramps – Outer I-15/Stoddard Wells Road/intersection is currently operating at LOS E during the PM peak hour.

Table 5. Existing Weekday Peak Hour Intersection LOS

No.	Intersection	Traffic Control	Existing			
			AM Peak		PM Peak	
			Delay ¹	LOS ²	Delay ¹	LOS ²
1	Quarry Rd./ I-15 SB Ramps	Stop Control	9.0	A	9.7	A
2	Quarry Rd./ Stoddard Wells Rd.	Stop Control	9.2	A	9.2	A
3	I-15 NB Ramps - Outer I-15/ Stoddard Wells Road	Stop Control	12.6	B	40.0	E
4	Driveway A/Stoddard Wells Road	Stop Control	Does Not Exist			
5	Outer I-15 (New)/Stoddard Wells Road	Signalized ³	Does Not Exist			
6	Driveway A/Driveway B	Stop Control	Does Not Exist			
7	Outer I-15 (New)/Driveway C	Stop Control	Does Not Exist			
8	Outer I-15 (New)/Driveway D	Stop Control	Does Not Exist			
9	Outer I-15 (New)/Driveway E	Stop Control	Does Not Exist			
10	Outer I-15 (New)/Driveway F	Stop Control	Does Not Exist			
11	Outer I-15 (New)/Driveway G	Stop Control	Does Not Exist			
12	Outer I-15 (New)/Driveway H	Stop Control	Does Not Exist			
13	Outer I-15 (New)/Driveway I	Stop Control	Does Not Exist			
14	Outer I-15 (New)/Driveway J	Stop Control	Does Not Exist			
15	Outer I-15 (New)/Driveway K	Stop Control	Does Not Exist			
16	Driveway L/Driveway K	Stop Control	Does Not Exist			
17	Driveway M/Driveway I	Stop Control	Does Not Exist			

Source: Appendix B

Notes: All stop-controlled intersections are two-way stop-control (TWSC); **Bold:** Exceeds Town's LOS D threshold

¹ Delay in seconds per vehicle; highest movement delay is reported for TWSC intersections

² LOS = Level of Service

³ Construction of a signalized intersection proposed as a project design feature

5.2 Roadway Segment Operations

Table 6 shows the results of the roadway segment LOS analysis. As shown below, the study area roadway segments are operating at acceptable ADT volume-to-capacity conditions under Existing conditions.

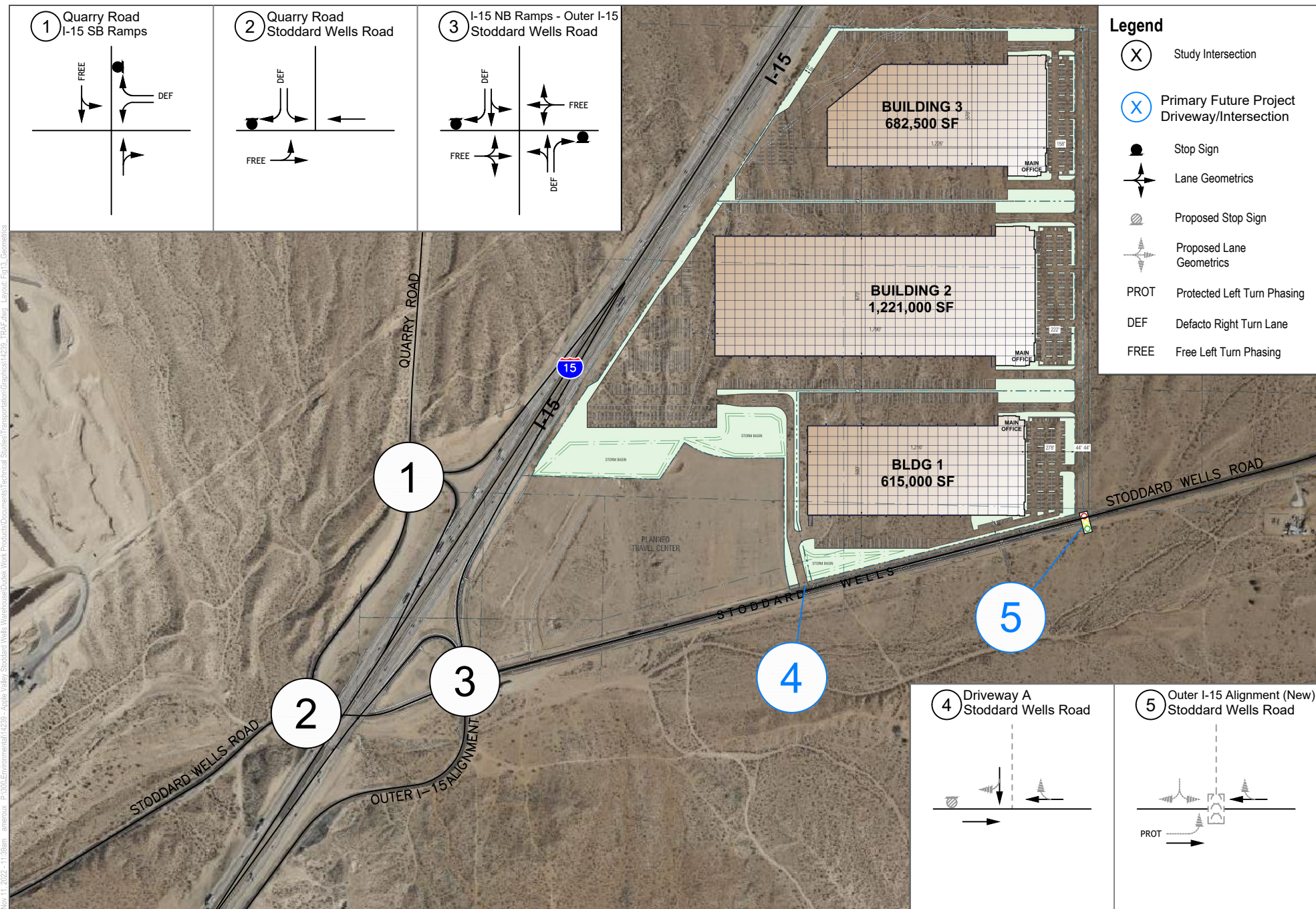
Table 6. Existing ADT Roadway Segment Level of Service

No.	Roadway Segment	Classification	No. of Lanes	Capacity	Existing			Threshold
					ADT ²	V/C	LOS	
1	Stoddard Wells Road, Quarry Road to I-15 NB Ramps/ Outer I-15	Major Divided Arterial	2U	12,700	5,393	0.425	A	Acceptable
2	Stoddard Wells Road, east of I-15 NB Ramps	Major Divided Arterial	2U	12,700	4,296	0.338	A	Acceptable

Notes: XU = # of lanes Undivided; XD = # of lanes Divided; **Bold:** Exceeds "Acceptable" threshold

¹ Capacity determined from Table 4 in Section 4.4, Analysis Methodology

² Volume provided from average daily traffic (ADT) counts conducted on August 23, 2022



SOURCE: Bing Maps; RGA 2022

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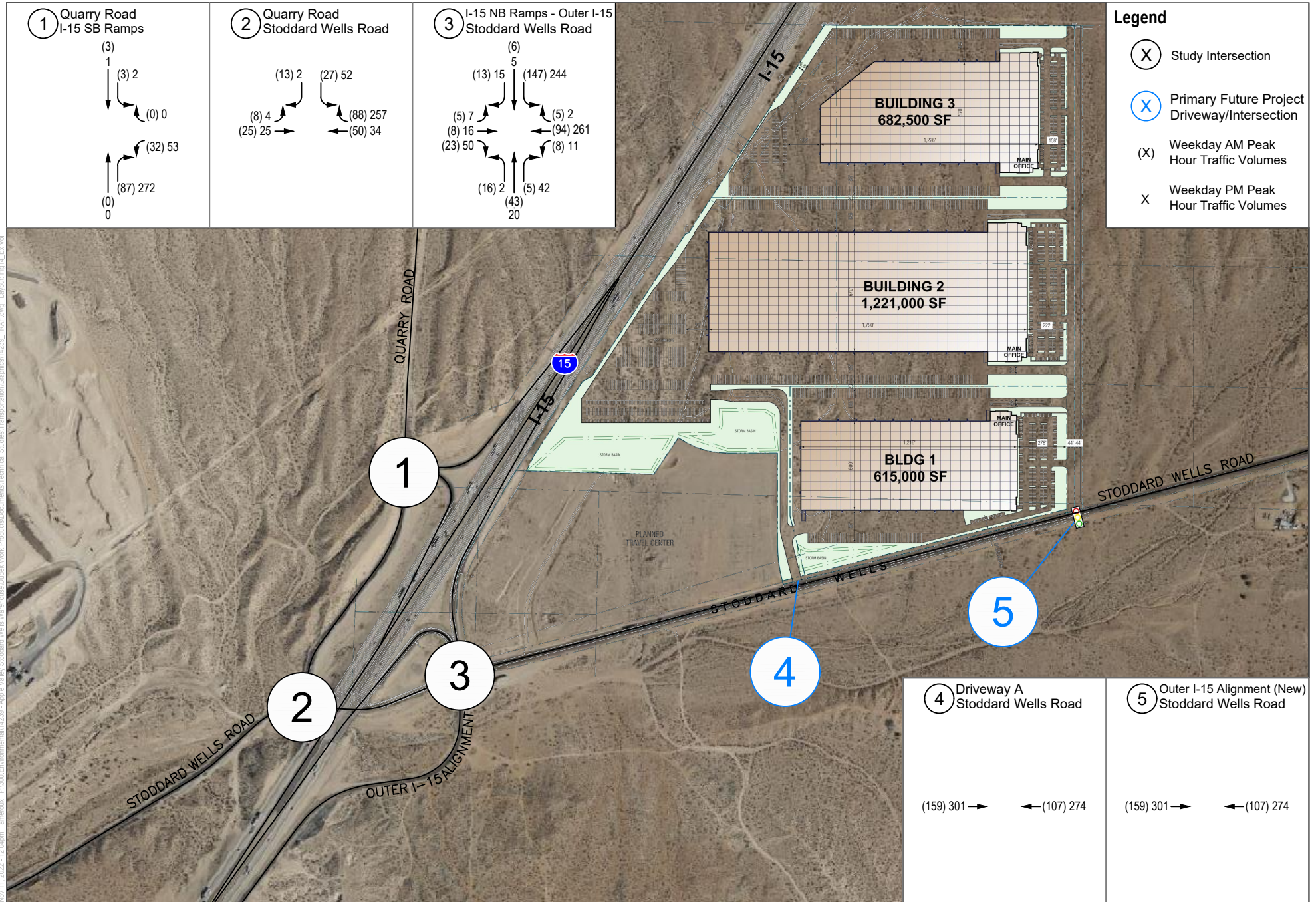


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FIGURE 13
Intersection Controls and Geometrics

Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

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6 Opening Year (2025) Analysis

This section presents the results of a cumulative condition analysis that was conducted for a short-term horizon year (Year 2025) assuming the proposed project is constructed and fully occupied.

6.1 Cumulative Projects

Cumulative projects are projects that are proposed and in the development review process, but not yet fully approved; or projects that have been approved, but not fully constructed or occupied. The following project listed in Table 7 was provided per communication with Town staff and is included in the Opening Year analysis.

Table 7. Cumulative Projects

No	Name	Location	Description
1	Love's Travel Stop	I-15 Ramps and Stoddard Wells Road	Travel Center with 25 fuel positions and 80 overnight RV parking spaces

Source: Email correspondence with the Town of Apple Valley, September 2022

The project trip generation for the cumulative project listed above was obtained from the *Love's Travel Stop Transportation Impact Study (CRA Associates, 2022)*. For consistency with this analysis, PCE factors (2.5 PCE for trucks and 2.0 PCE for RVs) have been applied to this project's trip generation. As shown in Table 8, the Love's Travel Stop is forecast to generate approximately 5,542 daily trips (9,753 PCE), 285 AM peak hour trips (506 PCE), and 325 net new PM peak hour trips (543 PCE). Figure 15 shows the location of the cumulative project and the traffic volumes distributed throughout the network.

Table 8. Cumulative Projects Trip Generation

Land Use		AM Peak Hour			PM Peak Hour		
	Daily	In	Out	Total	In	Out	Total
Trip Generation (Non-PCE)							
Travel Center/ RV Stop (Autos)	2,663	66	66	132	87	86	173
Travel Center/ RV Stop (Trucks)	2,663	68	68	136	65	65	130
Travel Center/ RV Stop (RVs)	216	6	11	17	14	8	22
Total (non-PCE)	5,542	140	145	285	166	159	325
Trip Generation (Non-PCE)							
Travel Center/ RV Stop (Autos)	2,663	66	66	132	87	86	173
Travel Center/ RV Stop (Trucks – 2.5 PCE)	6,658	170	170	340	163	163	326
Travel Center/ RV Stop (RVs – 2.0 PCE)	432	12	22	34	28	16	44
Total (PCE)	9,753	248	258	506	278	265	543

Notes:

¹ Trip generation from *Love's Travel Stop Transportation Impact Study*, CRA Associates, September 2022.

² Cumulative project provided by email correspondence with the Town of Apple Valley, 2022.

6.2 Intersection Operations

The existing intersection configurations have been assumed to be preserved under the Opening Year (2025) conditions. Figure 16 illustrates the Opening Year (2025) (no project) traffic volumes for the peak hour conditions and Figure 17 illustrates the Opening Year (2025) (with project) traffic volumes for the peak hour conditions.

Table 9 summarizes the results of the Opening Year (2025) intersection analysis for the AM and PM peak hours, with and without the project. As shown in the table, all study area intersections are forecast to operate at satisfactory levels of service (LOS D/E or better) under Opening Year (2025) conditions with and without project traffic, except for the following intersection:

- #3 (I-15 NB Ramps - Outer I-15/Stoddard Wells Road) – LOS F in AM and PM peak hours (unsignalized)

A peak hour signal warrant was performed at this intersection and is provided in Appendix E. The warrant was met, and improvements related to signalization are identified in Section 9.

Table 9. Opening Year (2025) Weekday Peak Hour Intersection LOS (with and without Project)

No.	Intersection	Traffic Control	Opening Year (2025)				Opening Year (2025) Plus Project				Change in Delay (Sec.)		Threshold Exceeded ?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS				
1	Quarry Rd./ I-15 SB Ramps	Stop Control	10.3	B	11.6	B	12.0	B	15.0	C	1.7	3.4	No	No
2	Quarry Rd./ Stoddard Wells Rd.	Stop Control	9.8	A	10.1	B	10.4	B	10.6	B	0.6	0.5	No	No
3	Stoddard Wells Rd./ I-15 Northbound Ramps	Stop Control	142.8	F	>300	F	>300	F	>300	F	N/A	N/A	Yes	Yes
4	Driveway A/ Stoddard Wells Road	Stop Control	Does Not Exist				9.7	A	12.9	B	N/A		No	No
5	Outer I-15 (New)/Stoddard Wells Road	Signalized ³	Does Not Exist				11.0	B	12.4	B	N/A		No	No
6	Driveway A/Driveway B	Stop Control	Does Not Exist				8.7	A	9.0	A	N/A		No	No
7	Outer I-15 (New)/Driveway C	Stop Control	Does Not Exist				8.8	A	9.4	A	N/A		No	No
8	Outer I-15 (New)/Driveway D	Stop Control	Does Not Exist				8.8	A	9.2	A	N/A		No	No
9	Outer I-15 (New)/Driveway E	Stop Control	Does Not Exist				8.7	A	9.1	A	N/A		No	No
10	Outer I-15 (New)/Driveway F	Stop Control	Does Not Exist				8.7	A	9.0	A	N/A		No	No
11	Outer I-15 (New)/Driveway G	Stop Control	Does Not Exist				8.6	A	8.8	A	N/A		No	No
12	Outer I-15 (New)/Driveway H	Stop Control	Does Not Exist				8.6	A	8.7	A	N/A		No	No
13	Outer I-15 (New)/Driveway I	Stop Control	Does Not Exist				8.5	A	8.6	A	N/A		No	No
14	Outer I-15 (New)/Driveway J	Stop Control	Does Not Exist				8.4	A	8.5	A	N/A		No	No
15	Outer I-15 (New)/Driveway K	Stop Control	Does Not Exist				8.4	A	8.4	A	N/A		No	No
16	Driveway L/Driveway K	Stop Control	Does Not Exist				8.4	A	8.4	A	N/A		No	No
17	Driveway M/Driveway I	Stop Control	Does Not Exist				8.7	A	8.7	A	N/A		No	No

Source: Attachment B

Notes: All stop-controlled intersections are two-way stop-control (TWSC); **Bold:** Exceeds Town's LOS D threshold¹ Delay in seconds per vehicle; highest movement delay is reported for TWSC intersections² LOS = Level of Service³ Construction of a signalized intersection is a project design feature

6.3 Roadway Segment Operations

Table 10 shows the results of the roadway segment LOS analysis. As shown below, the segment of Stoddard Wells Road, between Quarry Road and I-15, is forecast to operate at acceptable conditions, and the segment of Stoddard Wells Road, east of the I-15 NB Ramps is forecast to operate at conditions where volume is approaching capacity, under Opening Year (2025) conditions. With the addition of project traffic, both segments would operate at conditions potentially exceeding capacity.

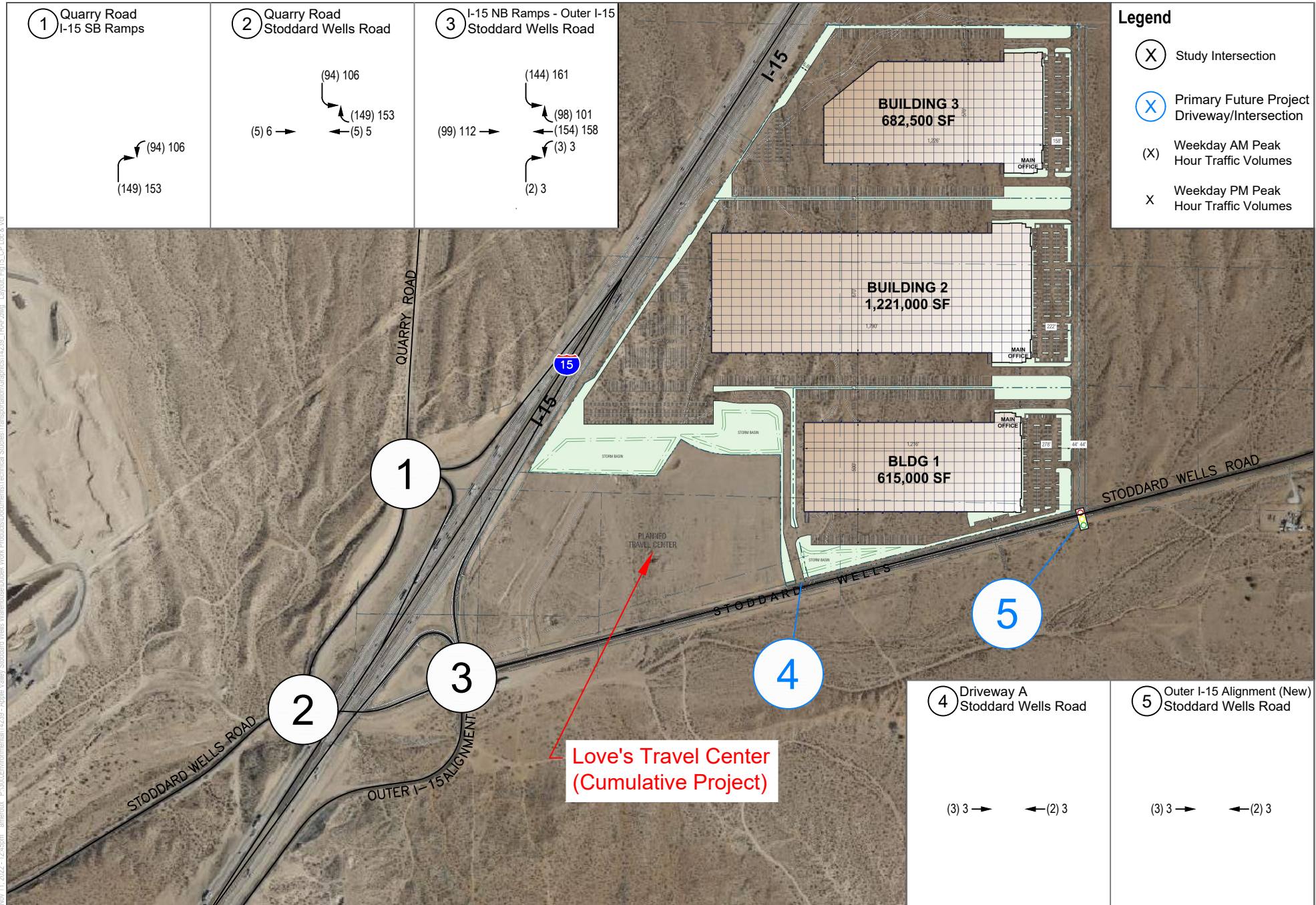
Table 10. Opening Year (2025) ADT Roadway Segment Level of Service

Roadway Segment	Classification	No. of Lanes	Capacity	Opening Year (2025)			Opening Year (2025) Plus Project			Threshold
				ADT ²	V/C	LOS	ADT ²	V/C	LOS	
1 Stoddard Wells Road, Quarry Road to I-15 NB Ramps/Outer I-15	Major Divided Arterial	2U	12,700	9,548	0.752	C	13,161	1.036	F	Potentially Exceeds Capacity
2 Stoddard Wells Road, east of I-15 NB Ramps	Major Divided Arterial	2U	12,700	12,424	0.978	E	19,271	1.517	F	Potentially Exceeds Capacity

Notes: XU = # of lanes Undivided; XD = # of lanes Divided; **Bold:** Exceeds “Acceptable” threshold

¹ Capacity determined from Table 4 in Section 4.4, Analysis Methodology

² Volume provided from average daily traffic (ADT) counts conducted on August 23, 2022



SOURCE: Bing Maps; RGA 2022

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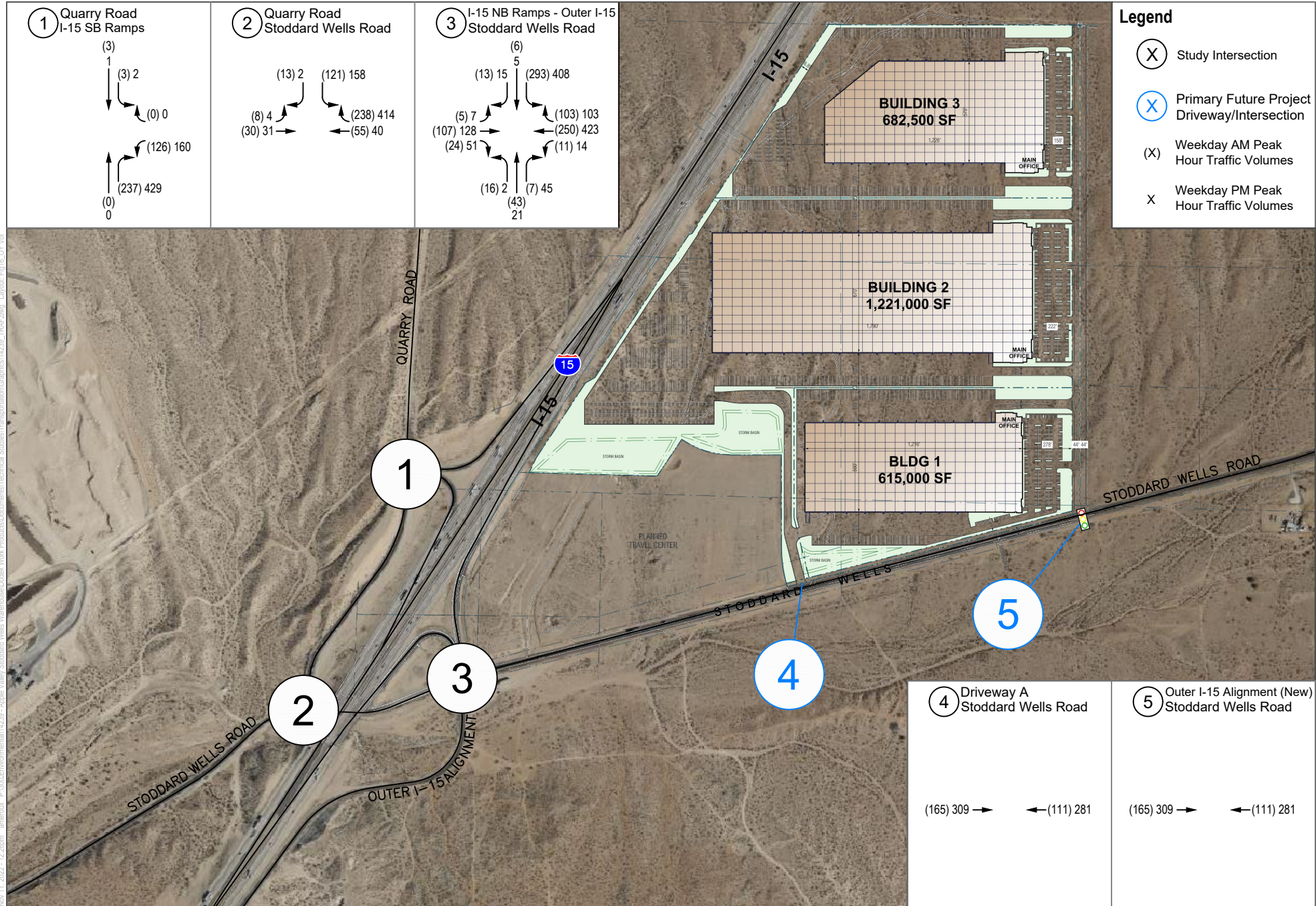


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FIGURE 15
 Cumulative Project Location and Peak Hour Traffic Volumes (PCE)

Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

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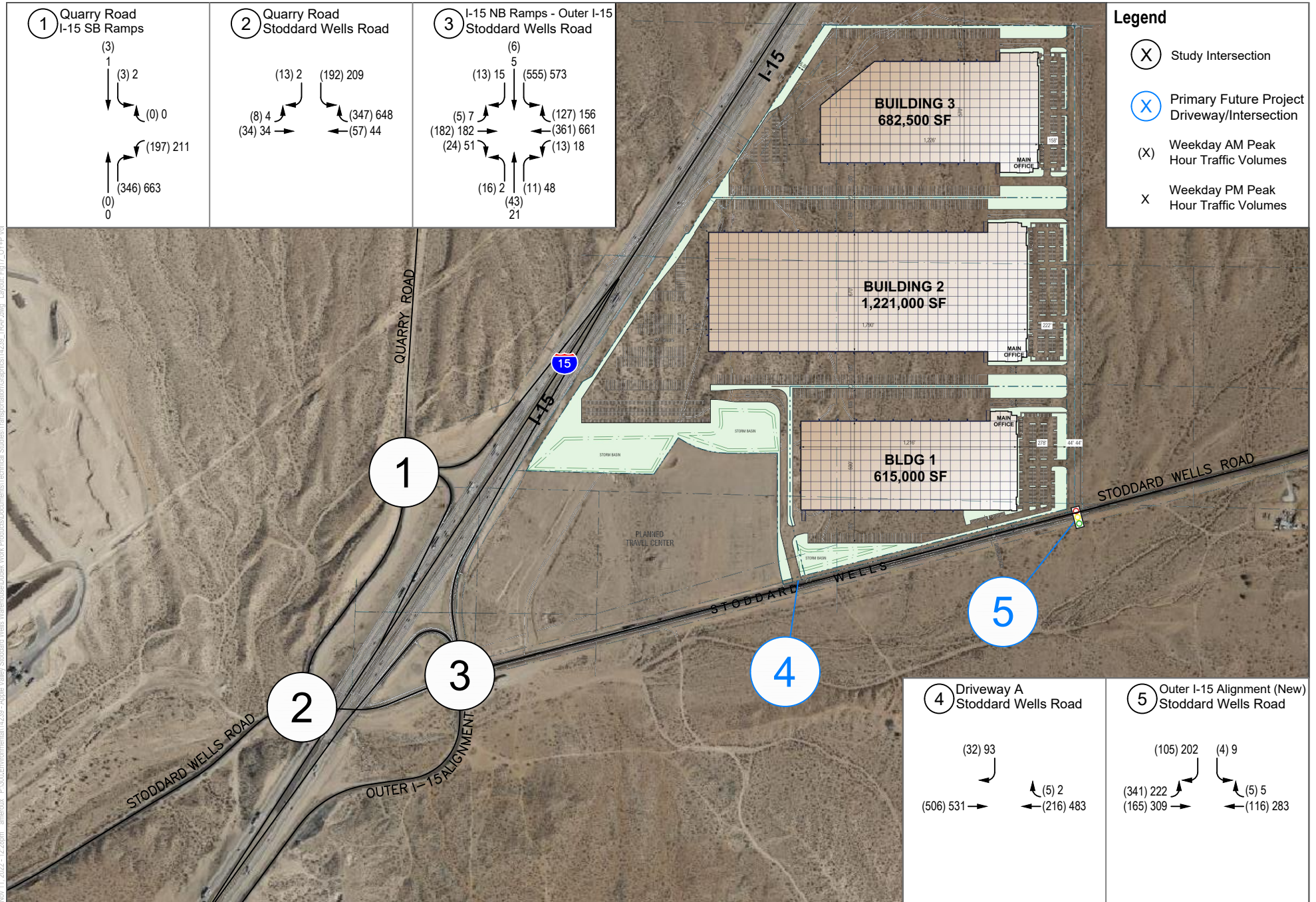


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FIGURE 16
Opening Year (2025) Peak Hour Traffic Volumes (PCE)

Apple Valley 143 Project

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SOURCE: Bing Maps; RGA 2022

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FIGURE 17
Opening Year (2025) plus Project Peak Hour Traffic Volumes (PCE)

Apple Valley 143 Project

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7 Horizon Year (2040)

This section describes conditions within the study area in the Horizon Year 2040.

7.1 Intersection Operations

The existing intersection configurations have been assumed to be preserved under the Horizon Year (2040) conditions. Figure 18 illustrates the Horizon Year (2040) (no project) traffic volumes for the peak hour conditions and Figure 19 illustrates the Horizon Year (2040) (with project) traffic volumes for the peak hour conditions.

Table 11 summarizes the results of the Horizon Year (2040) intersection analysis (with and without the project) for the AM and PM peak hours. As shown in the table, all study area intersections are forecast to operate at satisfactory levels of service (LOS D/E or better) under Horizon Year (2040) conditions with and without project traffic, except for the following intersection:

- #3 (I-15 NB Ramps - Outer I-15/Stoddard Wells Road) – LOS F in AM and PM peak hours (unsignalized)

A peak hour signal warrant was performed at this intersection and is provided in Appendix F. The warrant was met, and improvements related to signalization are identified in Section 9.

Table 11. Horizon Year (2040) Weekday Peak Hour Intersection LOS (with and without Project)

No.	Intersection	Traffic Control	Opening Year (2040)				Horizon Year (2040) Plus Project				Change in Delay (Sec.)		Threshold Exceeded?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS				
1	Quarry Rd./ I-15 SB Ramps	Stop Control	12.6	B	11.9	B	15.3	C	14.7	B	2.7	2.8	No	No
2	Quarry Rd./ Stoddard Wells Rd.	Stop Control	11.0	B	10.4	B	11.9	B	10.9	B	0.9	0.5	No	No
3	Stoddard Wells Rd./ I-15 Northbound Ramps	Stop Control	>300	F	>300	F	>300	F	>300	F	N/A	N/A	Yes	Yes
4	Driveway A/ Stoddard Wells Road	Stop Control	Does Not Exist				14.8	B	22.0	C	N/A		No	No
5	Outer I-15 (New)/ Stoddard Wells Road	Signalized ³	Does Not Exist				15.2	B	19.4	B	N/A		No	No
6	Driveway A/Driveway B	Stop Control	Does Not Exist				8.7	A	9.0	A	N/A		No	No
7	Outer I-15 (New)/Driveway C	Stop Control	Does Not Exist				8.8	A	9.4	A	N/A		No	No
8	Outer I-15 (New)/Driveway D	Stop Control	Does Not Exist				8.8	A	9.2	A	N/A		No	No
9	Outer I-15 (New)/Driveway E	Stop Control	Does Not Exist				8.7	A	9.1	A	N/A		No	No
10	Outer I-15 (New)/Driveway F	Stop Control	Does Not Exist				8.7	A	9.0	A	N/A		No	No
11	Outer I-15 (New)/Driveway G	Stop Control	Does Not Exist				8.6	A	8.8	A	N/A		No	No
12	Outer I-15 (New)/Driveway H	Stop Control	Does Not Exist				8.6	A	8.7	A	N/A		No	No
13	Outer I-15 (New)/Driveway I	Stop Control	Does Not Exist				8.5	A	8.6	A	N/A		No	No
14	Outer I-15 (New)/Driveway J	Stop Control	Does Not Exist				8.4	A	8.5	A	N/A		No	No
15	Outer I-15 (New)/Driveway K	Stop Control	Does Not Exist				8.4	A	8.4	A	N/A		No	No
16	Driveway L/Driveway K	Stop Control	Does Not Exist				8.4	A	8.4	A	N/A		No	No
17	Driveway M/Driveway I	Stop Control	Does Not Exist				8.7	A	8.7	A	N/A		No	No

Source: Attachment B

Notes: All stop-controlled intersections are two-way stop-control (TWSC); **Bold:** Exceeds Town's LOS D threshold¹ Delay in seconds per vehicle; highest movement delay is reported for TWSC intersections² LOS = Level of Service³ Construction of a signalized intersection is a project design feature

7.2 Roadway Segment Operations

Table 12 shows the results of the roadway segment LOS analysis. As shown below, both roadway segments of Stoddard Wells Road are forecast to operate at satisfactory LOS under Horizon Year (2040) conditions, with and without the project. Under the Horizon Year conditions, Stoddard Wells Road is assumed to be widened to 6 lanes, to accommodate growth under the buildout of the General Plan.

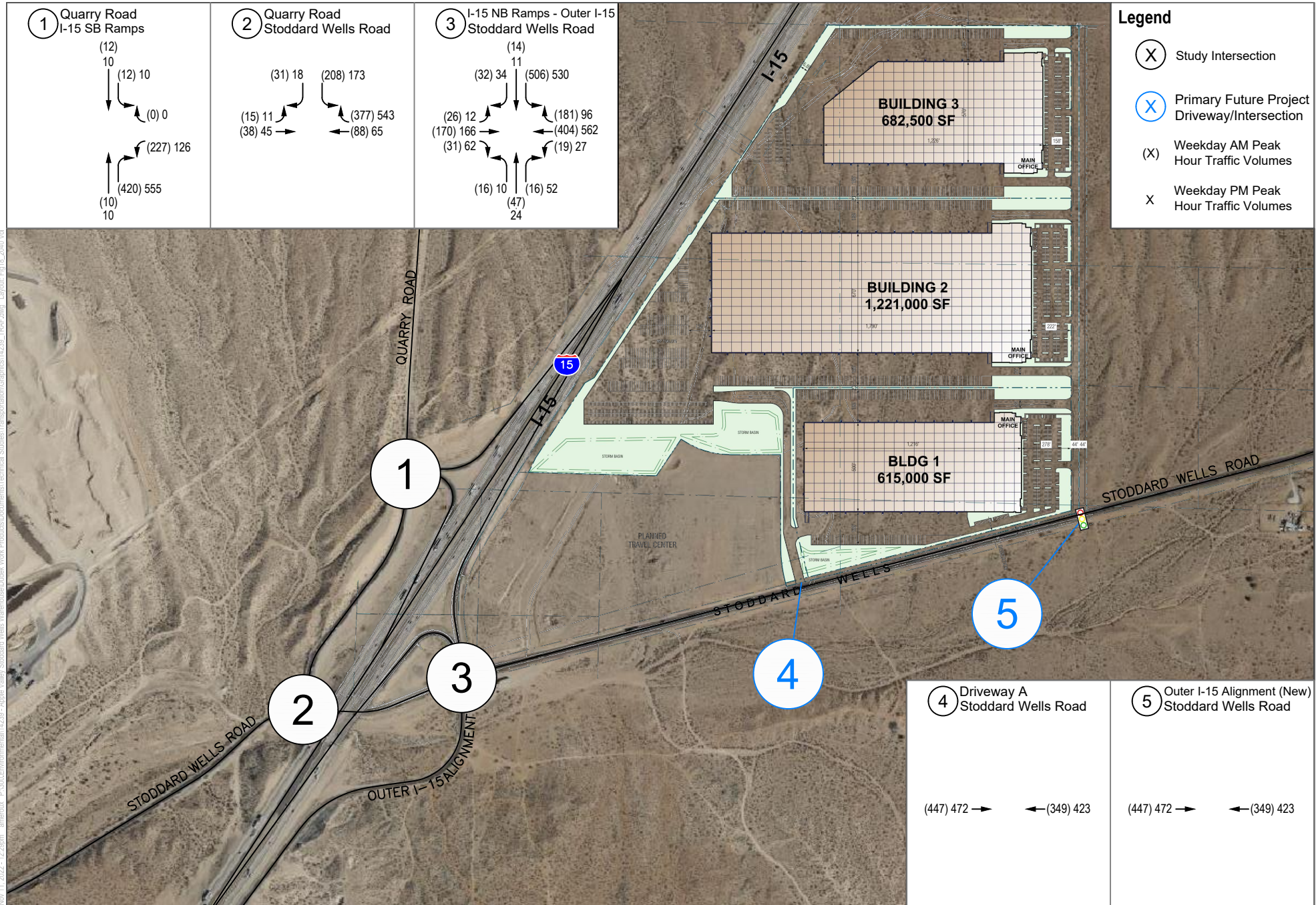
Table 12. Horizon Year (2040) ADT Roadway Segment Level of Service

Roadway Segment		Classification	No. of Lanes	Capacity	Horizon Year (2040)			Horizon Year (2040) Plus Project			Threshold
					ADT ²	V/C	LOS	ADT ²	V/C	LOS	
1	Stoddard Wells Road, Quarry Road to I-15 NB Ramps/Outer I-15	Major Divided Arterial	6D	69,300	14,464	0.209	A	18,077	0.261	A	Acceptable
2	Stoddard Wells Road, east of I-15 NB Ramps	Major Divided Arterial	6D	69,300	26,198	0.378	A	33,045	0.477	A	Acceptable

Notes: XU = # of lanes Undivided; XD = # of lanes Divided; **Bold:** Exceeds LOS D threshold

¹ Capacity determined from Table 4 in Section 4.4, Analysis Methodology

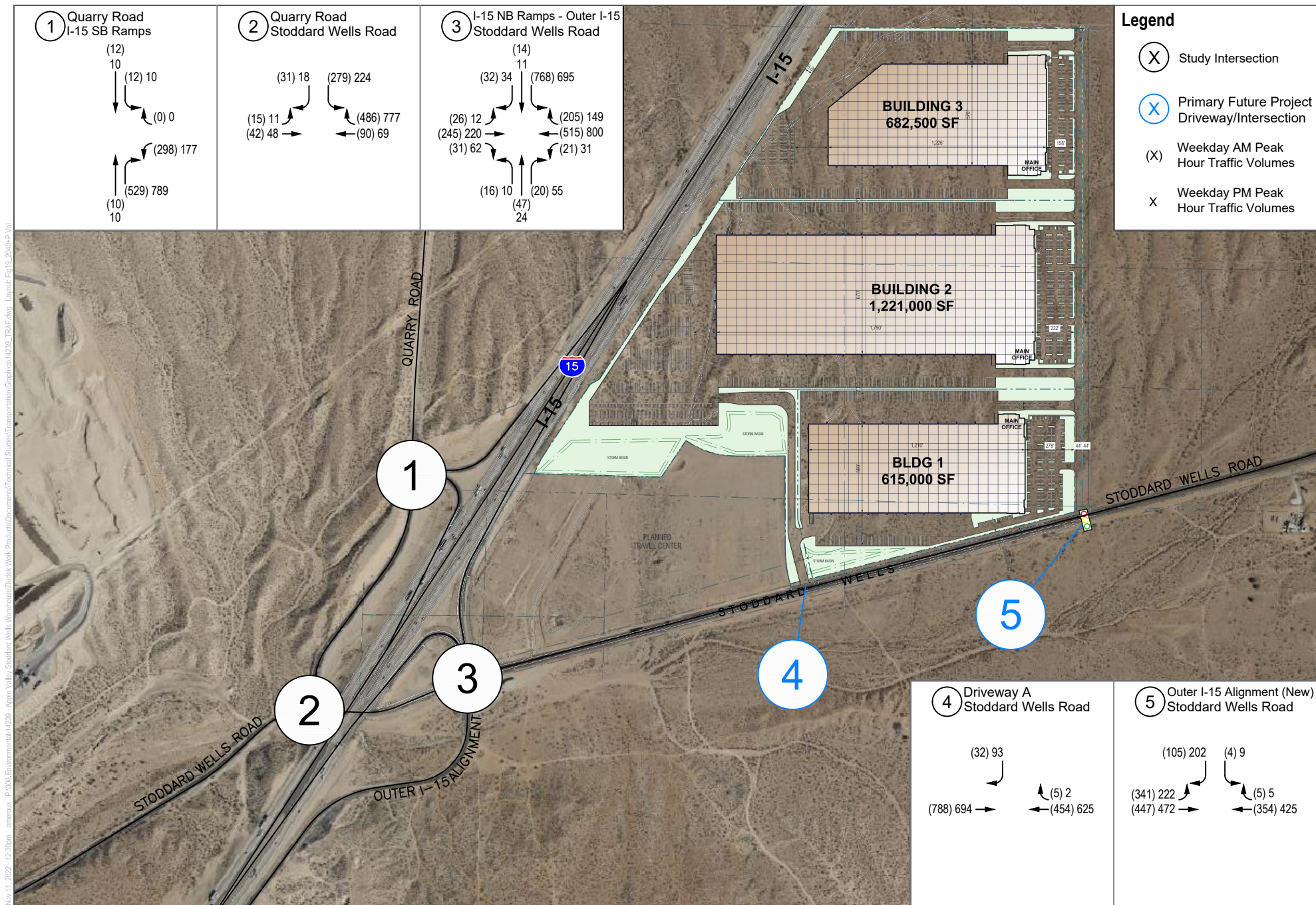
² Volume provided from average daily traffic (ADT) counts conducted on August 23, 2022



SOURCE: Bing Maps; RGA 2022

FIGURE 18
Horizon Year (2040) Peak Hour Traffic Volumes (PCE)

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SOURCE: Bing Maps; RGA 2022

FIGURE 19
Horizon Year (2040) plus Project Peak Hour Traffic Volumes (PCE)

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8 Project Access and Circulation

This section describes the proposed site access and improvements, emergency access, and pedestrian and bicycle access, and presents the results of an off-site queuing analysis conducted for the I-15 ramps at Stoddard Wells Road.

8.1 Project Site Access and Internal Circulation

Access to the Project site would be provided via a new driveway off of Stoddard Wells Road (Intersection #4), a proposed signalized intersection at Outer I-15 Alignment and Stoddard Wells Road (Intersection #5), nine new driveways (Intersections #7 through #15) along a new alignment of Outer I-15 on the eastern boundary of the project site, and via three internal access driveways (Intersections #6, #16, and #17). A summary of the driveway access locations is provided below, as identified in Figure 20 and as reported in the intersection LOS analysis presented in the previous chapters:

- #4: Driveway A via Stoddard Wells Road – right-turn in/out only access; trucks/passenger vehicles
- #5: Outer I-15 Alignment (New)/Stoddard Wells Road – full access; trucks/passenger vehicles
- #6: Driveway B via Driveway A – full access; trucks
- #7: Driveway C via Outer I-15 Alignment (New) – full access; passenger vehicles
- #8: Driveway D via Outer I-15 Alignment (New) – full access; trucks
- #9: Driveway E via Outer I-15 Alignment (New) – full access; trucks
- #10: Driveway F via Outer I-15 Alignment (New) – full access; passenger vehicles
- #11: Driveway G via Outer I-15 Alignment (New) – full access; passenger vehicles
- #12: Driveway H via Outer I-15 Alignment (New) – full access; trucks
- #13: Driveway I via Outer I-15 Alignment (New) – full access; trucks/passenger vehicles
- #14: Driveway J via Outer I-15 Alignment (New) – full access; passenger vehicles
- #15: Driveway K via Outer I-15 Alignment (New) – full access; trucks/passenger vehicles
- #16: Driveway L via Driveway K – full access; passenger vehicles
- #17: Driveway M via Driveway I – full access; passenger vehicles

A queuing analysis was prepared for all project driveways to assess the adequacy of any off-site storage lanes into the project site, as well as the adequacy of driveway throat lengths and space on-site for vehicles to queue without effecting the internal circulation on the project site. Queuing was analyzed utilizing the SimTraffic software, which calculates the 95th percentile (design) queue. Based on the analysis, the proposed project would not result in unacceptable queueing conditions into or out of the project site. All queuing analysis data and SimTraffic queuing worksheets are provided in Appendix C.

Proposed Site Access Improvements

All roadway improvements required as part of the Project, whether located on or off site, would be designed and constructed in accordance with all applicable local, state, and federal roadway standards and practices. The following assumptions are made for all “plus Project” conditions included in this analysis upon review of applicable

improvements noted in Figure 20, Vehicular Circulation and Access Plan, and the extension and build-out of the rights-of-way (ROW) of adjacent streets:

- The project would provide an approximately 20-foot ROW dedication, along with frontage improvements along the northern side of Stoddard Wells Road, adjacent to the project's southern boundary. The current site plan identifies a 64-foot half-width ROW along the extent of Stoddard Wells Road bordering the project site. This half-width is consistent with the Major Divided Arterial classification of this section of Stoddard Wells Road in the Circulation Element (128-foot ROW, with a 64-foot half-width).
- The project would extend Outer I-15 to the north of Stoddard Wells Road, and would shift its proposed alignment in the General Plan Circulation Element from west of the project site to the eastern boundary of the project site. This new alignment of Outer I-15 would be built to a Secondary Road classification, including an 88-foot ROW and 44-foot half width. This alignment has been approved in preliminary discussions with the Town.
- With the extension of the Outer I-15 alignment, the project would provide signalization at its intersection with Stoddard Wells Road. For the purposes of this analysis, all "plus project" conditions are analyzed with signalization at this intersection, along with the following geometrics:
 - Shared SBLR lane
 - WBTR lane
 - EBL lane (200' storage length) w/protected left-turn phasing; EBT lane

As the Project continues through design review, detailed roadway improvements will continue to be developed in coordination with the Town.

Emergency Access

All roadway, intersection and project access improvements would be overseen by the applicable lead agency and their qualified traffic engineers. This approach would ensure compliance with all applicable roadway design requirements. In the event of an emergency all the site access driveways would enable vehicles to enter/exit the project site. All street improvements will be designed with adequate width, turning radius, and grade to facilitate access by Town's firefighting apparatus, and to provide alternative emergency ingress and egress. The site plan would be subject to plan review by the Town's Fire Department to ensure proper access for fire and emergency response is provided and required fire suppression features are included. Therefore, the project's impact due to inadequate emergency access would be less than significant. As such, no hazardous design features would be part of the project's roadway improvements or site access.

FIGURE 20
Vehicular Circulation and Access Plan
Apple Valley 143 Project

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8.2 Off-site Queuing Analysis

A queuing analysis was performed for the southbound I-15 ramps at Quarry Road, as well as the northbound I-15 ramps at Stoddard Wells Road to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially “spill back” onto the I-15 mainline. The queuing analysis was performed for Existing (2022), Opening Year (2025) plus Project, and Horizon Year (2040) plus Project conditions, using Synchro/SimTraffic software, as summarized below. All SimTraffic queueing reports are provided in Appendix C.

Existing (2022) Conditions

As shown in Table 13, Peak-Hour Queuing Summary for Existing Conditions, 95th percentile queuing would be satisfactory and would not extend into mainline lanes.

Opening Year (2025) Plus Project Conditions

As shown in Table 14, Peak-Hour Queuing Summary for Opening Year (2025) Plus Project Conditions, the following intersection approaches are anticipated to experience periodic queuing issues during the peak hours based on the 95th percentile peak hour traffic flows for the Opening Year (2025) plus Project traffic conditions:

- #3: I-15 NB Ramps - Outer I-15/ Stoddard Wells Road: Southbound approaches (AM and PM peak hours)

Horizon Year (2040) Plus Project Conditions

As shown in Table 15, Peak-Hour Queuing Summary for Horizon Year (2040) Plus Project Conditions, the following intersection approaches are anticipated to experience periodic queuing issues during the peak hours based on the 95th percentile peak hour traffic flows for the Horizon Year (2040) plus Project traffic conditions:

- #3: I-15 NB Ramps - Outer I-15/ Stoddard Wells Road: Southbound approaches (AM and PM peak hours)

Improvement measures required to mitigate the project’s LOS and queuing impacts would include fair-share contributions to this intersection. Since the Town does not have jurisdiction over these facilities, these improvements cannot be assumed to be in place prior to project’s occupancy. Therefore, the Project’s impact to increase in hazardous conditions (i.e., queuing) would be significant and unavoidable.

Table 13. Peak-Hour Queuing Summary for Existing Conditions

No.	Intersection	Movement	Available Stacking Distance (Feet)	Existing			
				95 th Percentile Queue (Feet)		Acceptable? ¹	
				AM Peak	PM Peak	AM Peak	PM Peak
1	Quarry Road/I-15 SB Ramps	WBL	1,000	24	26	Yes	Yes
2	Quarry Road/Stoddard Wells Road	SBL ²	1,400	38	40	Yes	Yes
		SBR ³	25	41	16	No	Yes
3	I-15 NB Ramps – Outer I-15/Stoddard Wells Road	SBLT	1,000	68	106	Yes	Yes
		SBR ³	25	47	49	No	No
5	Outer I-15 Alignment (New)/Stoddard Wells Road	EBL	200	Does Not Exist			
		SBLR	1,000	Does Not Exist			

Source: Appendix C

Notes: NBL = northbound left; NBR = northbound right; NBTR = northbound thru-right; SBL = southbound left; SBR = southbound right; WBL = westbound left; WBT = westbound thru; WBR = westbound right; EBL = eastbound left; **Bold:** Exceeds available stacking distance; **Bold:** Exceeds available stacking distance and would extend to freeway mainline/past total approach stacking distance

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

² Available stacking distance measured to the Quarry Road/I-15 SB Off-Ramp intersection.

³ Analyzed as a defacto right-turn pocket; queues may exceed defacto pocket of one vehicle (e.g. 25-feet), but may not exceed total approach stacking distance.

Table 14. Peak-Hour Queuing Summary for Opening Year (2025) Plus Project Conditions

No.	Intersection	Movement	Available Stacking Distance (Feet)	Opening Year (2025)				Opening Year (2025) plus Project			
				95 th Percentile Queue (Feet)		Acceptable? ¹		95 th Percentile Queue (Feet)		Acceptable? ¹	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Quarry Road/I-15 SB Ramps	WBL	1,000	37	43	Yes	Yes	45	50	Yes	Yes
2	Quarry Road/Stoddard Wells Road	SBL ²	1,400	50	56	Yes	Yes	59	63	Yes	Yes
		SBR ³	25	43	21	No	Yes	44	15	No	Yes
3	I-15 NB Ramps – Outer I-15/Stoddard Wells Road	SBLT	1,000	185	1,512	Yes	No	2,509 ⁴	2,270 ⁴	No	No
		SBR ³	25	46	61	No	No	55	47	No	No
5	Outer I-15 Alignment (New)/Stoddard Wells Road	EBL	200	Does Not Exist				114	92	Yes	Yes
		SBLR	1,000	Does Not Exist				45	76	Yes	Yes

Source: Appendix C

Notes: NBL = northbound left; NBR = northbound right; NBTR = northbound thru-right; SBL = southbound left; SBR = southbound right; WBL = westbound left; WBT = westbound thru; WBR = westbound right; EBL = eastbound left; **Bold**: Exceeds available stacking distance; **Bold**: Exceeds available stacking distance and would extend to freeway mainline/past total approach stacking distance

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

² Available stacking distance measured to the Quarry Road/I-15 SB Off-Ramp intersection.

³ Analyzed as a defacto right-turn pocket; queues may exceed defacto pocket of one vehicle (e.g. 25-feet), but may not exceed total approach stacking distance.

⁴ 95th percentile volume exceeds capacity; queue may be longer.

Table 15. Peak-Hour Queuing Summary for Horizon Year (2040) Plus Project Conditions

No.	Intersection	Movement	Available Stacking Distance (Feet)	Horizon Year (2040)				Horizon Year (2040) plus Project			
				95 th Percentile Queue (Feet)		Acceptable? ¹		95 th Percentile Queue (Feet)		Acceptable? ¹	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Quarry Road/I-15 SB Ramps	WBL	1,000	56	40	Yes	Yes	96	80	Yes	Yes
2	Quarry Road/Stoddard Wells Road	SBL ²	1,400	68	55	Yes	Yes	83	67	Yes	Yes
		SBR ³	25	55	44	No	No	59	48	No	No
3	I-15 NB Ramps – Outer I-15/Stoddard Wells Road	SBLT	1,000	2,521 ⁴	2,467 ⁴	No	No	2,072 ⁴	2,101 ⁴	No	No
		SBR ³	25	67	63	No	No	53	51	No	No
5	Outer I-15 Alignment (New)/Stoddard Wells Road	EBL	200	Does Not Exist				103	85	Yes	Yes
		SBLR	1,000	Does Not Exist				54	82	Yes	Yes

Source: Appendix C

Notes: NBL = northbound left; NBR = northbound right; NBTR = northbound thru-right; SBL = southbound left; SBR = southbound right; WBL = westbound left; WBT = westbound thru; WBR = westbound right; EBL = eastbound left; **Bold**: Exceeds available stacking distance; **Bold**: Exceeds available stacking distance and would extend to freeway mainline/past total approach stacking distance

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

² Available stacking distance measured to the Quarry Road/I-15 SB Off-Ramp intersection.

³ Analyzed as a defacto right-turn pocket; queues may exceed defacto pocket of one vehicle (e.g. 25-feet), but may not exceed total approach stacking distance.

⁴ 95th percentile volume exceeds capacity; queue may be longer.

8.3 Pedestrian and Bicycle Access

The Town of Apple Valley's Recreation Trail Map and Bike Paths per the General Plan Circulation Element are presented in Figures 6 and 7, respectively, as discussed in Chapter 2.3.

The Project site is in a minimally developed area of the Town, with limited pedestrian and bicycle facilities provided. Where new development has occurred, sidewalks have been typically constructed along site frontages (e.g., Big LOTS Distribution Center located at the southwest corner of the Navajo Road and Lafayette Street). No pedestrian facilities, including curbs and sidewalks, are present along Stoddard Wells Road as no development currently exists. The Project would construct pedestrian facilities (e.g., curb and gutter) along all project frontages, including Stoddard Wells Road and the new Outer I-15 Alignment. Additionally, as the adjacent areas surrounding the project site continue to become developed, connectivity to other areas of the Town will be realized.

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9 Intersection Control Evaluation

An Intersection Control Evaluation (ICE) screening and traffic analysis was prepared to evaluate and screen the proposed intersection control at the I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection as an improvement measure due to deficient LOS operating and queuing conditions under Opening Year (2025) and Horizon Year (2040) operating conditions.

9.1 Screening Analysis

The primary objective of the screening process is to identify access control concepts that can be dropped from further consideration to avoid the unnecessary expenditure of planning and engineering resources during approval phases of the project.

The traffic volume ranges and thresholds provided in Table 16 are provided in the ICE Process Informational Guide for Traffic Operations Policy Directive #13-02 Intersection Control Evaluation, August 2013 and were utilized to facilitate the screening process. The average daily traffic (ADT) ranges represent the total volume of vehicles entering an intersection. The values are approximate, so if the total ADT is near a threshold, consideration is given to performing an assessment of both strategies.

Table 16. Suggested Intersection Control Strategies by Total ADT Entering

Total ADT Entering	All-Way Stop	Signal	Yield (Roundabout)	Grade Separation
7,500-15,000	X		X	
15,000-25,000	X	X	X	
25,000-80,000		X	X	
>80,000				X

Source: ICE Process Informational Guide for Traffic Operations Policy Directive #13-02 Intersection Control Evaluation, August 2013

Notes: ADT – Average Daily Traffic

ADT counts were conducted at the approaches to this intersection, and PCE-adjusted for consistency with the rest of this analysis. Existing ADT was estimated to be 5,393, the Opening Year (2025) ADT was estimated to be 12,424, and the Horizon Year ADT was estimated to be 26,198. Project traffic is expected to add an additional 6,847 ADT to the respective baseline conditions, for a total of 19,271 ADT under Opening Year (2025) plus Project conditions, and a total of 33,045 ADT under Horizon Year (2040) plus Project conditions.

The I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection is currently configured as a four-leg, stop-controlled intersection, with stop-control at the north-south approaches (e.g., I-15 NB Ramps and Outer I-15). Due to the additional traffic, LOS operations are forecast to be deficient, and queuing is expected to extend to the I-15 mainline under the current stop-control. All-way stop control, signalization, and yield (roundabout) strategies would all be potential options based on the ADT thresholds listed in Table 16 under Opening Year (2025) plus Project conditions. With the addition of project traffic, the estimated ADT would exceed the threshold for recommendation for all-way stop control under Horizon Year (2040) plus Project conditions and would no longer be considered a feasible alternative.

The I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection is currently configured as a four-leg, stop-controlled intersection, with stop-control at the north-south approaches (e.g., I-15 NB Ramps and Outer I-15). Due to the additional traffic, LOS operations are forecast to be deficient, and queuing is expected to extend to the I-15 mainline under the current stop-control. All-way stop control, signalization, and yield (roundabout) strategies would all be potential options based on the ADT thresholds listed in Table 16 under Opening Year (2025) plus Project conditions. With the addition of project traffic, the estimated ADT would exceed the threshold for recommendation for all-way stop control under Horizon Year (2040) plus Project conditions and would no longer be considered a feasible alternative.

Analysis of a roundabout is provided in the section below; however, it must be noted that Stoddard Wells Road is designated to be a Major Divided Arterial (128-foot ROW; 6-lane divided roadway) per the Town of Apple Valley General Plan Circulation Element. Stoddard Wells Road is currently operating as a 2-lane, undivided roadway. Although installation of a roundabout on a 2-lane roadway would be feasible, future traffic volumes are forecast to exceed the capacity of a single lane roundabout. With future planned development, a high volume of conflicting southbound left-turn and east and westbound through movements, and expansion of the roadway from 2-lanes to 6-lanes upon buildout of the General Plan, a roundabout may not be the most appropriate intersection control.

9.2 Traffic Analysis

Based on Table 16, all three control options were evaluated for the I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection.

9.2.1 Opening Year (2025) plus Project

Intersection Operation Assumptions

The assumptions listed below were applied to each control option for the purposes of this analysis.

All-Way-Stop Control (AWSC)

- Addition of stop-signage on the east and westbound approaches
- Reconfigure southbound approach with a southbound left-turn lane and shared left-through-right lane
- Reconfigure northbound approach with a left-turn lane and shared through-right lane
- Reconfigure eastbound approach with a left-turn lane and a shared through-right lane
- Reconfigure westbound approach with a free right-turn channelized lane, a through lane, and a shared through-left lane

Roundabout

- Single-circulating lane, with single lane approaches in all directions

Signalization

- 90-second cycle length during the AM peak hour; 110-second cycle length during the PM peak hour
- Addition of an eastbound left- and westbound left-turn lane with protected phasing
- Addition of a northbound left- and a southbound left-turn lane with protected-permitted phasing
- Addition of a second through lane, with receiving lane on the west leg of the intersection

Intersection Level of Service and Queuing

Table 17 shows the results of the intersection LOS for the new configuration under Opening Year (2025) plus Project conditions. The detailed LOS worksheets are included in Appendix F.

Table 17. Opening Year (2025) plus Project Peak Hour Intersection LOS (w/Improvement Alternatives)

Intersection #3	Opening Year plus Project (with AWSC control)				Opening Year plus Project (with roundabout)				Opening Year plus Project (with signalization)			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²
I-15 NB Ramps - Outer I-15/Stoddard Wells Road	46.5	E	136.3	F	23.1	C	103.7	F	31.6	C	50.6	D

Notes:

¹ Delay in seconds per vehicle

² Level of Service (LOS)

Table 18. Peak-Hour Queuing Summary for Opening Year (2025) plus Project Conditions (w/Improvement Alternatives)

Control	No.	Intersection	Movement (at Off-Ramp)	Available Stacking Distance (Feet)	95 th Percentile Queue (Feet)		Acceptable? ¹	
					AM Peak	PM Peak	AM Peak	PM Peak
AWSC	3	I-15 NB Ramps - Outer I-15/Stoddard Wells Road	SBL ²	1,000	534	821	Yes	Yes
			SBTR	100	122	142	No	No
Roundabout	3	I-15 NB Ramps - Outer I-15/Stoddard Wells Road	SBLTR	1,000	701	2,148	Yes	No
Signal	3	I-15 NB Ramps - Outer I-15/Stoddard Wells Road	SBL ²	1,000	265	552	Yes	Yes
			SBTR	100	55	88	Yes	Yes

Source: Appendix F

Notes: NBL = northbound left; NBR = northbound right; NBTR = northbound thru-right; SBL = southbound left; SBR = southbound right; WBL = westbound left; WBT = westbound thru; WBR = westbound right; EBL = eastbound left; **Bold:** Exceeds available stacking distance; **Bold:** Exceeds available stacking distance and would extend to freeway mainline/past total approach stacking distance

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

² Left-turn pocket assumed to extend to gore point at mainline.

As shown in the tables above, the I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection is forecast to operate at LOS F in the PM peak hour as a stop-controlled intersection or roundabout. Conversion to a signalized intersection under Opening Year (2025) plus Project conditions would improve intersection operations to LOS D or better in the AM and PM peak hours. Signalization would also reduce potentially hazardous conditions that may result from higher volumes of traffic performing left-turning movements across an uncontrolled approach, as well as queuing that could extend past the available storage length within the off-ramp to the freeway mainline.

9.2.2 Horizon Year (2040) plus Project

Intersection Operation Assumptions

The same assumptions analyzed under Opening Year (2025) conditions were utilized in this scenario.

Intersection Level of Service and Queuing

Table 19 shows the results of the intersection LOS for the new configuration under Horizon Year (2040) plus Project conditions. The detailed LOS worksheets are included in Appendix F.

Table 19. Horizon Year (2040) plus Project Peak Hour Intersection LOS (w/Improvement Alternatives)

Intersection #3	Horizon Year plus Project (with AWSC control)				Horizon Year plus Project (with roundabout)				Horizon Year plus Project (with signalization)			
	AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak	
	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²	Delay ¹	LOS ²
I-15 NB Ramps - Outer I-15/Stoddard Wells Road	71.5	F	107.4	F	46.3	E	83.6	F	43.4	D	43.6	D

Notes:

¹ Delay in seconds per vehicle

² Level of Service (LOS)

Table 20. Peak-Hour Queuing Summary for Horizon Year (2040) plus Project Conditions (w/Improvement Alternatives)

Control	No.	Intersection	Movement (at Off-Ramp)	Available Stacking Distance (Feet)	95 th Percentile Queue (Feet)		Acceptable? ¹	
					AM Peak	PM Peak	AM Peak	PM Peak
AWSC	3	I-15 NB Ramps – Outer I-15/Stoddard Wells Road	SBL ²	1,000	2458	1437	No	No
			SBTR	100	126	147	No	No
Roundabout	3	I-15 NB Ramps – Outer I-15/Stoddard Wells Road	SBLTR	1,000	701	2,148	Yes	No
Signal	3	I-15 NB Ramps – Outer I-15/Stoddard Wells Road	SBL ²	1,000	265	552	Yes	Yes
			SBTR	100	55	88	Yes	Yes

Source: Appendix F

Notes: NBL = northbound left; NBR = northbound right; NBTR = northbound thru-right; SBL = southbound left; SBR = southbound right; WBL = westbound left; WBT = westbound thru; WBR = westbound right; EBL = eastbound left; **Bold:** Exceeds available stacking distance; **Bold:** Exceeds available stacking distance and would extend to freeway mainline/past total approach stacking distance

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided.

² Left-turn pocket assumed to extend to gore point at mainline.

As shown in the table, the I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection is forecast to operate at LOS F in both peak hours as a stop-controlled intersection, and LOS F in the PM peak hour as a roundabout. As with Opening Year (2025) plus Project conditions, conversion to a signalized intersection under Horizon Year (2040) plus Project conditions would improve intersection operations to LOS D during both peak hours, and reduce potentially hazardous conditions that may result from higher volumes of traffic performing left-turning movements across an uncontrolled approach, as well as queuing that could extend past the available storage length within the off-ramp to the freeway mainline.

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10 Vehicle Miles Traveled Analysis

On September 27, 2013, Senate Bill (SB) 743 was signed into law, which creates a process to change the way that transportation impacts are analyzed under California Environmental Quality Act (CEQA). SB 743 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. Under the new transportation guidelines, LOS, or vehicle delay, is no longer considered an environmental impact under CEQA. OPR recommended Vehicle Miles Traveled (VMT) as the most appropriate measure of project transportation impacts for land use projects and land use plans. The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018.

In accordance with SB 743, the Town of Apple Valley adopted Resolution No 2021-08 (May 12, 2021), requiring that VMT replace LOS, and other similar measures for determining significant impacts under CEQA. A project-level VMT analysis has been completed for the project following the Town's Resolution. The San Bernardino County Guidelines have also been referenced for further guidance.

10.1 Project Screening

The San Bernardino County Transportation Impact Study Guidelines (July 2019) identifies projects that can be screened from conducting a project-specific VMT analysis. A land use project need only to meet one of the below screening thresholds to result in a less-than- significant impact.

- **Local Serving Development:** Projects which serve the local community and have the potential to reduce VMT should not be required to complete a VMT assessment. These projects include:
 - K-12 schools
 - Local-serving retail less than 50,000 sq. ft.
 - Local parks
 - Day care centers
 - Local serving gas stations
 - Local serving banks
 - Student housing projects
 - Local serving community colleges that are consistent with the assumptions noted in the RTP/SC

The proposed project does include any of the land uses above and therefore does not meet this screening criterion.

- **Projects generating less than 110 daily trips:** If a development project generates 110 or less net daily vehicle trips, further analysis is not required, and a less than significant determination can be made. As previously shown in Table 2, the project would generate 4,855 daily trips and therefore does not meet this screening criterion based on its proposed size and land use.
- **Projects located within a Transit Priority Area (TPA):** Projects located within a TPA as determined by the most recent SCAG RTP/SCS. The Project site is not located within ½ mile of an existing major transit stop, or along a high-quality transit corridor and therefore does not meet this screening criterion.
- **Projects located within a low VMT generating area.** A project that is located in efficient areas of the County will reduce VMT per person/employee and is beneficial to the region. The County's Screening Tool was used to identify whether the project is located in a low VMT area. A parcel within the Project site was selected

and the Screening Tool was run for VMT per service population (e.g., population and employment) measure of VMT. As shown in Table 21 below, the VMT per service population for the project TAZ is 124.7, and the County of San Bernardino VMT per service population is 33.3. Therefore, the TAZ would be 274.44 percent above the County’s threshold, which would not meet the required baseline screening criteria established in the Town’s guidelines. The Project would not qualify as residing in a low VMT area.

Table 21. Summary of Project TAZ VMT

Base Year (2022)	VMT
VMT Per Service Population	
Project TAZ	124.7
Jurisdiction	33.3
% Difference (Project TAZ – Jurisdiction)	+274.44%
Threshold	33.3

Source: SBCTA VMT Screening Tool (Appendix D)

As outlined above, the Project does not meet the screening criteria identified in the County’s guidelines. Therefore, the Project’s potential VMT impact was conducted and is summarized below.

10.2 Impact Thresholds

The Town of Apple Valley adopted Resolution No 2021-08 identifies the following significance thresholds for determining project impacts on VMT.

Project-Generated Impact

A project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

- The baseline project-generated VMT per service population exceeds the Town of Apple Valley General Plan Buildout VMT per service population, or
- The cumulative project-generated VMT per service population exceeds Town of Apple Valley General Plan Buildout VMT per service population

Project Effect on VMT

The project’s effect on VMT would be considered significant if it resulted in either of the following conditions to be satisfied:

- The baseline link-level boundary Town-wide VMT per service population increases under the plus project condition compared to the no project condition, or
- The cumulative link-level boundary Town-wide VMT per service population increases under the plus project condition compared to the no project condition.

10.3 VMT Analysis

The following section summarizes the VMT analysis approach and findings.

VMT Approach

Project VMT has been calculated using the most current version of the SBTAM and includes an analysis of the baseline year 2016, with and without the project. The first model run included the existing land uses for the area with no changes and the second model run was conducted with socio-economic data from the proposed Project. The model scenario outputs produced Project Area VMT per Service Population and Town-wide VMT per Service Population, as shown in Table 22. Roadway (or link-level boundary) VMT was also calculated for all vehicles to estimate the Project's effect on VMT as shown in Table 23. Detailed calculations and model outputs are included in Appendix D.

VMT Per Service Population

The Project generated VMT is defined as the VMT attributed to automobile trips to and from the Project. Based on the Town's thresholds, if a project generated VMT per service population exceeds the Town of Apple Valley General Plan Buildout VMT per service population, the project has a significant impact under CEQA. Table 22 summarizes the findings of this evaluation.

Table 22. Summary VMT Per Service Population With and Without Project

Geographic Area	Total VMT per Service Population		Percent Change	Town of Apple Valley GP Buildout VMT per Service Population Threshold ¹	Percentage Below Threshold	Significant Impact?
	Baseline (Year 2016) without Project	Baseline (Year 2016) with Project				
Project Area	30.57	29.47	-4.0%	33.2	11.23%	No

Note: VMT = vehicle miles traveled; GP = General Plan

Source: SBTAM Model Results; Appendix D

1. Threshold obtained from SBCTA VMT Screening Tool

As shown, the Project Area VMT per Service Population (29.47) does not exceed the Town of Apple Valley General Plan Buildout VMT per Service Population threshold (33.2). Additionally, the development of the Proposed Project decreases the total VMT per Service Population in the project area by 4 percent. This is due to the creation of employment opportunities within the Town of Apple Valley that were not there before implementation of the project. The Proposed Project captures employment that used to go outside of the Town to nearby cities such as Victorville or Barstow. Therefore, based on the Town's thresholds, the Project generated VMT would have a less than significant impact. Furthermore, according to Section 15064.3 "Determining the Significance of Transportation Impacts" of the 2021 CEQA Statute & Guidelines, projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

Project-Effect on VMT

The Project effect on VMT evaluates the change in roadway (or link-level boundary) VMT within the Town of Apple Valley due to the proposed Project. Based on the Town's thresholds, if the link-level boundary VMT per service population increases Town-wide under the plus Project condition compared to the no Project condition, the Project would have a significant impact. Table 23 shows the roadway (or link level) VMT per service population for the Town with and without Project conditions for the baseline conditions.

Table 23. Roadway (or Link-Level Boundary) VMT

Type of VMT and Service Population	Baseline (Year 2016) without Project	Baseline (Year 2016) with Project	Percent Change	Significant Impact?
Town-wide Link-Level VMT	897,067	914,020	1.8%	
Service Population	91,154	93,765	2.8%	
Town-wide Link-Level VMT per Service Population	9.84	9.74	-1.0%	No

Source: SBTAM Model Results; Appendix D

As shown in Table 23, the development of the Proposed Project decreases the Town-wide link-level VMT per Service Population by 1.0 percent, which is consistent with the results of the total VMT per Service Population analysis. Because the Project would not increase the roadway (or link-level boundary) VMT per service population, the Project's effect on VMT would be less than significant.

Cumulative Impacts

Finally, it is important to note that based on the guidance provided in Public Resources Code, § 21083, subd. (b)(2) and CEQA Guidelines, § 15064, subd. (h)(1), "A project's cumulative impacts are based on an assessment of whether the "incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." In the context of VMT, when the VMT threshold is an efficiency-based threshold, the OPR Technical Advisory states, "[a] project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less than-significant project impact would imply a less than significant cumulative impact, and vice versa." (OPR Technical Advisory 2018 at p. 6). This approach is also consistent with our understanding of the SBTAM model, if a project results in a VMT reduction when modeled under baseline conditions, then the project would likely have the same VMT efficiency or better under future conditions. Likewise, if a project results in a VMT increase when modeled under base year conditions, then the project would likely exhibit the same characteristics under future conditions. Therefore, the analyses conducted herein are deemed appropriate and consistent with both the Town of Apple Valley's VMT Guidelines, CEQA Guidelines, and the OPR Technical Advisory.

11 Project Findings, Impacts, and Improvement Measures

Based on the results of the LOS, on- and off-site access, and VMT assessment presented in this TIA, the following summarizes the key findings of the analysis:

- The proposed project would generate 4,855 daily trips, 340 AM peak hour trips (242 inbound and 98 outbound), and 365 PM peak hour trips (155 inbound and 210 outbound). Accounting for truck traffic from warehousing and industrial land uses, the proposed project would generate 7,065 daily PCE trips, 492 AM peak hour PCE trips (350 inbound and 142 outbound), and 528 PM peak hour PCE trips (225 inbound and 303 outbound).
- The study area intersections currently and are forecast to operate at LOS D or better under all analysis scenarios, with the exception of the I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection (#3), which operates at LOS E in the PM peak hour under Existing conditions, and LOS F in both peak hours under all Opening Year (2025) and Horizon Year (2040) scenarios. With signalization and lane modifications, the intersection would operate at LOS E under all Opening Year (2025) and Horizon Year (2040) scenarios. Therefore, the project should pay its fair share towards the cost the intersection improvements.
- The road segment of Stoddard Wells Road, between Quarry Road and I-15 is operating at acceptable conditions under Existing Year conditions and will continue to operate at acceptable conditions under Opening Year (2025) conditions. The segment of Stoddard Wells Road, east of the I-15 NB Ramps is currently operating at acceptable conditions, but is forecast to operate at conditions where volume is approaching capacity, under Opening Year (2025) conditions. With the addition of project traffic, both road segments would operate at conditions potentially exceeding capacity. Under the Horizon Year (2040) conditions, Stoddard Wells Road is assumed to be widened to from two to six lanes, to accommodate growth under the buildout of the General Plan. With additional lanes, the road will operate at acceptable conditions with and without the project traffic. Therefore, the project should pay its fair share towards the cost of the road widening project.
- The proposed project would not result in unacceptable queueing conditions into or out of the project site (Appendix C); however, the following recommendations are made for the two site accesses to Stoddard Wells Road:
 - *Driveway A/Stoddard Wells Road (unsignalized)*: Restrict to right-in/right-out to limit the potential for collisions due to a high percentage of truck traffic making left-turns into or out of this driveway, or operational deficiencies associated with left-turning traffic traveling across multiple travel lanes (e.g., future conditions) or across movements with high opposing through volumes.
 - *Outer I-15 Alignment (New)/Stoddard Wells Road (signalized)*: Add an eastbound left turn lane with protected phasing and at least 125-feet of storage length to accommodate forecasted queues. Additionally, this intersection was analyzed with a shared southbound left-right turn lane (LOS operations and queueing are forecast to be acceptable under these geometrics); however, inclusion of a separate right-turn lane should be considered in final geometric design of the intersection due to the high volume of southbound right-turning traffic exiting the site to I-15.

- The development of the Proposed Project decreases the total VMT per Service Population in the project area by 4 percent and also falls below the Town of Apple Valley General Plan Buildout VMT per Service Population threshold of 33.2. The development of the proposed project also decreases the Town-wide link-level VMT per Service Population by 1.0 percent. Therefore, based on the Town's thresholds, the Project generated VMT and the Project's effect on VMT would be less than significant. Additionally, since the proposed project has a less than significant impact under the Base Year with Project conditions, it is reasonable to state that the proposed project would also have a less than significant impact under the cumulative conditions.

11.1 Recommended Improvement Measures

Table 24 identifies intersection and roadway improvements that would be necessary to bring the I-15 NB Ramps - Outer I-15/Stoddard Wells Road intersection and study roadway segments of Stoddard Wells Road to acceptable operating conditions under Opening Year (2025) and Horizon Year (2040) plus Project conditions. Synchro worksheets are included in Appendix F. In addition, the project is proposing to install a signal at the new Outer I-15 Alignment and Stoddard Wells Road intersection. Table 24 presents the recommended lane geometrics at the intersection, in addition to signalization.

Table 24. Proposed Improvement Measures

No. ¹	Location	Jurisdiction	Satisfactory LOS	Opening Year (2025) plus Project		Horizon Year (2040) plus Project	
				Improvement	LOS or V/C w/Improvements	Improvement	LOS or V/C w/Improvements
3 (Int.)	Stoddard Wells Rd./ I-15 Northbound Ramps	Town of Apple Valley; Caltrans	D ²	#1 Install a traffic signal (CA MUTCD Peak Hour Signal Warrant is met under AM and PM peak hours) and modify approaches as follows: ▪ (1) EBL lane w/protected phasing, and (1) EBTR lane ▪ (1) WBL w/protected phasing, (1) WBT, and (1) WBTR lane ▪ (1) NBL w/protected-permitted phasing, and (1) NBTR lane ▪ (1) SBL w/protected-permitted phasing, and (1) SBTR lane	AM Peak hour: 31.6/C PM Peak Hour: 50.6/D	N/A Same	AM Peak hour: 43.4/D PM Peak Hour: 43.6/D

Table 24. Proposed Improvement Measures

No. ¹	Location	Jurisdiction	Satisfactory LOS	Opening Year (2025) plus Project		Horizon Year (2040) plus Project	
				Improvement	LOS or V/C w/Improvements	Improvement	LOS or V/C w/Improvements
				90-second cycle lengths in AM peak hour; 110-second cycle lengths in PM peak hour			
1 (R.S.)	Stoddard Wells Road, Quarry Road to I-15 NB Ramps/Outer I-15	Town of Apple Valley; County of San Bernardino; Caltrans	D	#2 Add two lanes (one-lane in each direction) of additional capacity, converting this segment from a 2-lane undivided roadway to a 4-lane undivided roadway	New capacity: 25,500 ADT New V/C: 0.516 (LOS A)	#5³ Add two lanes (one-lane in each direction) to meet the Town's General Plan Circulation Element proposed designation for Stoddard Wells Road (Major Divided Arterial – 6-lanes; ROW 128')	New capacity: 25,500 ADT New V/C: 0.209 (LOS A)
2 (R.S.)	Stoddard Wells Road, east of I-15 NB Ramps	Town of Apple Valley	D	#3 Add two lanes (one-lane in each direction) of additional capacity, converting this segment from a 2-lane undivided roadway to a 4-lane undivided roadway	New capacity: 25,500 ADT New V/C: 0.756 (LOS C)	#6³ Add two additional lanes (one-lane in each direction) of capacity to meet the Town's General Plan Circulation Element proposed designation for Stoddard Wells Road (Major Divided Arterial – 6-lanes; ROW 128')	New capacity: 69,300 ADT New V/C: 0.477 (LOS A)

Table 24. Proposed Improvement Measures

No. ¹	Location	Jurisdiction	Satisfactory LOS	Opening Year (2025) plus Project		Horizon Year (2040) plus Project	
				Improvement	LOS or V/C w/Improvements	Improvement	LOS or V/C w/Improvements
5 (Int.)	Outer I-15 Alignment (New)/Stoddard Wells Road	Town of Apple Valley	D	#4⁴ Install a traffic signal w/the following geometrics: ▪ Shared SBLR lane ▪ WBTR lane ▪ EBL lane (200' storage length) w/protected left-turn phasing; EBT lane	—	—	—

Source: Synchro Worksheets w/Improvements (Appendix F)

Notes: NBL= Northbound left; NBT= Northbound through; NBR= Northbound right; SBL= Southbound left; SBT= Southbound through; SBR= Southbound right; WBL= Westbound left; WBT= Westbound through; WBR= Westbound right; EBL= Eastbound left; EBT= Eastbound through; EBR= Eastbound right

¹ Intersection (Int.) or Roadway Segment (R.S.)

² Although LOS D is the threshold for satisfactory LOS per the Town of Apple General Plan Circulation Element, this intersection is part of Caltrans jurisdiction, which no longer provides a specific threshold for LOS operations. LOS D is used as the target for reducing operational delay for the purposes of this analysis; however, recommended improvements are weighed more heavily towards their ability to reduce queuing impacts to the I-15 mainline.

³ Improvements noted are the future roadway classifications for Stoddard Wells Road as designated in the General Plan Circulation Element

⁴ Installation of traffic signal is part of the proposed Project. Reported LOS is same as presented in Chapters 6.2 and 7.1.

11.2 Fair Share Contribution

Table 25 provides a breakdown of the Project's fair share contributions to the above recommended improvements per the methodology provided in Chapter 4.5.1. Table 26 provides a summary of planning-level costs associated with these improvements.

Table 25. Project Fair Share Summary

No. ¹	Location	Study Time Period	Existing Traffic	Project Traffic	Horizon Year (2040) plus Project	Net New Traffic	% Project Traffic of Net New Traffic
3 (Int.)	I-15 NB Ramps - Outer I-15/Stoddard Wells Road	AM	372	478	1,940	1,568	30.49%
		PM	676	517	2,103	1,427	36.22%
1 (R.S.)	Stoddard Wells Road, Quarry Road to I-15 NB Ramps/Outer I-15	Daily	5,393	3,613	18,077	12,684	28.49%
2 (R.S.)	Stoddard Wells Road, Quarry Road to I-15 NB Ramps/Outer I-15	Daily	4,296	6,847	33,045	28,749	23.82%

Notes:

¹ Intersection (Int.) or Roadway Segment (R.S.)

Table 26. Project Fair Share Cost Estimates

No.	Location	Jurisdiction	Opening Year (2025) plus Project	Horizon Year (2040) plus Project	Improvement in Fee Program? ¹	Project Responsibility ²	Cost of Improvement ³	Fair Share % ⁴	Fair Share Cost ⁵
3 (Int.)	I-15 NB Ramps - Outer I-15/Stoddard Wells Road	Town of Apple Valley; Caltrans	Install a traffic signal and reconfigure approaches, modify striping, etc.	Same	No	Fair Share	\$374,322	36.22%	\$135,589
			Add (1) EBL lane w/protected phasing, and retain (1) EBTR lane	Same	No	Fair Share	\$74,864		\$27,118
			Add (1) WBL w/protected phasing,	Same	No	Fair Share	\$74,864		\$27,118
			Add (1) WBT (with addition of a receiving lane, extending at least 400' to the I-15 undercrossing), and retain (1) WBTR lane	Same	—	—	\$224,593		\$81,353
			Add (1) NBL w/protected-permitted phasing, and retain (1) NBTR lane	Same	No	Fair Share	\$74,864		\$27,118
			Add (1) SBL w/protected-permitted phasing; and retain (1) SBTR lane	Same	No	Fair Share	\$74,864		\$27,118
			Total				\$898,374		\$325,414

Table 26. Project Fair Share Cost Estimates

No.	Location	Jurisdiction	Opening Year (2025) plus Project	Horizon Year (2040) plus Project	Improvement in Fee Program? ¹	Project Responsibility ²	Cost of Improvement ³	Fair Share % ⁴	Fair Share Cost ⁵
1 (R.S.)	Stoddard Wells Road, Quarry Road to I-15 NB Ramps/Outer I-15	Town of Apple Valley; County of San Bernardino; Caltrans	Add two lanes (one-lane in each direction) of additional capacity, converting this segment from a 2-lane undivided roadway to a 4-lane undivided roadway	Same + add two additional lanes (one-lane in each direction) of capacity to meet the Town's General Plan Circulation Element proposed designation for Stoddard Wells Road (Major Divided Arterial – 6-lanes; ROW 128')	No	Fair Share	\$898,374	28.49%	\$255,909
Total							\$600,000		\$255,909
2 (R.S.)	Stoddard Wells Road, east of I-15 NB Ramps	Town of Apple Valley	Add two lanes (one-lane in each direction) of additional capacity, converting this	Same + add two additional lanes (one-lane in	No	Fair Share	\$898,374		\$213,965

Table 26. Project Fair Share Cost Estimates

No.	Location	Jurisdiction	Opening Year (2025) plus Project	Horizon Year (2040) plus Project	Improvement in Fee Program? ¹	Project Responsibility ²	Cost of Improvement ³	Fair Share % ⁴	Fair Share Cost ⁵
			segment from a 2-lane undivided roadway to a 4-lane undivided roadway	each direction) of capacity to meet the Town's General Plan Circulation Element proposed designation for Stoddard Wells Road (Major Divided Arterial – 6-lanes; ROW 128')					
Total							\$898,374		\$213,965
5 (Int.)	Stoddard Wells Road, east of I-15 NB Ramps	Town of Apple Valley	Install traffic signal and reconfigure approaches, modify striping, etc.	Same	No	Construct	\$374,322	N/A	\$0
			Construct a shared SBLR lane	Same	No	Construct	\$224,593		\$0
			Add an EBL lane (200' storage length) w/protected left-turn phasing ⁶	Same	No	Construct	\$74,864		\$0

Table 26. Project Fair Share Cost Estimates

No.	Location	Jurisdiction	Opening Year (2025) plus Project	Horizon Year (2040) plus Project	Improvement in Fee Program? ¹	Project Responsibility ²	Cost of Improvement ³	Fair Share % ⁴	Fair Share Cost ⁵
						Total	\$673,780		\$0
						Total Costs for Improvements	\$3,368,901		\$795,288
						Total Fair Share Contribution to the Town of Apple Valley (non-DIF)⁷	\$605,463		
						Total Fair Share Contribution to Caltrans⁸	\$189,825		

Notes:

- ¹ Improvements included in Town of Apple Valley Development Impact Fee (DIF) or the San Bernardino County Transportation Authority (SBCTA) Congestion Management Program (CMP) fee programs.
- ² Identifies either the Project's responsibility to construct an improvement or contribute fair share towards the implementation of improvements.
- ³ Costs have been estimated from the rough order magnitude costs provided in Appendix B - Infrastructure Costs and Financing - of the Town of Apple Valley North Apple Valley Industrial Specific Plan (October 2006). Additionally, all costs were adjusted to 2022 using the Engineering News-Record (ENR) Construction Cost Indices (CCI) from October 2006 and October 2022.
- ⁴ Improvements listed may be eligible for fee credit, per of the Town's Fee discretion. See Table 25, Project Fair Share Summary.
- ⁵ Rough cost estimate, provided for planning-level purposes only.
- ⁶ Installation of traffic signal is part of the proposed Project.
- ⁷ Total project fair share contribution consists of the improvements which are not already included in a fee program for those intersections wholly or partially within the Town of Apple Valley.
- ⁸ Total project fair share contribution consists of the improvements which are not already included in a fee program for those intersections wholly or partially within Caltrans' jurisdiction.

12 References

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Appendix A

Raw Traffic Counts

City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

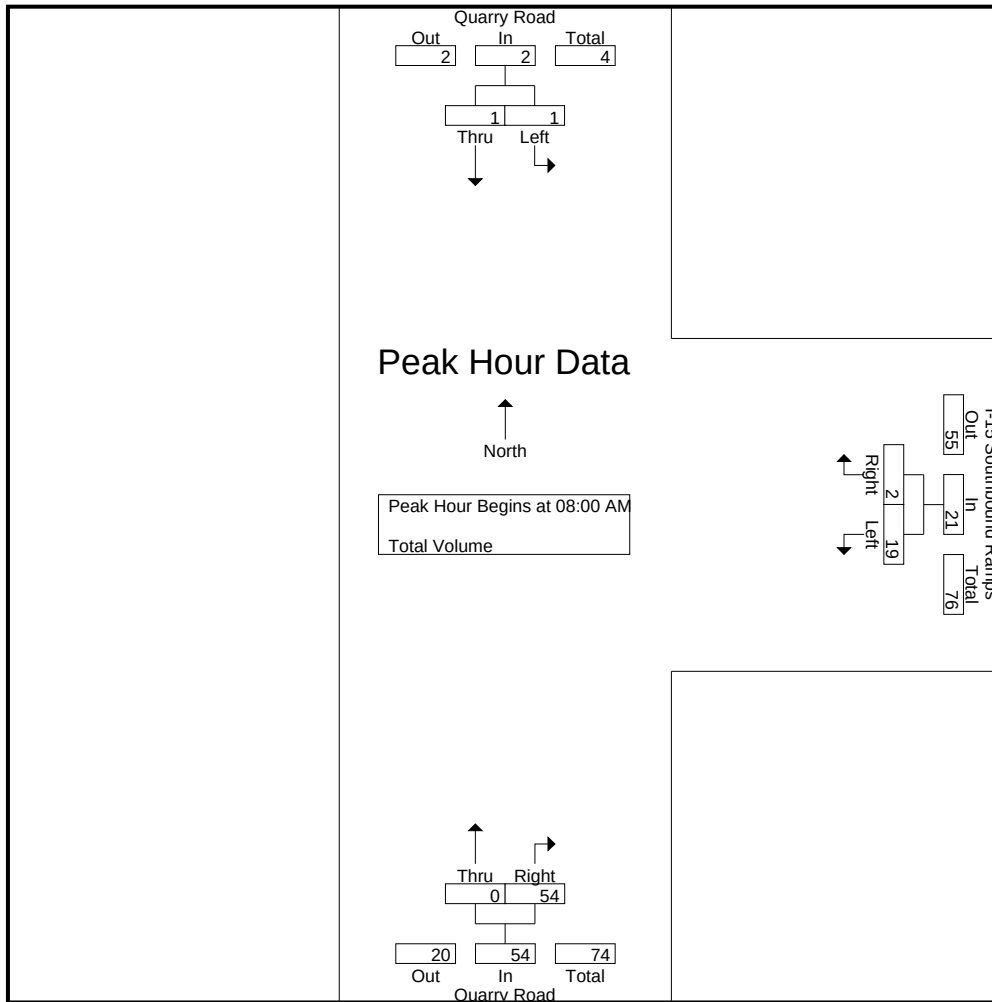
Groups Printed- Total Volume

	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	4	0	4	0	10	10	14
07:15 AM	0	0	0	6	0	6	0	10	10	16
07:30 AM	0	0	0	1	0	1	0	10	10	11
07:45 AM	0	0	0	4	0	4	0	17	17	21
Total	0	0	0	15	0	15	0	47	47	62
08:00 AM	0	0	0	3	0	3	0	9	9	12
08:15 AM	1	0	1	7	1	8	0	15	15	24
08:30 AM	0	1	1	3	0	3	0	13	13	17
08:45 AM	0	0	0	6	1	7	0	17	17	24
Total	1	1	2	19	2	21	0	54	54	77
Grand Total	1	1	2	34	2	36	0	101	101	139
Apprch %	50	50		94.4	5.6		0	100		
Total %	0.7	0.7	1.4	24.5	1.4	25.9	0	72.7	72.7	

	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	3	0	3	0	9	9	12
08:15 AM	1	0	1	7	1	8	0	15	15	24
08:30 AM	0	1	1	3	0	3	0	13	13	17
08:45 AM	0	0	0	6	1	7	0	17	17	24
Total Volume	1	1	2	19	2	21	0	54	54	77
% App. Total	50	50		90.5	9.5		0	100		
PHF	.250	.250	.500	.679	.500	.656	.000	.794	.794	.802

City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	0	0	0	3	0	3	0	17	17
+15 mins.	0	0	0	7	1	8	0	9	9
+30 mins.	1	0	1	3	0	3	0	15	15
+45 mins.	0	1	1	6	1	7	0	13	13
Total Volume	1	1	2	19	2	21	0	54	54
% App. Total	50	50		90.5	9.5		0	100	
PHF	.250	.250	.500	.679	.500	.656	.000	.794	.794

City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

Start Time	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	4	0	4	0	70	70	74
04:15 PM	0	0	0	13	1	14	0	66	66	80
04:30 PM	0	0	0	17	0	17	0	48	48	65
04:45 PM	1	0	1	9	0	9	0	40	40	50
Total	1	0	1	43	1	44	0	224	224	269
05:00 PM	0	0	0	7	1	8	0	32	32	40
05:15 PM	0	0	0	10	1	11	0	31	31	42
05:30 PM	2	0	2	13	1	14	0	14	14	30
05:45 PM	0	0	0	9	0	9	0	8	8	17
Total	2	0	2	39	3	42	0	85	85	129
Grand Total	3	0	3	82	4	86	0	309	309	398
Apprch %	100	0		95.3	4.7		0	100		
Total %	0.8	0	0.8	20.6	1	21.6	0	77.6	77.6	

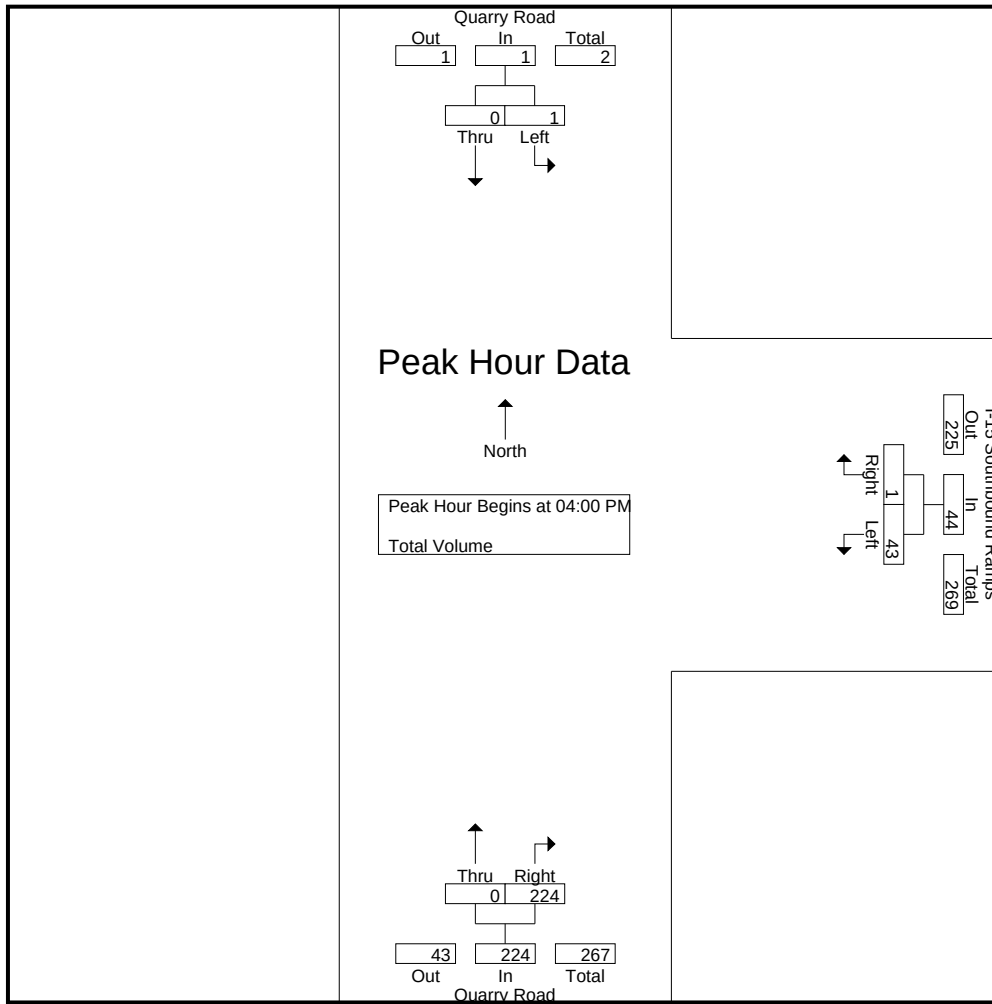
Start Time	Quarry Road Southbound			I-15 Southbound Ramps Westbound			Quarry Road Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	0	0	4	0	4	0	70	70	74
04:15 PM	0	0	0	13	1	14	0	66	66	80
04:30 PM	0	0	0	17	0	17	0	48	48	65
04:45 PM	1	0	1	9	0	9	0	40	40	50
Total Volume	1	0	1	43	1	44	0	224	224	269
% App. Total	100	0		97.7	2.3		0	100		
PHF	.250	.000	.250	.632	.250	.647	.000	.800	.800	.841

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

City of Apple Valley
N/S: Quarry Road
E/W: I-15 Southbound Ramps
Weather: Clear

File Name : 01_APV_Quarry_15S PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:15 PM			04:00 PM		
+0 mins.	1	0	1	13	1	14	0	70	70
+15 mins.	0	0	0	17	0	17	0	66	66
+30 mins.	0	0	0	9	0	9	0	48	48
+45 mins.	2	0	2	7	1	8	0	40	40
Total Volume	3	0	3	46	2	48	0	224	224
% App. Total	100	0		95.8	4.2		0	100	
PHF	.375	.000	.375	.676	.500	.706	.000	.800	.800

City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

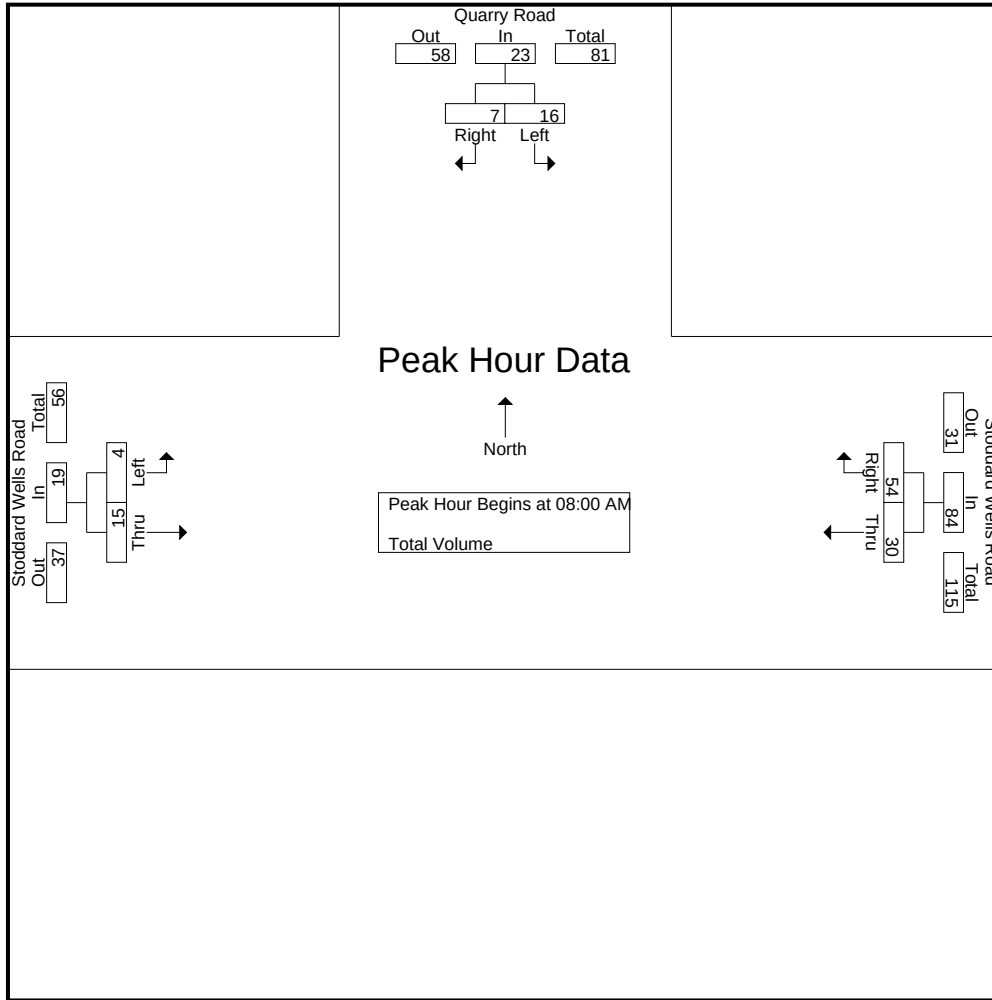
Groups Printed- Total Volume

	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	5	0	5	4	11	15	0	2	2	22
07:15 AM	4	1	5	2	12	14	0	1	1	20
07:30 AM	3	0	3	5	12	17	0	0	0	20
07:45 AM	3	2	5	12	15	27	0	0	0	32
Total	15	3	18	23	50	73	0	3	3	94
08:00 AM	2	3	5	10	10	20	0	1	1	26
08:15 AM	6	2	8	6	17	23	1	3	4	35
08:30 AM	3	1	4	8	12	20	0	7	7	31
08:45 AM	5	1	6	6	15	21	3	4	7	34
Total	16	7	23	30	54	84	4	15	19	126
Grand Total	31	10	41	53	104	157	4	18	22	220
Apprch %	75.6	24.4		33.8	66.2		18.2	81.8		
Total %	14.1	4.5	18.6	24.1	47.3	71.4	1.8	8.2	10	

	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	3	5	10	10	20	0	1	1	26
08:15 AM	6	2	8	6	17	23	1	3	4	35
08:30 AM	3	1	4	8	12	20	0	7	7	31
08:45 AM	5	1	6	6	15	21	3	4	7	34
Total Volume	16	7	23	30	54	84	4	15	19	126
% App. Total	69.6	30.4		35.7	64.3		21.1	78.9		
PHF	.667	.583	.719	.750	.794	.913	.333	.536	.679	.900

City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			08:00 AM		
+0 mins.	2	3	5	12	15	27	0	1	1
+15 mins.	6	2	8	10	10	20	1	3	4
+30 mins.	3	1	4	6	17	23	0	7	7
+45 mins.	5	1	6	8	12	20	3	4	7
Total Volume	16	7	23	36	54	90	4	15	19
% App. Total	69.6	30.4		40	60		21.1	78.9	
PHF	.667	.583	.719	.750	.794	.833	.333	.536	.679

City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

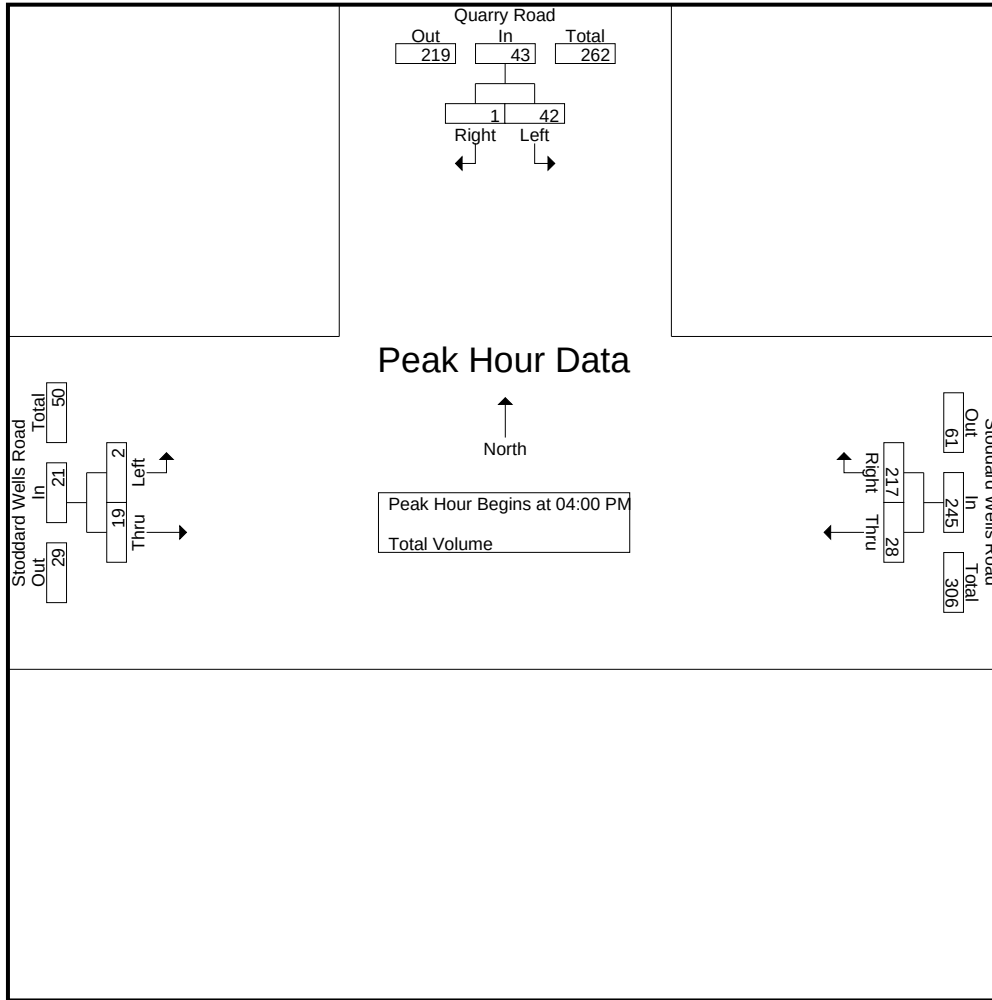
Groups Printed- Total Volume

	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
04:00 PM	3	1	4	5	67	72	0	2	2	78
04:15 PM	12	0	12	9	65	74	0	8	8	94
04:30 PM	19	0	19	7	47	54	1	4	5	78
04:45 PM	8	0	8	7	38	45	1	5	6	59
Total	42	1	43	28	217	245	2	19	21	309
05:00 PM	5	2	7	1	33	34	3	5	8	49
05:15 PM	9	1	10	0	30	30	0	3	3	43
05:30 PM	12	0	12	1	12	13	1	1	2	27
05:45 PM	9	0	9	0	7	7	0	0	0	16
Total	35	3	38	2	82	84	4	9	13	135
Grand Total	77	4	81	30	299	329	6	28	34	444
Apprch %	95.1	4.9		9.1	90.9		17.6	82.4		
Total %	17.3	0.9	18.2	6.8	67.3	74.1	1.4	6.3	7.7	

	Quarry Road Southbound			Stoddard Wells Road Westbound			Stoddard Wells Road Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	3	1	4	5	67	72	0	2	2	78
04:15 PM	12	0	12	9	65	74	0	8	8	94
04:30 PM	19	0	19	7	47	54	1	4	5	78
04:45 PM	8	0	8	7	38	45	1	5	6	59
Total Volume	42	1	43	28	217	245	2	19	21	309
% App. Total	97.7	2.3		11.4	88.6		9.5	90.5		
PHF	.553	.250	.566	.778	.810	.828	.500	.594	.656	.822

City of Apple Valley
N/S: Quarry Road
E/W: Stoddard Wells Road
Weather: Clear

File Name : 02_APV_Quarry_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM			04:00 PM			04:15 PM		
+0 mins.	12	0	12	5	67	72	0	8	8
+15 mins.	19	0	19	9	65	74	1	4	5
+30 mins.	8	0	8	7	47	54	1	5	6
+45 mins.	5	2	7	7	38	45	3	5	8
Total Volume	44	2	46	28	217	245	5	22	27
% App. Total	95.7	4.3		11.4	88.6		18.5	81.5	
PHF	.579	.250	.605	.778	.810	.828	.417	.688	.844

City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

Groups Printed- Total Volume

	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	0	1	20	0	12	2	14	1	4	0	5	1	3	4	8	47
07:15 AM	22	0	0	22	2	15	0	17	0	5	0	5	1	0	4	5	49
07:30 AM	23	1	0	24	1	12	0	13	1	11	1	13	0	0	3	3	53
07:45 AM	29	2	6	37	1	19	0	20	7	6	1	14	0	1	3	4	75
Total	93	3	7	103	4	58	2	64	9	26	2	37	2	4	14	20	224
08:00 AM	14	1	7	22	0	13	0	13	1	3	1	5	1	0	2	3	43
08:15 AM	17	1	1	19	1	18	1	20	1	1	1	3	1	1	6	8	50
08:30 AM	20	1	6	27	1	13	1	15	0	1	0	1	2	3	6	11	54
08:45 AM	18	0	3	21	2	17	3	22	2	6	0	8	0	3	5	8	59
Total	69	3	17	89	4	61	5	70	4	11	2	17	4	7	19	30	206
Grand Total	162	6	24	192	8	119	7	134	13	37	4	54	6	11	33	50	430
Apprch %	84.4	3.1	12.5		6	88.8	5.2		24.1	68.5	7.4		12	22	66		
Total %	37.7	1.4	5.6	44.7	1.9	27.7	1.6	31.2	3	8.6	0.9	12.6	1.4	2.6	7.7	11.6	

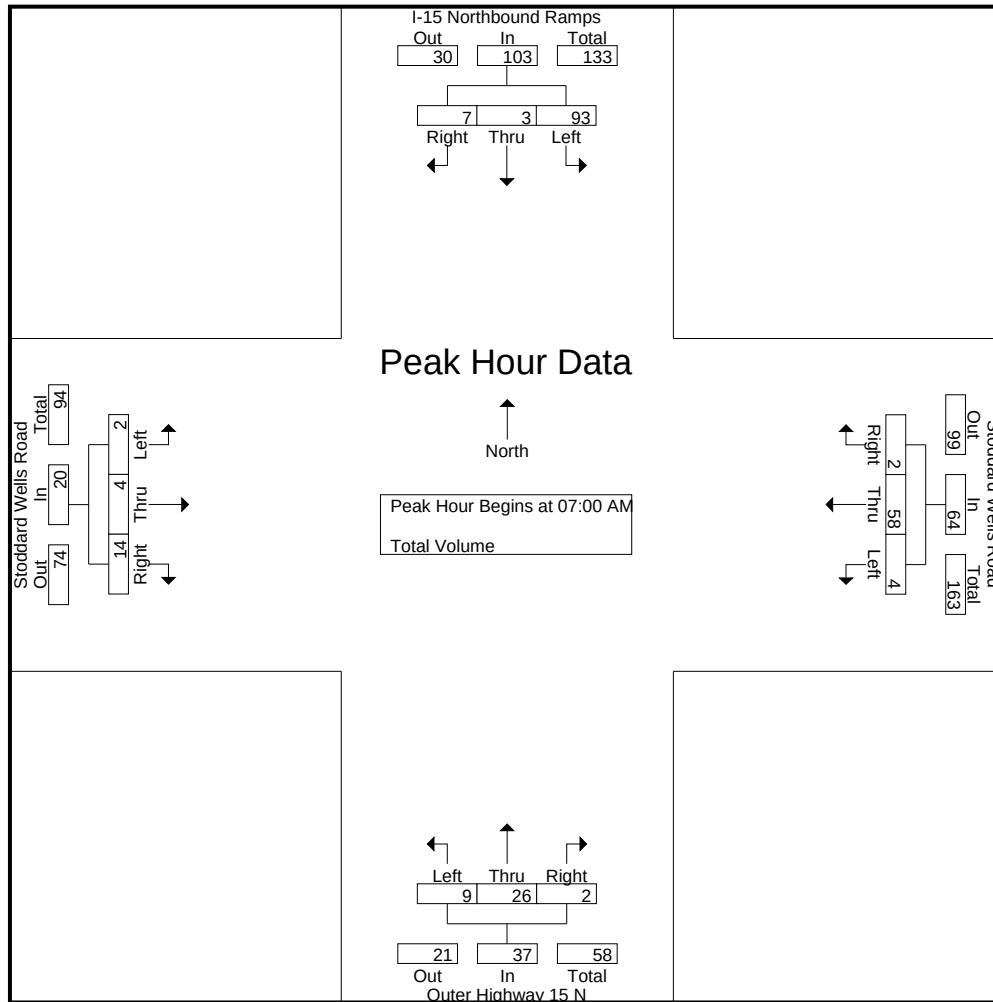
	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	19	0	1	20	0	12	2	14	1	4	0	5	1	3	4	8	47
07:15 AM	22	0	0	22	2	15	0	17	0	5	0	5	1	0	4	5	49
07:30 AM	23	1	0	24	1	12	0	13	1	11	1	13	0	0	3	3	53
07:45 AM	29	2	6	37	1	19	0	20	7	6	1	14	0	1	3	4	75
Total Volume	93	3	7	103	4	58	2	64	9	26	2	37	2	4	14	20	224
% App. Total	90.3	2.9	6.8		6.2	90.6	3.1		24.3	70.3	5.4		10	20	70		
PHF	.802	.375	.292	.696	.500	.763	.250	.800	.321	.591	.500	.661	.500	.333	.875	.625	.747

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard AM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				07:00 AM				08:00 AM			
+0 mins.	22	0	0	22	0	13	0	13	1	4	0	5	1	0	2	3
+15 mins.	23	1	0	24	1	18	1	20	0	5	0	5	1	1	6	8
+30 mins.	29	2	6	37	1	13	1	15	1	11	1	13	2	3	6	11
+45 mins.	14	1	7	22	2	17	3	22	7	6	1	14	0	3	5	8
Total Volume	88	4	13	105	4	61	5	70	9	26	2	37	4	7	19	30
% App. Total	83.8	3.8	12.4		5.7	87.1	7.1		24.3	70.3	5.4		13.3	23.3	63.3	
PHF	.759	.500	.464	.709	.500	.847	.417	.795	.321	.591	.500	.661	.500	.583	.792	.682

City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 1

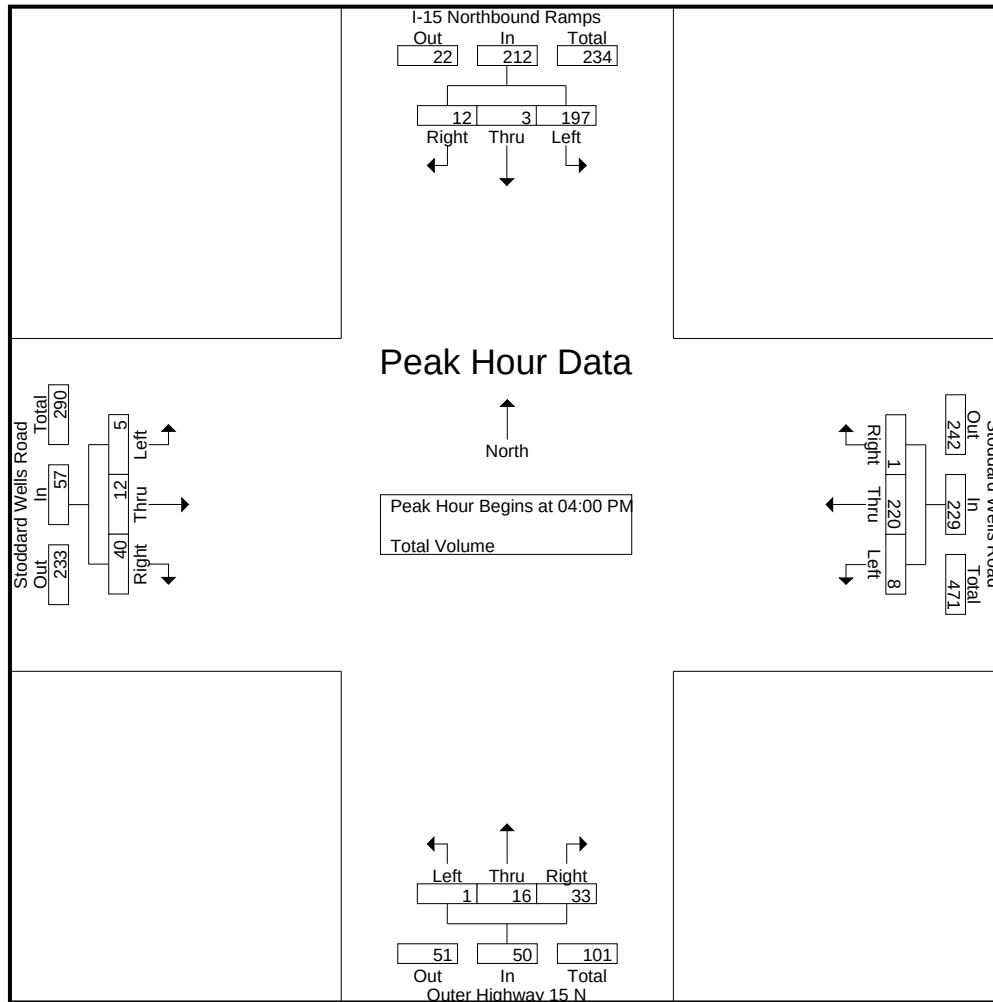
Groups Printed- Total Volume

	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	90	1	2	93	3	68	0	71	0	3	16	19	0	2	2	4	187
04:15 PM	62	0	6	68	1	64	0	65	0	3	10	13	3	3	13	19	165
04:30 PM	20	0	2	22	2	52	1	55	1	6	4	11	0	4	17	21	109
04:45 PM	25	2	2	29	2	36	0	38	0	4	3	7	2	3	8	13	87
Total	197	3	12	212	8	220	1	229	1	16	33	50	5	12	40	57	548
05:00 PM	30	1	0	31	0	31	2	33	0	6	1	7	1	5	4	10	81
05:15 PM	17	1	2	20	0	22	1	23	0	8	1	9	1	1	11	13	65
05:30 PM	24	1	2	27	0	12	2	14	0	6	5	11	0	4	13	17	69
05:45 PM	19	1	0	20	0	10	0	10	0	5	5	10	0	1	7	8	48
Total	90	4	4	98	0	75	5	80	0	25	12	37	2	11	35	48	263
Grand Total	287	7	16	310	8	295	6	309	1	41	45	87	7	23	75	105	811
Apprch %	92.6	2.3	5.2		2.6	95.5	1.9		1.1	47.1	51.7		6.7	21.9	71.4		
Total %	35.4	0.9	2	38.2	1	36.4	0.7	38.1	0.1	5.1	5.5	10.7	0.9	2.8	9.2	12.9	

	I-15 Northbound Ramps Southbound				Stoddard Wells Road Westbound				Outer Highway 15 N Northbound				Stoddard Wells Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	90	1	2	93	3	68	0	71	0	3	16	19	0	2	2	4	187
04:15 PM	62	0	6	68	1	64	0	65	0	3	10	13	3	3	13	19	165
04:30 PM	20	0	2	22	2	52	1	55	1	6	4	11	0	4	17	21	109
04:45 PM	25	2	2	29	2	36	0	38	0	4	3	7	2	3	8	13	87
Total Volume	197	3	12	212	8	220	1	229	1	16	33	50	5	12	40	57	548
% App. Total	92.9	1.4	5.7		3.5	96.1	0.4		2	32	66		8.8	21.1	70.2		
PHF	.547	.375	.500	.570	.667	.809	.250	.806	.250	.667	.516	.658	.417	.750	.588	.679	.733

City of Apple Valley
N/S: I-15 NB Ramps/Outer Hwy 15 N
E/W: Stoddard Wells Road
Weather: Clear

File Name : 03_APV_15N_Stoddard PM
Site Code : 99921190
Start Date : 5/6/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:15 PM			
+0 mins.	90	1	2	93	3	68	0	71	0	3	16	19	3	3	13	19
+15 mins.	62	0	6	68	1	64	0	65	0	3	10	13	0	4	17	21
+30 mins.	20	0	2	22	2	52	1	55	1	6	4	11	2	3	8	13
+45 mins.	25	2	2	29	2	36	0	38	0	4	3	7	1	5	4	10
Total Volume	197	3	12	212	8	220	1	229	1	16	33	50	6	15	42	63
% App. Total	92.9	1.4	5.7		3.5	96.1	0.4		2	32	66		9.5	23.8	66.7	
PHF	.547	.375	.500	.570	.667	.809	.250	.806	.250	.667	.516	.658	.500	.750	.618	.750

Counts Unlimited, Inc.

Page 1

Town of Apple Valley
Stoddard Wells Road
B/ Quarry Road - I-15 Northbound Ramps
24 Hour Directional Volume Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

APV002
Site Code: 999-21190

Start Time	5/6/2021 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	10			10	32				
12:15		0	13			13	42				
12:30		2	18			12	26				
12:45		6	12	8	53	17	36	52	136	60	189
01:00		0	14			16	39				
01:15		4	16			17	38				
01:30		2	11			20	52				
01:45		0	12	6	53	6	35	59	164	65	217
02:00		2	11			15	38				
02:15		2	16			4	30				
02:30		0	12			12	40				
02:45		0	14	4	53	7	46	38	154	42	207
03:00		2	12			50	28				
03:15		3	10			29	40				
03:30		2	15			10	74				
03:45		2	16	9	53	14	37	103	179	112	232
04:00		2	10			15	78				
04:15		4	22			11	80				
04:30		4	26			10	60				
04:45		0	16	10	74	10	48	46	266	56	340
05:00		2	10			10	35				
05:15		2	14			16	34				
05:30		2	14			19	18				
05:45		2	10	8	48	10	10	55	97	63	145
06:00		2	6			9	10				
06:15		4	9			13	30				
06:30		4	8			16	24				
06:45		3	4	13	27	18	14	56	78	69	105
07:00		8	3			18	10				
07:15		6	5			17	16				
07:30		3	3			20	4				
07:45		4	5	21	16	34	17	89	47	110	63
08:00		2	7			23	6				
08:15		10	2			24	5				
08:30		12	6			37	12				
08:45		11	4	35	19	25	5	109	28	144	47
09:00		16	3			23	8				
09:15		8	6			28	14				
09:30		8	2			28	8				
09:45		6	13	38	24	26	36	105	66	143	90
10:00		6	6			31	6				
10:15		12	6			24	6				
10:30		14	7			32	13				
10:45		8	4	40	23	42	4	129	29	169	52
11:00		11	4			34	7				
11:15		7	6			32	8				
11:30		10	8			29	17				
11:45		14	0	42	18	26	8	121	40	163	58
Total		234	461	234	461	962	1284	962	1284	1196	1745
Combined Total		695		695		2246		2246		2941	
AM Peak	-	08:15	-	-	-	10:30	-	-	-	-	-
Vol.	-	49	-	-	-	140	-	-	-	-	-
P.H.F.		0.766				0.833					
PM Peak	-	-	03:45	-	-	-	03:30	-	-	-	-
Vol.	-	-	74	-	-	-	269	-	-	-	-
P.H.F.			0.712				0.841				
Percentage		33.7%	66.3%			42.8%	57.2%				
ADT/AADT		ADT 2,941	AADT 2,941								

Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Volume Count

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

APV003
Site Code: 999-21190

Start Time	5/6/2021 Thu	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	23			10	31				
12:15		8	25			10	40				
12:30		8	30			12	22				
12:45		6	38	23	116	17	33	49	126	72	242
01:00		6	20			17	33				
01:15		1	18			17	30				
01:30		0	26			19	44				
01:45		0	27	7	91	6	31	59	138	66	229
02:00		2	46			10	39				
02:15		1	32			4	29				
02:30		6	24			10	40				
02:45		6	47	15	149	7	42	31	150	46	299
03:00		1	38			46	25				
03:15		10	44			30	40				
03:30		16	49			10	70				
03:45		16	64	43	195	12	36	98	171	141	366
04:00		20	98			14	79				
04:15		41	105			10	80				
04:30		48	31			8	55				
04:45		73	36	182	270	7	43	39	257	221	527
05:00		48	36			12	36				
05:15		68	30			18	32				
05:30		43	31			20	19				
05:45		48	34	207	131	11	11	61	98	268	229
06:00		28	32			8	10				
06:15		44	18			14	30				
06:30		30	18			15	20				
06:45		26	14	128	82	16	12	53	72	181	154
07:00		24	10			16	8				
07:15		32	8			18	16				
07:30		32	5			18	4				
07:45		45	4	133	27	26	11	78	39	211	66
08:00		23	6			16	6				
08:15		32	12			20	5				
08:30		27	6			27	8				
08:45		30	10	112	34	22	4	85	23	197	57
09:00		37	11			16	7				
09:15		37	9			20	10				
09:30		28	6			25	8				
09:45		31	12	133	38	22	35	83	60	216	98
10:00		26	10			25	5				
10:15		36	10			22	6				
10:30		24	5			24	10				
10:45		34	8	120	33	32	5	103	26	223	59
11:00		23	2			23	6				
11:15		22	2			26	4				
11:30		38	2			17	12				
11:45		33	12	116	18	20	9	86	31	202	49
Total		1219	1184	1219	1184	825	1191	825	1191	2044	2375
Combined Total		2403		2403		2016		2016		4419	
AM Peak	-	04:30	-	-	-	10:30	-	-	-	-	-
Vol.	-	237	-	-	-	105	-	-	-	-	-
P.H.F.		0.812				0.820					
PM Peak	-	-	03:30	-	-	-	03:30	-	-	-	-
Vol.	-	-	316	-	-	-	265	-	-	-	-
P.H.F.			0.752				0.828				
Percentage		50.7%	49.3%			40.9%	59.1%				
ADT/AADT		ADT 4,419	AADT 4,419								

Counts Unlimited, Inc.

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Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

APV003C
Site Code: 999-21190

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/06/21	0	7	1	0	1	0	0	0	6	0	0	0	0	15
01:00	0	2	0	0	1	1	0	0	1	0	0	0	0	5
02:00	0	9	2	0	0	1	0	0	1	0	0	0	0	13
03:00	1	20	9	0	3	1	0	0	3	0	0	0	0	37
04:00	1	117	32	2	13	1	0	0	6	0	0	0	0	172
05:00	0	123	26	5	23	0	0	0	8	0	0	0	0	185
06:00	0	63	16	1	21	3	0	1	7	0	0	0	0	112
07:00	1	46	16	1	19	2	0	2	16	0	0	0	1	104
08:00	2	28	19	0	18	2	0	2	17	0	0	0	0	88
09:00	1	28	7	2	17	1	0	3	28	0	0	0	0	87
10:00	0	24	7	4	11	0	0	4	27	0	0	0	0	77
11:00	0	28	11	1	10	2	0	6	20	0	0	0	0	78
12 PM	0	21	13	2	14	0	0	7	19	0	1	0	0	77
13:00	1	28	12	3	12	0	0	2	14	0	0	0	0	72
14:00	0	45	16	2	23	2	0	6	18	0	0	0	0	112
15:00	1	99	29	1	26	1	0	4	10	0	0	0	1	172
16:00	1	162	39	3	20	6	0	2	7	0	0	0	0	240
17:00	0	62	24	0	14	2	0	1	10	0	0	0	0	113
18:00	0	37	12	0	7	4	0	1	7	0	0	0	0	68
19:00	0	12	9	0	3	0	0	0	1	0	0	0	0	25
20:00	0	5	6	0	1	0	0	4	5	0	0	0	0	21
21:00	0	15	3	0	4	0	0	2	5	0	0	0	0	29
22:00	0	5	4	1	0	1	0	3	5	0	1	0	0	20
23:00	0	6	2	0	1	0	0	4	1	0	0	0	0	14
Total	9	992	315	28	262	30	0	54	242	0	2	0	2	1936
Percent	0.5%	51.2%	16.3%	1.4%	13.5%	1.5%	0.0%	2.8%	12.5%	0.0%	0.1%	0.0%	0.1%	
AM Peak	08:00	05:00	04:00	05:00	05:00	06:00		11:00	09:00				07:00	05:00
Vol.	2	123	32	5	23	3		6	28				1	185
PM Peak	13:00	16:00	16:00	13:00	15:00	16:00		12:00	12:00		12:00		15:00	16:00
Vol.	1	162	39	3	26	6		7	19		1		1	240
Grand Total	9	992	315	28	262	30	0	54	242	0	2	0	2	1936
Percent	0.5%	51.2%	16.3%	1.4%	13.5%	1.5%	0.0%	2.8%	12.5%	0.0%	0.1%	0.0%	0.1%	

Counts Unlimited, Inc.

Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

APV003C
Site Code: 999-21190

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/06/21	0	37	2	0	4	0	0	3	1	0	0	0	0	47
01:00	1	39	8	0	5	2	0	3	0	0	0	0	0	58
02:00	1	17	2	0	3	1	0	3	0	0	0	0	0	27
03:00	0	76	15	0	5	0	0	2	0	0	0	0	0	98
04:00	0	19	4	0	10	0	0	5	0	0	0	0	0	38
05:00	0	22	5	0	6	0	0	12	1	0	0	0	0	46
06:00	1	26	9	1	6	0	0	6	0	0	0	0	0	49
07:00	0	31	4	1	10	1	0	14	0	0	0	0	0	61
08:00	0	24	11	0	14	1	0	21	0	0	0	0	0	71
09:00	2	23	8	0	8	3	0	20	2	0	0	0	0	66
10:00	0	28	11	0	10	0	0	31	2	0	0	0	0	82
11:00	1	30	8	2	12	2	0	17	0	0	0	0	0	72
12 PM	2	36	19	1	14	2	0	25	3	0	0	0	0	102
13:00	1	74	17	0	13	1	0	18	0	0	0	0	0	124
14:00	1	77	13	1	12	3	0	18	0	0	2	0	0	127
15:00	0	106	22	0	8	0	0	13	0	0	1	0	0	150
16:00	1	176	41	0	9	2	0	7	0	0	0	0	0	236
17:00	0	48	17	0	4	0	0	7	0	0	5	0	0	81
18:00	2	27	13	0	7	3	0	8	0	0	2	0	0	62
19:00	1	17	3	0	6	1	0	5	0	0	1	0	0	34
20:00	0	14	2	0	3	0	0	2	0	0	0	0	0	21
21:00	1	28	12	0	6	2	0	6	0	0	0	0	0	55
22:00	1	15	2	0	1	1	0	3	0	0	0	0	0	23
23:00	0	16	5	0	4	0	0	4	0	0	0	0	0	29
Total	16	1006	253	6	180	25	0	253	9	0	11	0	0	1759
Percent	0.9%	57.2%	14.4%	0.3%	10.2%	1.4%	0.0%	14.4%	0.5%	0.0%	0.6%	0.0%	0.0%	
AM Peak	09:00	03:00	03:00	11:00	08:00	09:00		10:00	09:00					03:00
Vol.	2	76	15	2	14	3		31	2					98
PM Peak	12:00	16:00	16:00	12:00	12:00	14:00		12:00	12:00		17:00			16:00
Vol.	2	176	41	1	14	3		25	3		5			236
Grand Total	16	1006	253	6	180	25	0	253	9	0	11	0	0	1759
Percent	0.9%	57.2%	14.4%	0.3%	10.2%	1.4%	0.0%	14.4%	0.5%	0.0%	0.6%	0.0%	0.0%	

Counts Unlimited, Inc.

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Town of Apple Valley
Stoddard Wells Road
E/ Interstate 15 Northbound Ramps
24 Hour Directional Classification Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

APV003C
Site Code: 999-21190

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/06/21	0	44	3	0	5	0	0	3	7	0	0	0	0	62
01:00	1	41	8	0	6	3	0	3	1	0	0	0	0	63
02:00	1	26	4	0	3	2	0	3	1	0	0	0	0	40
03:00	1	96	24	0	8	1	0	2	3	0	0	0	0	135
04:00	1	136	36	2	23	1	0	5	6	0	0	0	0	210
05:00	0	145	31	5	29	0	0	12	9	0	0	0	0	231
06:00	1	89	25	2	27	3	0	7	7	0	0	0	0	161
07:00	1	77	20	2	29	3	0	16	16	0	0	0	1	165
08:00	2	52	30	0	32	3	0	23	17	0	0	0	0	159
09:00	3	51	15	2	25	4	0	23	30	0	0	0	0	153
10:00	0	52	18	4	21	0	0	35	29	0	0	0	0	159
11:00	1	58	19	3	22	4	0	23	20	0	0	0	0	150
12 PM	2	57	32	3	28	2	0	32	22	0	1	0	0	179
13:00	2	102	29	3	25	1	0	20	14	0	0	0	0	196
14:00	1	122	29	3	35	5	0	24	18	0	2	0	0	239
15:00	1	205	51	1	34	1	0	17	10	0	1	0	1	322
16:00	2	338	80	3	29	8	0	9	7	0	0	0	0	476
17:00	0	110	41	0	18	2	0	8	10	0	5	0	0	194
18:00	2	64	25	0	14	7	0	9	7	0	2	0	0	130
19:00	1	29	12	0	9	1	0	5	1	0	1	0	0	59
20:00	0	19	8	0	4	0	0	6	5	0	0	0	0	42
21:00	1	43	15	0	10	2	0	8	5	0	0	0	0	84
22:00	1	20	6	1	1	2	0	6	5	0	1	0	0	43
23:00	0	22	7	0	5	0	0	8	1	0	0	0	0	43
Total	25	1998	568	34	442	55	0	307	251	0	13	0	2	3695
Percent	0.7%	54.1%	15.4%	0.9%	12.0%	1.5%	0.0%	8.3%	6.8%	0.0%	0.4%	0.0%	0.1%	
AM Peak	09:00	05:00	04:00	05:00	08:00	09:00		10:00	09:00				07:00	05:00
Vol.	3	145	36	5	32	4		35	30				1	231
PM Peak	12:00	16:00	16:00	12:00	14:00	16:00		12:00	12:00		17:00		15:00	16:00
Vol.	2	338	80	3	35	8		32	22		5		1	476
Grand Total	25	1998	568	34	442	55	0	307	251	0	13	0	2	3695
Percent	0.7%	54.1%	15.4%	0.9%	12.0%	1.5%	0.0%	8.3%	6.8%	0.0%	0.4%	0.0%	0.1%	

Counts Unlimited, Inc.

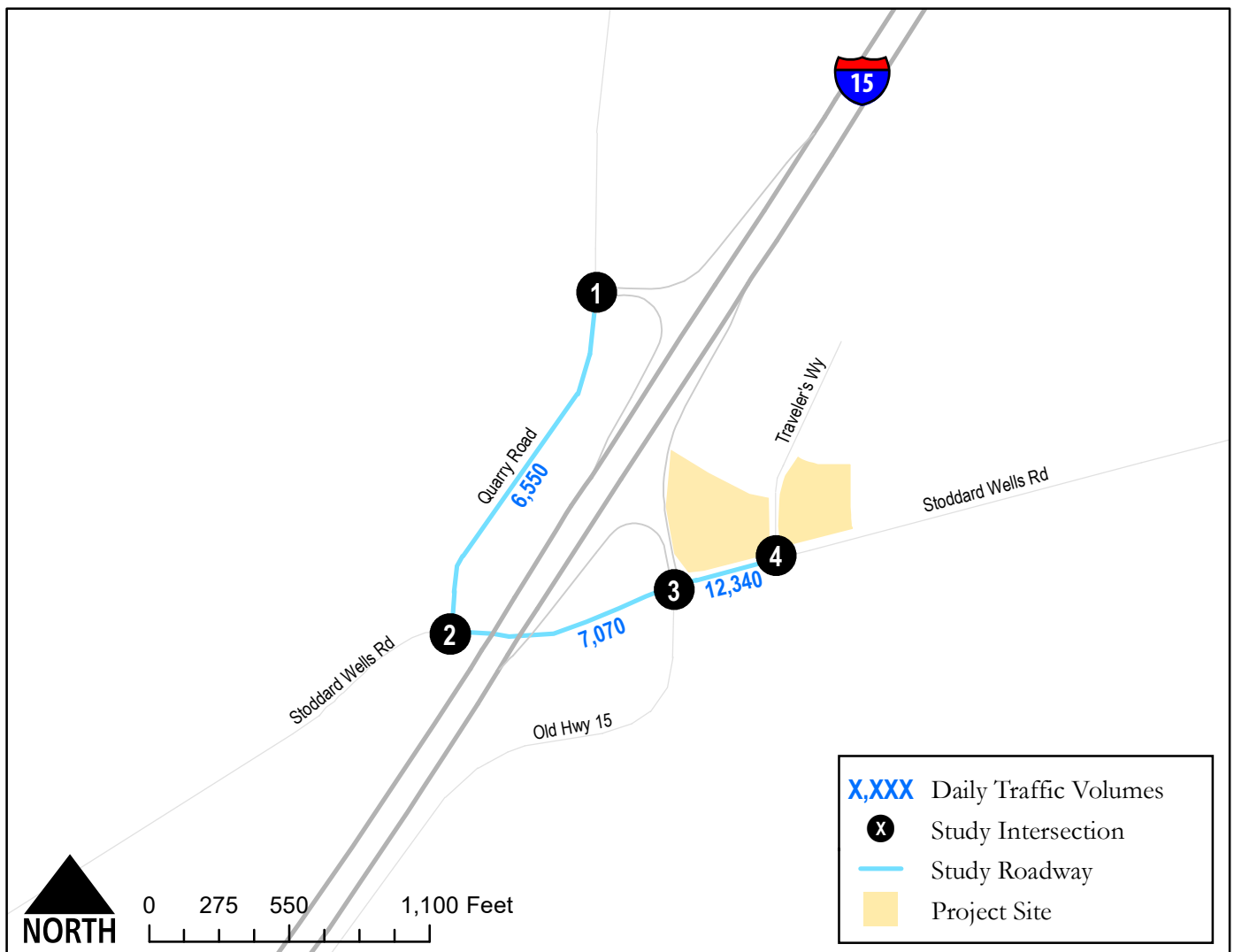
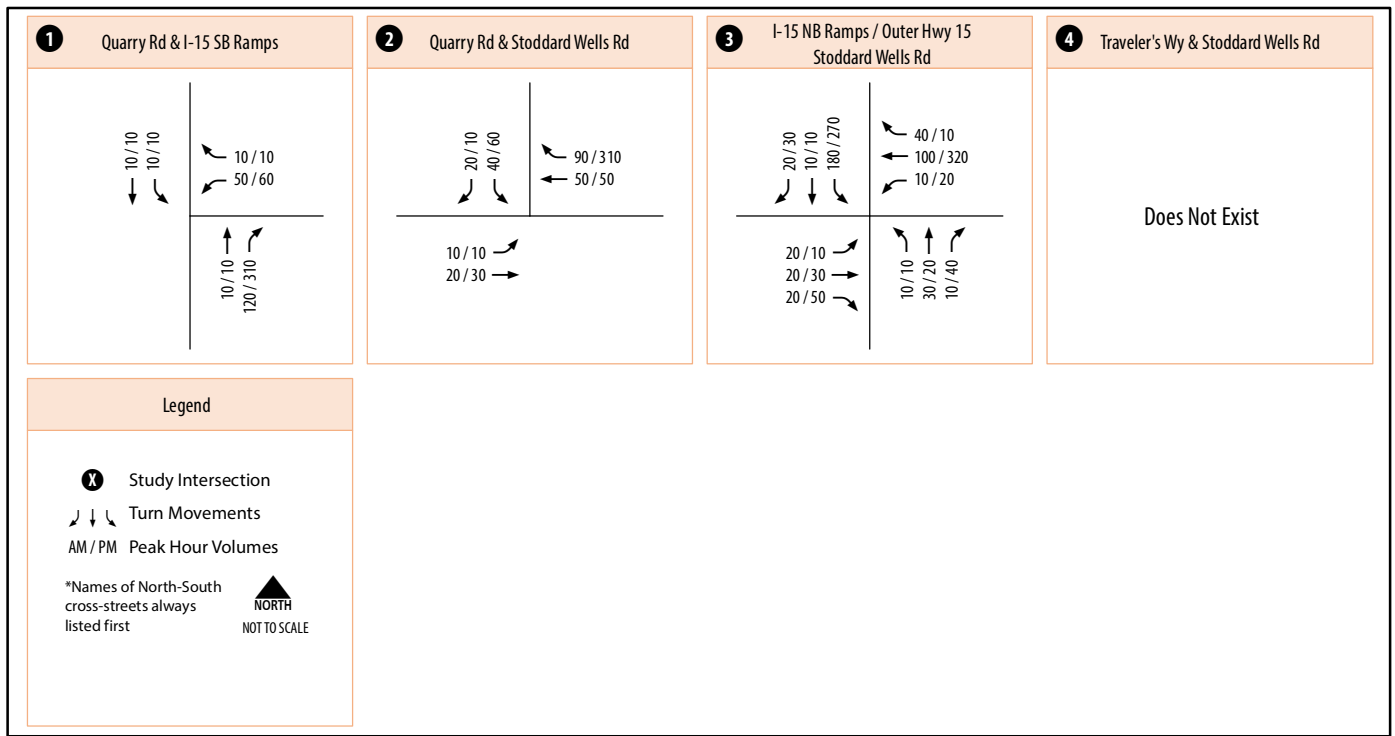
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Town of Apple Valley
Quarry Road
B/ I-15 Southbound Ramps - Stoddard Wells Road
24 Hour Directional Volume Count

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

APV001
Site Code: 999-21190

Start Time	5/6/2021 Thu	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	33			0	4				
12:15		14	38			0	10				
12:30		12	22			1	9				
12:45		18	26	54	119	3	4	4	27	58	146
01:00		14	32			0	8				
01:15		18	26			3	14				
01:30		19	38			0	2				
01:45		6	28	57	124	0	11	3	35	60	159
02:00		14	34			1	12				
02:15		4	28			2	10				
02:30		12	37			2	6				
02:45		7	40	37	139	0	11	5	39	42	178
03:00		48	23			0	8				
03:15		29	31			2	8				
03:30		12	68			1	12				
03:45		16	30	105	152	1	12	4	40	109	192
04:00		13	72			1	7				
04:15		12	71			4	14				
04:30		10	54			3	19				
04:45		10	38	45	235	1	10	9	50	54	285
05:00		10	36			0	8				
05:15		16	36			2	11				
05:30		20	17			0	14				
05:45		12	8	58	97	2	8	4	41	62	138
06:00		9	12			1	6				
06:15		13	25			2	8				
06:30		16	22			2	6				
06:45		14	8	52	67	3	1	8	21	60	88
07:00		14	12			6	4				
07:15		16	14			5	6				
07:30		16	2			4	3				
07:45		20	12	66	40	4	4	19	17	85	57
08:00		12	6			4	7				
08:15		23	2			8	0				
08:30		26	11			6	2				
08:45		22	6	83	25	7	2	25	11	108	36
09:00		18	4			11	3				
09:15		24	6			5	3				
09:30		24	0			4	1				
09:45		20	0	86	10	4	1	24	8	110	18
10:00		30	0			4	1				
10:15		20	1			9	2				
10:30		28	0			12	2				
10:45		31	1	109	2	4	2	29	7	138	9
11:00		16	1			8	3				
11:15		31	0			6	3				
11:30		22	0			6	2				
11:45		22	0	91	1	10	0	30	8	121	9
Total		843	1011	843	1011	164	304	164	304	1007	1315
Combined Total		1854		1854		468		468		2322	
AM Peak	-	10:00	-	-	-	10:15	-	-	-	-	-
Vol.	-	109	-	-	-	33	-	-	-	-	-
P.H.F.		0.879				0.688					
PM Peak	-	-	03:30	-	-	-	03:45	-	-	-	-
Vol.	-	-	241	-	-	-	52	-	-	-	-
P.H.F.			0.837				0.684				
Percentage		45.5%	54.5%			35.0%	65.0%				
ADT/AADT		ADT 2,322	AADT 2,322								



Appendix B

LOS Worksheets

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Existing Conditions
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	0	0	87	3	3
Future Vol, veh/h	32	0	0	87	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	0	0	109	4	4
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	67	55	0	0	109	0
Stage 1	55	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	943	1018	-	-	1494	-
Stage 1	973	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	940	1018	-	-	1494	-
Mov Cap-2 Maneuver	940	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9	0	3.7			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 940	- 1494	-		
HCM Lane V/C Ratio	-	- 0.043	- 0.003	-		
HCM Control Delay (s)	-	- 9	0 7.4	0		
HCM Lane LOS	-	- A	A A	A		
HCM 95th %tile Q(veh)	-	- 0.1	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Existing Conditions
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	25	50	88	27	13
Future Vol, veh/h	8	25	50	88	27	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	28	56	98	30	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	56	0	-	0	102	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1562	-	-	-	901	1016
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	982	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1562	-	-	-	896	1016
Mov Cap-2 Maneuver	-	-	-	-	896	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	982	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1562	-	-	-	896	1016
HCM Lane V/C Ratio	0.006	-	-	-	0.033	0.014
HCM Control Delay (s)	7.3	0	-	-	9.2	8.6
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Existing Conditions
Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔	↔		↔	↔
Traffic Vol, veh/h	5	8	23	8	94	5	16	43	5	147	6	13
Future Vol, veh/h	5	8	23	8	94	5	16	43	5	147	6	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	11	31	11	125	7	21	57	7	196	8	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	42	0	0	204	195	27	224	207	129
Stage 1	-	-	-	-	-	-	41	41	-	151	151	-
Stage 2	-	-	-	-	-	-	163	154	-	73	56	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1466	-	-	1580	-	-	758	704	1054	736	693	926
Stage 1	-	-	-	-	-	-	979	865	-	856	776	-
Stage 2	-	-	-	-	-	-	844	774	-	942	852	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1466	-	-	1580	-	-	730	695	1054	679	684	926
Mov Cap-2 Maneuver	-	-	-	-	-	-	730	695	-	679	684	-
Stage 1	-	-	-	-	-	-	974	861	-	852	770	-
Stage 2	-	-	-	-	-	-	813	768	-	869	848	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.5			10.6			12.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	704	1054	1466	-	-	1580	-	-	679	926		
HCM Lane V/C Ratio	0.112	0.006	0.005	-	-	0.007	-	-	0.3	0.019		
HCM Control Delay (s)	10.8	8.4	7.5	0	-	7.3	0	-	12.6	9		
HCM Lane LOS	B	A	A	A	-	A	A	-	B	A		
HCM 95th %tile Q(veh)	0.4	0	0	-	-	0	-	-	1.3	0.1		

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Existing Conditions
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	0	0	272	2	0
Future Vol, veh/h	53	0	0	272	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	63	0	0	324	2	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	166	162	0	0	324	0
Stage 1	162	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	829	888	-	-	1247	-
Stage 1	872	-	-	-	-	-
Stage 2	1024	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	827	888	-	-	1247	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.7	0	7.9			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 827	- 1247	-		
HCM Lane V/C Ratio	-	- 0.076	- 0.002	-		
HCM Control Delay (s)	-	- 9.7	0 7.9	0		
HCM Lane LOS	-	- A	A A	A		
HCM 95th %tile Q(veh)	-	- 0.2	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Existing Conditions
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	25	34	257	52	2
Future Vol, veh/h	4	25	34	257	52	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	30	41	313	63	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	41	0	-	0	81	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1581	-	-	-	926	1036
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1581	-	-	-	923	1036
Mov Cap-2 Maneuver	-	-	-	-	923	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	988	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		9.2		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1581	-	-	-	923	1036
HCM Lane V/C Ratio	0.003	-	-	-	0.069	0.002
HCM Control Delay (s)	7.3	0	-	-	9.2	8.5
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Existing Conditions
Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	16.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Vol, veh/h	7	16	50	11	261	2	2	20	42	244	5	15
Future Vol, veh/h	7	16	50	11	261	2	2	20	42	244	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	22	68	15	358	3	3	27	58	334	7	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	361	0	0	90	0	0	480	467	56	509	500	360
Stage 1	-	-	-	-	-	-	76	76	-	390	390	-
Stage 2	-	-	-	-	-	-	404	391	-	119	110	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1209	-	-	1518	-	-	499	496	1016	478	476	689
Stage 1	-	-	-	-	-	-	938	836	-	638	611	-
Stage 2	-	-	-	-	-	-	627	611	-	890	808	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1209	-	-	1518	-	-	471	486	1016	424	466	689
Mov Cap-2 Maneuver	-	-	-	-	-	-	471	486	-	424	466	-
Stage 1	-	-	-	-	-	-	930	828	-	632	604	-
Stage 2	-	-	-	-	-	-	594	604	-	805	801	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.3			10.2			38.3		
HCM LOS							B			E		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	485	1016	1209	-	-	1518	-	-	425	689
HCM Lane V/C Ratio	0.062	0.057	0.008	-	-	0.01	-	-	0.803	0.03
HCM Control Delay (s)	12.9	8.8	8	0	-	7.4	0	-	40	10.4
HCM Lane LOS	B	A	A	A	-	A	A	-	E	B
HCM 95th %tile Q(veh)	0.2	0.2	0	-	-	0	-	-	7.2	0.1

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	103	0	0	196	3	3
Future Vol, veh/h	103	0	0	196	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	129	0	0	245	4	4
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	135	123	0	0	245	0
Stage 1	123	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	863	933	-	-	1333	-
Stage 1	907	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	860	933	-	-	1333	-
Mov Cap-2 Maneuver	860	-	-	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.9	0	3.9			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 860	- 1333	-		
HCM Lane V/C Ratio	-	- 0.15	- 0.003	-		
HCM Control Delay (s)	-	- 9.9	0 7.7	0		
HCM Lane LOS	-	- A	A A	A		
HCM 95th %tile Q(veh)	-	- 0.5	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	29	52	197	98	13
Future Vol, veh/h	8	29	52	197	98	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	32	58	219	109	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	58	0	-	0	108	58
Stage 1	-	-	-	-	58	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1559	-	-	-	894	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	889	1014
Mov Cap-2 Maneuver	-	-	-	-	889	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	978	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.6	0		9.5		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1559	-	-	-	889	1014
HCM Lane V/C Ratio	0.006	-	-	-	0.122	0.014
HCM Control Delay (s)	7.3	0	-	-	9.6	8.6
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Existing plus Project
Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	83.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	83	23	10	205	29	16	43	9	409	6	13
Future Vol, veh/h	5	83	23	10	205	29	16	43	9	409	6	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	111	31	13	273	39	21	57	12	545	8	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	312	0	0	142	0	0	472	479	127	494	475	293
Stage 1	-	-	-	-	-	-	141	141	-	319	319	-
Stage 2	-	-	-	-	-	-	331	338	-	175	156	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1260	-	-	1453	-	-	506	489	929	~ 489	491	751
Stage 1	-	-	-	-	-	-	867	784	-	697	657	-
Stage 2	-	-	-	-	-	-	687	644	-	832	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1260	-	-	1453	-	-	482	481	929	~ 433	483	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	482	481	-	~ 433	483	-
Stage 1	-	-	-	-	-	-	862	779	-	693	650	-
Stage 2	-	-	-	-	-	-	656	637	-	756	767	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			13.2			163		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	481	929	1260	-	-	1453	-	-	434	751		
HCM Lane V/C Ratio	0.164	0.013	0.005	-	-	0.009	-	-	1.275	0.023		
HCM Control Delay (s)	13.9	8.9	7.9	0	-	7.5	0	-	167.8	9.9		
HCM Lane LOS	B	A	A	A	-	A	A	-	F	A		
HCM 95th %tile Q(veh)	0.6	0	0	-	-	0	-	-	23.7	0.1		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

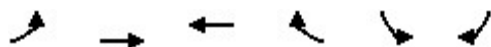
HCM 6th TWSC
4: Stoddard Wells Road & Driveway A

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	500	212	5	0	32
Future Vol, veh/h	0	500	212	5	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	543	230	5	0	35
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	233
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	811
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	811
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.6		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	811		
HCM Lane V/C Ratio	-	-	-	0.043		
HCM Control Delay (s)	-	-	-	9.6		
HCM Lane LOS	-	-	-	A		
HCM 95th %tile Q(veh)	-	-	-	0.1		

HCM 6th Signalized Intersection Summary 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Existing plus Project
Timing Plan: AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	341	159	112	5	4	105	
Future Volume (veh/h)	341	159	112	5	4	105	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	371	173	122	5	4	114	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	495	1111	284	12	6	165	
Arrive On Green	0.27	0.58	0.16	0.16	0.11	0.11	
Sat Flow, veh/h	1810	1900	1812	74	54	1550	
Grp Volume(v), veh/h	371	173	0	127	119	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1887	1618	0	
Q Serve(g_s), s	5.5	1.2	0.0	1.8	2.1	0.0	
Cycle Q Clear(g_c), s	5.5	1.2	0.0	1.8	2.1	0.0	
Prop In Lane	1.00			0.04	0.03	0.96	
Lane Grp Cap(c), veh/h	495	1111	0	295	172	0	
V/C Ratio(X)	0.75	0.16	0.00	0.43	0.69	0.00	
Avail Cap(c_a), veh/h	1312	2846	0	1167	411	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	9.7	2.8	0.0	11.1	12.5	0.0	
Incr Delay (d2), s/veh	2.3	0.1	0.0	1.0	4.9	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.5	0.8	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	12.0	2.8	0.0	12.1	17.5	0.0	
LnGrp LOS	B	A	A	B	B	A	
Approach Vol, veh/h		544	127		119		
Approach Delay, s/veh		9.1	12.1		17.5		
Approach LOS		A	B		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				21.5	7.6	12.5	9.1
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				43.6	7.4	21.1	18.0
Max Q Clear Time (g_c+l1), s				3.2	4.1	7.5	3.8
Green Ext Time (p_c), s				0.9	0.1	0.9	0.4
Intersection Summary							
HCM 6th Ctrl Delay			10.8				
HCM 6th LOS			B				

HCM 6th TWSC
6: Driveway A & Driveway B

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	3	2	0	23
Future Vol, veh/h	10	0	3	2	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	3	2	0	25
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	29	4	0	0	5	0
Stage 1	4	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	991	1085	-	-	1630	-
Stage 1	1024	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	991	1085	-	-	1630	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 991		1630	-	
HCM Lane V/C Ratio	-	- 0.011		-	-	
HCM Control Delay (s)	-	- 8.7		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	

HCM 6th TWSC
7: Outer I-15 (New Alignment) & Driveway C

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	49	297	95	0
Future Vol, veh/h	0	14	49	297	95	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	15	53	323	103	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	532	103	103	0	-	0
Stage 1	103	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	512	957	1502	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	490	957	1502	-	-	-
Mov Cap-2 Maneuver	490	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1502	-	957	-	-	
HCM Lane V/C Ratio	0.035	-	0.016	-	-	
HCM Control Delay (s)	7.5	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
8: Outer I-15 (New Alignment) & Driveway D

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	49	249	91	0
Future Vol, veh/h	0	4	49	249	91	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	53	271	99	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	476	99	99	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	551	962	1507	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	528	962	1507	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1507	-	962	-	-	
HCM Lane V/C Ratio	0.035	-	0.005	-	-	
HCM Control Delay (s)	7.5	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
9: Outer I-15 (New Alignment) & Driveway E

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	48	200	83	0
Future Vol, veh/h	0	7	48	200	83	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	52	217	90	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	411	90	90	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	601	973	1518	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	578	973	1518	-	-	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1518	-	973	-	-	
HCM Lane V/C Ratio	0.034	-	0.008	-	-	
HCM Control Delay (s)	7.5	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
10: Outer I-15 (New Alignment) & Driveway F

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	151	73	0
Future Vol, veh/h	0	9	48	151	73	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	164	79	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	347	79	79	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	654	987	1532	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	630	987	1532	-	-	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1532	-	987	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
11: Outer I-15 (New Alignment) & Driveway G

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	103	64	0
Future Vol, veh/h	0	9	48	103	64	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	112	70	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	286	70	70	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	709	998	1544	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	683	998	1544	-	-	-
Mov Cap-2 Maneuver	683	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1544	-	998	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
12: Outer I-15 (New Alignment) & Driveway H

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	55	55	0
Future Vol, veh/h	0	9	48	55	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	60	60	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	224	60	60	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	769	1011	1556	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	742	1011	1556	-	-	-
Mov Cap-2 Maneuver	742	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	3.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1556	-	1011	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
13: Outer I-15 (New Alignment) & Driveway I

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	22	21	34	35	0
Future Vol, veh/h	0	22	21	34	35	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	24	23	37	38	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	121	38	38	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	879	1040	1585	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	866	1040	1585	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1585	-	1040	-	-	
HCM Lane V/C Ratio	0.014	-	0.023	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
14: Outer I-15 (New Alignment) & Driveway J

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	14	21	22	0
Future Vol, veh/h	0	13	14	21	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	15	23	24	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	77	24	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	931	1058	1604	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1058	1604	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	2.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	1058	-	-	
HCM Lane V/C Ratio	0.009	-	0.013	-	-	
HCM Control Delay (s)	7.3	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Outer I-15 (New Alignment) & Driveway K

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	22	21	0	0	0
Future Vol, veh/h	0	22	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	24	23	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	47	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	968	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	954	1090	1635	-	-	-
Mov Cap-2 Maneuver	954	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1635	-	1090	-	-	
HCM Lane V/C Ratio	0.014	-	0.022	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
16: Driveway L & Driveway K

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	0	7	14	0	7
Future Vol, veh/h	15	0	7	14	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	0	8	15	0	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	47	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1615	-	968	1069
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	963	1069
Mov Cap-2 Maneuver	-	-	-	-	963	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	992	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.4		8.4	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1069	-	-	1615	-	
HCM Lane V/C Ratio	0.007	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
17: Driveway I & Driveway M

Existing plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	14	7	7	0
Future Vol, veh/h	0	15	14	7	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	15	8	8	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	23	0	-	0	35	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1605	-	-	-	983	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1605	-	-	-	983	1065
Mov Cap-2 Maneuver	-	-	-	-	983	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1012	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1605	-	-	-	983	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Control Delay (s)	0	-	-	-	8.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	104	0	0	506	2	1
Future Vol, veh/h	104	0	0	506	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	124	0	0	602	2	1
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	306	301	0	0	602	0
Stage 1	301	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	690	743	-	-	985	-
Stage 1	755	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	689	743	-	-	985	-
Mov Cap-2 Maneuver	689	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.4	0	5.8			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 689	- 985	-		
HCM Lane V/C Ratio	-	- 0.18	- 0.002	-		
HCM Control Delay (s)	-	- 11.4	0 8.7	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 0.7	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	28	38	491	103	2
Future Vol, veh/h	4	28	38	491	103	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	34	46	599	126	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	46	0	-	0	90	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	44	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1575	-	-	-	915	1029
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1575	-	-	-	912	1029
Mov Cap-2 Maneuver	-	-	-	-	912	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	984	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		9.6		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1575	-	-	-	912	1029
HCM Lane V/C Ratio	0.003	-	-	-	0.138	0.002
HCM Control Delay (s)	7.3	0	-	-	9.6	8.5
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Existing plus Project
Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	305.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	70	50	15	499	55	2	20	45	409	5	15
Future Vol, veh/h	7	70	50	15	499	55	2	20	45	409	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	96	68	21	684	75	3	27	62	560	7	21
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	759	0	0	164	0	0	928	951	130	959	948	722
Stage 1	-	-	-	-	-	-	150	150	-	764	764	-
Stage 2	-	-	-	-	-	-	778	801	-	195	184	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	862	-	-	1427	-	-	250	262	925 ~ 239	263	430	
Stage 1	-	-	-	-	-	-	857	777	- ~ 399	416	-	
Stage 2	-	-	-	-	-	-	392	400	-	811	751	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	862	-	-	1427	-	-	226	252	925 ~ 199	253	430	
Mov Cap-2 Maneuver	-	-	-	-	-	-	226	252	- ~ 199	253	-	
Stage 1	-	-	-	-	-	-	846	767	- ~ 394	405	-	
Stage 2	-	-	-	-	-	-	357	390	-	720	741	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.2			13.2			\$ 845.9		
HCM LOS							B			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	249	925	862	-	-	1427	-	-	200	430		
HCM Lane V/C Ratio	0.121	0.067	0.011	-	-	0.014	-	-	2.836	0.048		
HCM Control Delay (s)	21.4	9.2	9.2	0	-	7.6	0	-	\$ 876	13.8		
HCM Lane LOS	C	A	A	A	-	A	A	-	F	B		
HCM 95th %tile Q(veh)	0.4	0.2	0	-	-	0	-	-	50.1	0.1		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

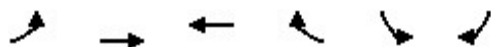
HCM 6th TWSC
4: Stoddard Wells Road & Driveway A

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	523	476	2	0	93
Future Vol, veh/h	0	523	476	2	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	568	517	2	0	101
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	518
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	562
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	562
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	562		
HCM Lane V/C Ratio	-	-	-	0.18		
HCM Control Delay (s)	-	-	-	12.8		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.7		

HCM 6th Signalized Intersection Summary 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Existing plus Project
Timing Plan: PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	222	301	276	5	9	202	
Future Volume (veh/h)	222	301	276	5	9	202	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	241	327	300	5	10	220	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	313	1021	439	7	14	317	
Arrive On Green	0.17	0.54	0.24	0.24	0.21	0.21	
Sat Flow, veh/h	1810	1900	1863	31	70	1542	
Grp Volume(v), veh/h	241	327	0	305	231	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1894	1619	0	
Q Serve(g_s), s	4.4	3.4	0.0	5.1	4.6	0.0	
Cycle Q Clear(g_c), s	4.4	3.4	0.0	5.1	4.6	0.0	
Prop In Lane	1.00			0.02	0.04	0.95	
Lane Grp Cap(c), veh/h	313	1021	0	447	332	0	
V/C Ratio(X)	0.77	0.32	0.00	0.68	0.69	0.00	
Avail Cap(c_a), veh/h	543	1792	0	975	833	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	13.8	4.5	0.0	12.2	12.9	0.0	
Incr Delay (d2), s/veh	4.0	0.2	0.0	1.8	2.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.6	0.4	0.0	1.6	1.6	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	17.8	4.7	0.0	14.0	15.5	0.0	
LnGrp LOS	B	A	A	B	B	A	
Approach Vol, veh/h		568	305		231		
Approach Delay, s/veh		10.3	14.0		15.5		
Approach LOS		B	B		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				23.3	11.7	10.5	12.8
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				33.0	18.0	10.5	18.0
Max Q Clear Time (g_c+l1), s				5.4	6.6	6.4	7.1
Green Ext Time (p_c), s				1.8	0.6	0.2	1.1
Intersection Summary							
HCM 6th Ctrl Delay			12.4				
HCM 6th LOS			B				

HCM 6th TWSC
6: Driveway A & Driveway B

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	0	2	1	0	63
Future Vol, veh/h	30	0	2	1	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	33	0	2	1	0	68
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	71	3	0	0	3	0
Stage 1	3	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	938	1087	-	-	1632	-
Stage 1	1025	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	938	1087	-	-	1632	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	1025	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 938		1632	-	
HCM Lane V/C Ratio	-	- 0.035		-	-	
HCM Control Delay (s)	-	- 9		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	

HCM 6th TWSC
7: Outer I-15 (New Alignment) & Driveway C

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	27	200	171	0
Future Vol, veh/h	0	40	27	200	171	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	43	29	217	186	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	461	186	186	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	562	861	1401	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	861	1401	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	0.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1401	-	861	-	-	
HCM Lane V/C Ratio	0.021	-	0.05	-	-	
HCM Control Delay (s)	7.6	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

HCM 6th TWSC
8: Outer I-15 (New Alignment) & Driveway D

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	27	173	159	0
Future Vol, veh/h	0	12	27	173	159	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	13	29	188	173	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	419	173	173	0	-	0
Stage 1	173	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	595	876	1416	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	581	876	1416	-	-	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1416	-	876	-	-	
HCM Lane V/C Ratio	0.021	-	0.015	-	-	
HCM Control Delay (s)	7.6	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
9: Outer I-15 (New Alignment) & Driveway E

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	20	28	144	140	0
Future Vol, veh/h	0	20	28	144	140	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	30	157	152	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	369	152	152	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	635	900	1441	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	620	900	1441	-	-	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1441	-	900	-	-	
HCM Lane V/C Ratio	0.021	-	0.024	-	-	
HCM Control Delay (s)	7.6	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
10: Outer I-15 (New Alignment) & Driveway F

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	27	117	112	0
Future Vol, veh/h	0	28	27	117	112	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	30	29	127	122	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	307	122	122	0	-	0
Stage 1	122	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	689	935	1478	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	675	935	1478	-	-	-
Mov Cap-2 Maneuver	675	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1478	-	935	-	-	
HCM Lane V/C Ratio	0.02	-	0.033	-	-	
HCM Control Delay (s)	7.5	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
11: Outer I-15 (New Alignment) & Driveway G

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	27	90	84	0
Future Vol, veh/h	0	28	27	90	84	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	30	29	98	91	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	247	91	91	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	746	972	1517	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	731	972	1517	-	-	-
Mov Cap-2 Maneuver	731	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1517	-	972	-	-	
HCM Lane V/C Ratio	0.019	-	0.031	-	-	
HCM Control Delay (s)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
12: Outer I-15 (New Alignment) & Driveway H

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	28	62	60	0
Future Vol, veh/h	0	24	28	62	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	26	30	67	65	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	192	65	65	0	-	0
Stage 1	65	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	801	1005	1550	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	785	1005	1550	-	-	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	2.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1550	-	1005	-	-	
HCM Lane V/C Ratio	0.02	-	0.026	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
13: Outer I-15 (New Alignment) & Driveway I

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	24	39	38	0
Future Vol, veh/h	0	23	24	39	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	25	26	42	41	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	135	41	41	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	863	1036	1581	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	848	1036	1581	-	-	-
Mov Cap-2 Maneuver	848	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1581	-	1036	-	-	
HCM Lane V/C Ratio	0.017	-	0.024	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
14: Outer I-15 (New Alignment) & Driveway J

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	15	24	23	0
Future Vol, veh/h	0	15	15	24	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	16	26	25	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	83	25	25	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	924	1057	1603	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	915	1057	1603	-	-	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1603	-	1057	-	-	
HCM Lane V/C Ratio	0.01	-	0.015	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Outer I-15 (New Alignment) & Driveway K

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	24	0	0	0
Future Vol, veh/h	0	23	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	25	26	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	53	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	960	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	945	1090	1635	-	-	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1635	-	1090	-	-	
HCM Lane V/C Ratio	0.016	-	0.023	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
16: Driveway L & Driveway K

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	0	8	16	0	7
Future Vol, veh/h	16	0	8	16	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	17	0	9	17	0	8
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	17	0	52	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1613	-	962	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1613	-	956	1068
Mov Cap-2 Maneuver	-	-	-	-	956	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	987	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	2.4		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1068	-	-	1613	-	
HCM Lane V/C Ratio	0.007	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
17: Driveway I & Driveway M

Existing plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	16	8	7	0
Future Vol, veh/h	0	16	16	8	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	17	9	8	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	26	0	-	0	39	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	17	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1601	-	-	-	978	1061
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1601	-	-	-	978	1061
Mov Cap-2 Maneuver	-	-	-	-	978	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1011	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1601	-	-	-	978	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Control Delay (s)	0	-	-	-	8.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Opening Year (2025)
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	126	0	0	237	3	3
Future Vol, veh/h	126	0	0	237	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	158	0	0	296	4	4
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	160	148	0	0	296	0
Stage 1	148	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	836	904	-	-	1277	-
Stage 1	884	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	833	904	-	-	1277	-
Mov Cap-2 Maneuver	833	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.3	0	3.9			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 833	- 1277	-		
HCM Lane V/C Ratio	-	- 0.189	- 0.003	-		
HCM Control Delay (s)	-	- 10.3	0 7.8	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 0.7	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Opening Year (2025)
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	30	55	238	121	13
Future Vol, veh/h	8	30	55	238	121	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	33	61	264	134	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	61	0	-	0	112	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1555	-	-	-	890	1010
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1555	-	-	-	885	1010
Mov Cap-2 Maneuver	-	-	-	-	885	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	977	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.5	0		9.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1555	-	-	-	885	1010
HCM Lane V/C Ratio	0.006	-	-	-	0.152	0.014
HCM Control Delay (s)	7.3	0	-	-	9.8	8.6
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Opening Year (2025)
Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	50.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	107	24	11	250	103	16	43	7	293	6	13
Future Vol, veh/h	5	107	24	11	250	103	16	43	7	293	6	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	143	32	15	333	137	21	57	9	391	8	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	175	0	0	617	673	159	638	621	402
Stage 1	-	-	-	-	-	-	173	173	-	432	432	-
Stage 2	-	-	-	-	-	-	444	500	-	206	189	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1102	-	-	1414	-	-	405	379	892	392	406	653
Stage 1	-	-	-	-	-	-	834	760	-	606	586	-
Stage 2	-	-	-	-	-	-	597	546	-	801	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1102	-	-	1414	-	-	382	371	892 ~	336	397	653
Mov Cap-2 Maneuver	-	-	-	-	-	-	382	371	- ~	336	397	-
Stage 1	-	-	-	-	-	-	828	755	-	602	577	-
Stage 2	-	-	-	-	-	-	564	538	-	727	743	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			16.3			137.3		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	374		892	1102	-	-	1414	-	-	337	653	
HCM Lane V/C Ratio	0.21		0.01	0.006	-	-	0.01	-	-	1.183	0.027	
HCM Control Delay (s)	17.2		9.1	8.3	0	-	7.6	0	-	142.8	10.7	
HCM Lane LOS	C		A	A	A	-	A	A	-	F	B	
HCM 95th %tile Q(veh)	0.8		0	0	-	-	0	-	-	16.7	0.1	
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Opening Year (2025)
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	160	0	0	429	2	0
Future Vol, veh/h	160	0	0	429	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	190	0	0	511	2	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	260	256	0	0	511	0
Stage 1	256	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	733	788	-	-	1065	-
Stage 1	791	-	-	-	-	-
Stage 2	1024	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	732	788	-	-	1065	-
Mov Cap-2 Maneuver	732	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.6	0	8.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 732	- 1065	-		
HCM Lane V/C Ratio	-	- 0.26	- 0.002	-		
HCM Control Delay (s)	-	- 11.6	0 8.4	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 1	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Opening Year (2025)
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	31	40	414	158	2
Future Vol, veh/h	4	31	40	414	158	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	38	49	505	193	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	49	0	-	0	97	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1571	-	-	-	907	1025
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	904	1025
Mov Cap-2 Maneuver	-	-	-	-	904	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	980	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1571	-	-	-	904	1025
HCM Lane V/C Ratio	0.003	-	-	-	0.213	0.002
HCM Control Delay (s)	7.3	0	-	-	10.1	8.5
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Opening Year (2025)
Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	307.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	128	51	14	423	103	2	21	45	408	5	15
Future Vol, veh/h	7	128	51	14	423	103	2	21	45	408	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	175	70	19	579	141	3	29	62	559	7	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	720	0	0	245	0	0	932	988	210	964	953	650
Stage 1	-	-	-	-	-	-	230	230	-	688	688	-
Stage 2	-	-	-	-	-	-	702	758	-	276	265	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	891	-	-	1333	-	-	249	249	835	~ 237	261	473
Stage 1	-	-	-	-	-	-	777	718	-	~ 440	450	-
Stage 2	-	-	-	-	-	-	432	418	-	735	693	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	891	-	-	1333	-	-	227	240	835	~ 194	251	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	240	-	~ 194	251	-
Stage 1	-	-	-	-	-	-	767	709	-	~ 434	439	-
Stage 2	-	-	-	-	-	-	397	408	-	645	684	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			14			\$ 875		
HCM LOS							B			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	239	835	891	-	-	1333	-	-	195	473
HCM Lane V/C Ratio	0.132	0.074	0.011	-	-	0.014	-	-	2.901	0.043
HCM Control Delay (s)	22.3	9.7	9.1	0	-	7.7	0	-	\$ 906.3	13
HCM Lane LOS	C	A	A	A	-	A	A	-	F	B
HCM 95th %tile Q(veh)	0.4	0.2	0	-	-	0	-	-	50.5	0.1

Notes												
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined							*: All major volume in platoon			

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	4.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	197	0	0	346	3	3
Future Vol, veh/h	197	0	0	346	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	246	0	0	433	4	4
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	229	217	0	0	433	0
Stage 1	217	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	764	828	-	-	1137	-
Stage 1	824	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	761	828	-	-	1137	-
Mov Cap-2 Maneuver	761	-	-	-	-	-
Stage 1	824	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12	0	4.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 761	- 1137	-		
HCM Lane V/C Ratio	-	- 0.324	- 0.003	-		
HCM Control Delay (s)	-	- 12	0 8.2	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 1.4	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	34	57	347	192	13
Future Vol, veh/h	8	34	57	347	192	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	9	38	63	386	213	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	63	0	-	0	119	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	56	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1553	-	-	-	882	1007
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1553	-	-	-	877	1007
Mov Cap-2 Maneuver	-	-	-	-	877	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		10.3		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1553	-	-	-	877	1007
HCM Lane V/C Ratio	0.006	-	-	-	0.243	0.014
HCM Control Delay (s)	7.3	0	-	-	10.4	8.6
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	513.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	182	24	13	361	127	16	43	11	555	6	13
Future Vol, veh/h	5	182	24	13	361	127	16	43	11	555	6	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	243	32	17	481	169	21	57	15	740	8	17
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	650	0	0	275	0	0	885	957	259	909	889	566
Stage 1	-	-	-	-	-	-	273	273	-	600	600	-
Stage 2	-	-	-	-	-	-	612	684	-	309	289	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	946	-	-	1300	-	-	268	260	785 ~ 258	285	528	
Stage 1	-	-	-	-	-	-	737	688	- ~ 491	493	-	
Stage 2	-	-	-	-	-	-	484	452	- ~ 705	677	-	
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	946	-	-	1300	-	-	248	252	785 ~ 204	276	528	
Mov Cap-2 Maneuver	-	-	-	-	-	-	248	252	- ~ 204	276	-	
Stage 1	-	-	-	-	-	-	730	682	- ~ 487	483	-	
Stage 2	-	-	-	-	-	-	451	443	- ~ 628	671	-	
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			23.3			\$ 1210.4		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	251		785	946	-	-	1300	-	-	205	528	
HCM Lane V/C Ratio	0.313		0.019	0.007	-	-	0.013	-	-	3.649	0.033	
HCM Control Delay (s)	25.8		9.7	8.8	0	-	7.8	0		\$ 1238.2	12	
HCM Lane LOS	D		A	A	A	-	A	A	-	F	B	
HCM 95th %tile Q(veh)	1.3		0.1	0	-	-	0	-	-	71.8	0.1	
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

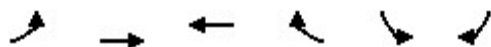
HCM 6th TWSC
4: Stoddard Wells Road & Driveway A

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	506	216	5	0	32
Future Vol, veh/h	0	506	216	5	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	550	235	5	0	35
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	238
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	806
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	806
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	806		
HCM Lane V/C Ratio	-	-	-	0.043		
HCM Control Delay (s)	-	-	-	9.7		
HCM Lane LOS	-	-	-	A		
HCM 95th %tile Q(veh)	-	-	-	0.1		

HCM 6th Signalized Intersection Summary 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	341	165	116	5	4	105	
Future Volume (veh/h)	341	165	116	5	4	105	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	371	179	126	5	4	114	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	493	1065	266	11	9	243	
Arrive On Green	0.27	0.56	0.15	0.15	0.16	0.16	
Sat Flow, veh/h	1810	1900	1815	72	54	1550	
Grp Volume(v), veh/h	371	179	0	131	119	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1887	1618	0	
Q Serve(g_s), s	6.0	1.5	0.0	2.0	2.1	0.0	
Cycle Q Clear(g_c), s	6.0	1.5	0.0	2.0	2.1	0.0	
Prop In Lane	1.00			0.04	0.03	0.96	
Lane Grp Cap(c), veh/h	493	1065	0	277	254	0	
V/C Ratio(X)	0.75	0.17	0.00	0.47	0.47	0.00	
Avail Cap(c_a), veh/h	1732	3160	0	1066	914	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	10.6	3.4	0.0	12.5	12.2	0.0	
Incr Delay (d2), s/veh	2.3	0.1	0.0	1.3	1.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.7	0.1	0.0	0.7	0.7	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	12.9	3.5	0.0	13.7	13.6	0.0	
LnGrp LOS	B	A	A	B	B	A	
Approach Vol, veh/h		550	131	119			
Approach Delay, s/veh		9.9	13.7	13.6			
Approach LOS		A	B	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				22.4	9.5	13.2	9.2
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				53.0	18.0	30.5	18.0
Max Q Clear Time (g_c+l1), s				3.5	4.1	8.0	4.0
Green Ext Time (p_c), s				1.0	0.3	1.0	0.4
Intersection Summary							
HCM 6th Ctrl Delay			11.0				
HCM 6th LOS			B				

HCM 6th TWSC
6: Driveway A & Driveway B

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	3	2	0	23
Future Vol, veh/h	10	0	3	2	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	3	2	0	25
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	29	4	0	0	5	0
Stage 1	4	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	991	1085	-	-	1630	-
Stage 1	1024	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	991	1085	-	-	1630	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	8.7		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	991	1630	-
HCM Lane V/C Ratio		-	-	0.011	-	-
HCM Control Delay (s)		-	-	8.7	0	-
HCM Lane LOS		-	-	A	A	-
HCM 95th %tile Q(veh)		-	-	0	0	-

HCM 6th TWSC
7: Outer I-15 (New Alignment) & Driveway C

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	49	297	95	0
Future Vol, veh/h	0	14	49	297	95	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	15	53	323	103	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	532	103	103	0	-	0
Stage 1	103	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	512	957	1502	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	490	957	1502	-	-	-
Mov Cap-2 Maneuver	490	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1502	-	957	-	-	
HCM Lane V/C Ratio	0.035	-	0.016	-	-	
HCM Control Delay (s)	7.5	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
8: Outer I-15 (New Alignment) & Driveway D

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	49	249	91	0
Future Vol, veh/h	0	4	49	249	91	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	53	271	99	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	476	99	99	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	551	962	1507	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	528	962	1507	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1507	-	962	-	-	
HCM Lane V/C Ratio	0.035	-	0.005	-	-	
HCM Control Delay (s)	7.5	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
9: Outer I-15 (New Alignment) & Driveway E

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	48	200	83	0
Future Vol, veh/h	0	7	48	200	83	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	52	217	90	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	411	90	90	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	601	973	1518	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	578	973	1518	-	-	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1518	-	973	-	-	
HCM Lane V/C Ratio	0.034	-	0.008	-	-	
HCM Control Delay (s)	7.5	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
10: Outer I-15 (New Alignment) & Driveway F

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	151	73	0
Future Vol, veh/h	0	9	48	151	73	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	164	79	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	347	79	79	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	654	987	1532	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	630	987	1532	-	-	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1532	-	987	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
11: Outer I-15 (New Alignment) & Driveway G

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	103	64	0
Future Vol, veh/h	0	9	48	103	64	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	112	70	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	286	70	70	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	709	998	1544	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	683	998	1544	-	-	-
Mov Cap-2 Maneuver	683	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1544	-	998	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
12: Outer I-15 (New Alignment) & Driveway H

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	55	55	0
Future Vol, veh/h	0	9	48	55	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	60	60	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	224	60	60	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	769	1011	1556	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	742	1011	1556	-	-	-
Mov Cap-2 Maneuver	742	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	3.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1556	-	1011	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
13: Outer I-15 (New Alignment) & Driveway I

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	22	21	34	35	0
Future Vol, veh/h	0	22	21	34	35	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	24	23	37	38	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	121	38	38	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	879	1040	1585	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	866	1040	1585	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1585	-	1040	-	-	
HCM Lane V/C Ratio	0.014	-	0.023	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
14: Outer I-15 (New Alignment) & Driveway J

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	14	21	22	0
Future Vol, veh/h	0	13	14	21	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	15	23	24	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	77	24	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	931	1058	1604	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1058	1604	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	2.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	1058	-	-	
HCM Lane V/C Ratio	0.009	-	0.013	-	-	
HCM Control Delay (s)	7.3	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Outer I-15 (New Alignment) & Driveway K

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	22	21	0	0	0
Future Vol, veh/h	0	22	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	24	23	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	47	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	968	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	954	1090	1635	-	-	-
Mov Cap-2 Maneuver	954	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1635	-	1090	-	-	
HCM Lane V/C Ratio	0.014	-	0.022	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
16: Driveway L & Driveway K

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	0	7	14	0	7
Future Vol, veh/h	15	0	7	14	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	0	8	15	0	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	47	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1615	-	968	1069
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	963	1069
Mov Cap-2 Maneuver	-	-	-	-	963	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	992	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.4		8.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1069	-	-	1615	-	
HCM Lane V/C Ratio	0.007	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
17: Driveway I & Driveway M

Opening Year (2025) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	14	7	7	0
Future Vol, veh/h	0	15	14	7	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	15	8	8	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	23	0	-	0	35	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1605	-	-	-	983	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1605	-	-	-	983	1065
Mov Cap-2 Maneuver	-	-	-	-	983	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1012	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1605	-	-	-	983	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Control Delay (s)	0	-	-	-	8.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	211	0	0	663	2	1
Future Vol, veh/h	211	0	0	663	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	251	0	0	789	2	1
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	400	395	0	0	789	0
Stage 1	395	-	-	-	-	-
Stage 2	5	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	610	659	-	-	840	-
Stage 1	685	-	-	-	-	-
Stage 2	1023	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	609	659	-	-	840	-
Mov Cap-2 Maneuver	609	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15	0	6.2			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 609	- 840	-		
HCM Lane V/C Ratio	-	- 0.412	- 0.003	-		
HCM Control Delay (s)	-	- 15	0 9.3	0		
HCM Lane LOS	-	- C	A A	A		
HCM 95th %tile Q(veh)	-	- 2	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	34	44	648	209	2
Future Vol, veh/h	4	34	44	648	209	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	41	54	790	255	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	54	0	-	0	105	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1564	-	-	-	898	1019
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1564	-	-	-	895	1019
Mov Cap-2 Maneuver	-	-	-	-	895	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	977	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		10.6		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1564	-	-	-	895	1019
HCM Lane V/C Ratio	0.003	-	-	-	0.285	0.002
HCM Control Delay (s)	7.3	0	-	-	10.6	8.5
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.2	0

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	1328.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	182	51	18	661	156	2	21	48	573	5	15
Future Vol, veh/h	7	182	51	18	661	156	2	21	48	573	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	249	70	25	905	214	3	29	66	785	7	21
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	1119	0	0	319	0	0	1380	1473	284	1414	1401	1012
Stage 1	-	-	-	-	-	-	304	304	-	1062	1062	-
Stage 2	-	-	-	-	-	-	1076	1169	-	352	339	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	632	-	-	1252	-	-	123	128	760	~ 116	141	293
Stage 1	-	-	-	-	-	-	710	667	-	~ 273	303	-
Stage 2	-	-	-	-	-	-	268	269	-	~ 669	643	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	632	-	-	1252	-	-	104	119	760	~ 82	131	293
Mov Cap-2 Maneuver	-	-	-	-	-	-	104	119	-	~ 82	131	-
Stage 1	-	-	-	-	-	-	697	654	-	~ 268	286	-
Stage 2	-	-	-	-	-	-	230	254	-	~ 573	631	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.3		0.2			21.9			\$ 3891.9			
HCM LOS						C			F			
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	118 760		632	-	-	1252	-	-	82	293		
HCM Lane V/C Ratio	0.267 0.087		0.015	-	-	0.02	-	-	9.656	0.07		
HCM Control Delay (s)	46.3 10.2		10.8	0	-	7.9	0		\$ 3992.4	18.2		
HCM Lane LOS	E B		B	A	-	A	A	-	F	C		
HCM 95th %tile Q(veh)	1 0.3		0	-	-	0.1	-	-	92	0.2		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

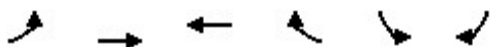
HCM 6th TWSC
4: Stoddard Wells Road & Driveway A

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	531	483	2	0	93
Future Vol, veh/h	0	531	483	2	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	577	525	2	0	101
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	526
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	556
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	556
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	556		
HCM Lane V/C Ratio	-	-	-	0.182		
HCM Control Delay (s)	-	-	-	12.9		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.7		

HCM 6th Signalized Intersection Summary 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	222	309	283	5	9	202	
Future Volume (veh/h)	222	309	283	5	9	202	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	241	336	308	5	10	220	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	324	1034	445	7	14	315	
Arrive On Green	0.18	0.54	0.24	0.24	0.20	0.20	
Sat Flow, veh/h	1810	1900	1864	30	70	1542	
Grp Volume(v), veh/h	241	336	0	313	231	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1895	1619	0	
Q Serve(g_s), s	4.5	3.5	0.0	5.4	4.7	0.0	
Cycle Q Clear(g_c), s	4.5	3.5	0.0	5.4	4.7	0.0	
Prop In Lane	1.00			0.02	0.04	0.95	
Lane Grp Cap(c), veh/h	324	1034	0	452	330	0	
V/C Ratio(X)	0.74	0.33	0.00	0.69	0.70	0.00	
Avail Cap(c_a), veh/h	1039	2288	0	955	816	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	13.9	4.5	0.0	12.4	13.2	0.0	
Incr Delay (d2), s/veh	3.4	0.2	0.0	1.9	2.7	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.6	0.4	0.0	1.7	1.6	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	17.3	4.7	0.0	14.3	15.9	0.0	
LnGrp LOS	B	A	A	B	B	A	
Approach Vol, veh/h		577	313		231		
Approach Delay, s/veh		9.9	14.3		15.9		
Approach LOS		A	B		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				23.9	11.8	10.9	13.0
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				43.0	18.0	20.5	18.0
Max Q Clear Time (g_c+l1), s				5.5	6.7	6.5	7.4
Green Ext Time (p_c), s				1.9	0.6	0.5	1.2
Intersection Summary							
HCM 6th Ctrl Delay			12.4				
HCM 6th LOS			B				

HCM 6th TWSC
6: Driveway A & Driveway B

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	0	2	1	0	63
Future Vol, veh/h	30	0	2	1	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	33	0	2	1	0	68
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	71	3	0	0	3	0
Stage 1	3	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	938	1087	-	-	1632	-
Stage 1	1025	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	938	1087	-	-	1632	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	1025	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	938	1632	-	
HCM Lane V/C Ratio	-	-	0.035	-	-	
HCM Control Delay (s)	-	-	9	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

HCM 6th TWSC
7: Outer I-15 (New Alignment) & Driveway C

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	27	200	171	0
Future Vol, veh/h	0	40	27	200	171	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	43	29	217	186	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	461	186	186	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	562	861	1401	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	861	1401	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	0.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1401	-	861	-	-	
HCM Lane V/C Ratio	0.021	-	0.05	-	-	
HCM Control Delay (s)	7.6	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

HCM 6th TWSC
8: Outer I-15 (New Alignment) & Driveway D

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	27	173	159	0
Future Vol, veh/h	0	12	27	173	159	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	13	29	188	173	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	419	173	173	0	-	0
Stage 1	173	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	595	876	1416	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	581	876	1416	-	-	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1416	-	876	-	-	
HCM Lane V/C Ratio	0.021	-	0.015	-	-	
HCM Control Delay (s)	7.6	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
9: Outer I-15 (New Alignment) & Driveway E

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	20	28	144	140	0
Future Vol, veh/h	0	20	28	144	140	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	30	157	152	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	369	152	152	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	635	900	1441	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	620	900	1441	-	-	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1441	-	900	-	-	
HCM Lane V/C Ratio	0.021	-	0.024	-	-	
HCM Control Delay (s)	7.6	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
10: Outer I-15 (New Alignment) & Driveway F

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	27	117	112	0
Future Vol, veh/h	0	28	27	117	112	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	30	29	127	122	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	307	122	122	0	-	0
Stage 1	122	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	689	935	1478	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	675	935	1478	-	-	-
Mov Cap-2 Maneuver	675	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1478	-	935	-	-	
HCM Lane V/C Ratio	0.02	-	0.033	-	-	
HCM Control Delay (s)	7.5	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
11: Outer I-15 (New Alignment) & Driveway G

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	27	90	84	0
Future Vol, veh/h	0	28	27	90	84	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	30	29	98	91	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	247	91	91	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	746	972	1517	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	731	972	1517	-	-	-
Mov Cap-2 Maneuver	731	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1517	-	972	-	-	
HCM Lane V/C Ratio	0.019	-	0.031	-	-	
HCM Control Delay (s)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
12: Outer I-15 (New Alignment) & Driveway H

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	28	62	60	0
Future Vol, veh/h	0	24	28	62	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	26	30	67	65	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	192	65	65	0	-	0
Stage 1	65	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	801	1005	1550	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	785	1005	1550	-	-	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	2.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1550	-	1005	-	-	
HCM Lane V/C Ratio	0.02	-	0.026	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
13: Outer I-15 (New Alignment) & Driveway I

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	24	39	38	0
Future Vol, veh/h	0	23	24	39	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	25	26	42	41	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	135	41	41	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	863	1036	1581	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	848	1036	1581	-	-	-
Mov Cap-2 Maneuver	848	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1581	-	1036	-	-	
HCM Lane V/C Ratio	0.017	-	0.024	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
14: Outer I-15 (New Alignment) & Driveway J

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	15	24	23	0
Future Vol, veh/h	0	15	15	24	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	16	26	25	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	83	25	25	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	924	1057	1603	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	915	1057	1603	-	-	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1603	-	1057	-	-	
HCM Lane V/C Ratio	0.01	-	0.015	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Outer I-15 (New Alignment) & Driveway K

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	24	0	0	0
Future Vol, veh/h	0	23	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	25	26	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	53	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	960	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	945	1090	1635	-	-	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1635	-	1090	-	-	
HCM Lane V/C Ratio	0.016	-	0.023	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
16: Driveway L & Driveway K

Opening Year (2025) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	0	8	16	0	7
Future Vol, veh/h	16	0	8	16	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	17	0	9	17	0	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	17	0	52	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1613	-	962	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1613	-	956	1068
Mov Cap-2 Maneuver	-	-	-	-	956	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	987	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.4		8.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1068	-	-	1613	-	
HCM Lane V/C Ratio	0.007	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	16	8	7	0
Future Vol, veh/h	0	16	16	8	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	17	9	8	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	26	0	-	0	39	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	17	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1601	-	-	-	978	1061
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1601	-	-	-	978	1061
Mov Cap-2 Maneuver	-	-	-	-	978	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1011	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1601	-	-	-	978	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Control Delay (s)	0	-	-	-	8.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Horizon Year (2040)
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	227	0	10	420	12	12
Future Vol, veh/h	227	0	10	420	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	239	0	11	442	13	13
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	271	232	0	0	453	0
Stage 1	232	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	723	812	-	-	1118	-
Stage 1	811	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	714	812	-	-	1118	-
Mov Cap-2 Maneuver	714	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	977	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.6	0	4.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 714	- 1118	-		
HCM Lane V/C Ratio	-	- 0.335	- 0.011	-		
HCM Control Delay (s)	-	- 12.6	0 8.3	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 1.5	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Horizon Year (2040)
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	38	88	377	208	31
Future Vol, veh/h	15	38	88	377	208	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	40	93	397	219	33
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	93	0	-	0	165	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	72	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1514	-	-	-	830	970
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	821	970
Mov Cap-2 Maneuver	-	-	-	-	821	-
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	956	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.1	0		10.7		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1514	-	-	-	821	970
HCM Lane V/C Ratio	0.01	-	-	-	0.267	0.034
HCM Control Delay (s)	7.4	0	-	-	11	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.1	0.1

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Horizon Year (2040)
Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	239											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Vol, veh/h	26	170	31	19	404	181	16	47	16	506	14	32
Future Vol, veh/h	26	170	31	19	404	181	16	47	16	506	14	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	27	179	33	20	425	191	17	49	17	533	15	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	616	0	0	212	0	0	835	906	196	844	827	521
Stage 1	-	-	-	-	-	-	250	250	-	561	561	-
Stage 2	-	-	-	-	-	-	585	656	-	283	266	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	974	-	-	1370	-	-	289	278	850	~ 285	309	559
Stage 1	-	-	-	-	-	-	759	704	-	~ 516	513	-
Stage 2	-	-	-	-	-	-	501	465	-	728	692	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	974	-	-	1370	-	-	250	263	850	~ 229	292	559
Mov Cap-2 Maneuver	-	-	-	-	-	-	250	263	-	~ 229	292	-
Stage 1	-	-	-	-	-	-	735	681	-	~ 499	501	-
Stage 2	-	-	-	-	-	-	446	454	-	641	670	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.2	20.6	\$ 629.5
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	260	850	974	-	-	1370	-	-	230	559
HCM Lane V/C Ratio	0.255	0.02	0.028	-	-	0.015	-	-	2.38	0.06
HCM Control Delay (s)	23.5	9.3	8.8	0	-	7.7	0	-	\$ 667.5	11.9
HCM Lane LOS	C	A	A	A	-	A	A	-	F	B
HCM 95th %tile Q(veh)	1	0.1	0.1	-	-	0	-	-	44.3	0.2

Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Horizon Year (2040)
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	126	0	10	555	10	10
Future Vol, veh/h	126	0	10	555	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	133	0	11	584	11	11
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	336	303	0	0	595	0
Stage 1	303	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	663	741	-	-	991	-
Stage 1	754	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	656	741	-	-	991	-
Mov Cap-2 Maneuver	656	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.9	0	4.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 656	- 991	-		
HCM Lane V/C Ratio	-	- 0.202	- 0.011	-		
HCM Control Delay (s)	-	- 11.9	0 8.7	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 0.8	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Horizon Year (2040)
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	45	65	543	173	18
Future Vol, veh/h	11	45	65	543	173	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	47	68	572	182	19
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	68	0	-	0	139	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	71	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1546	-	-	-	859	1001
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	957	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1546	-	-	-	852	1001
Mov Cap-2 Maneuver	-	-	-	-	852	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	957	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		10.2		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1546	-	-	-	852	1001
HCM Lane V/C Ratio	0.007	-	-	-	0.214	0.019
HCM Control Delay (s)	7.3	0	-	-	10.4	8.7
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0.1

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Horizon Year (2040)
Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	318.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	166	62	27	562	96	10	24	52	530	11	34
Future Vol, veh/h	12	166	62	27	562	96	10	24	52	530	11	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	175	65	28	592	101	11	25	55	558	12	36
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	693	0	0	240	0	0	957	983	208	973	965	643
Stage 1	-	-	-	-	-	-	234	234	-	699	699	-
Stage 2	-	-	-	-	-	-	723	749	-	274	266	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	912	-	-	1339	-	-	239	251	837	~ 233	257	477
Stage 1	-	-	-	-	-	-	774	715	-	~ 434	445	-
Stage 2	-	-	-	-	-	-	421	422	-	736	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	912	-	-	1339	-	-	205	238	837	~ 192	244	477
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	238	-	~ 192	244	-
Stage 1	-	-	-	-	-	-	761	703	-	~ 427	429	-
Stage 2	-	-	-	-	-	-	366	407	-	652	680	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.3			15.2			\$ 874.7		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	
Capacity (veh/h)	227		837	912	-	-	1339	-	-	193	477	
HCM Lane V/C Ratio	0.158		0.065	0.014	-	-	0.021	-	-	2.951	0.075	
HCM Control Delay (s)	23.8		9.6	9	0	-	7.7	0	-	\$ 928.8	13.2	
HCM Lane LOS	C		A	A	A	-	A	A	-	F	B	
HCM 95th %tile Q(veh)	0.5		0.2	0	-	-	0.1	-	-	51.2	0.2	
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	5.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	298	0	10	529	12	12
Future Vol, veh/h	298	0	10	529	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	314	0	11	557	13	13
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	329	290	0	0	568	0
Stage 1	290	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	670	754	-	-	1014	-
Stage 1	764	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	661	754	-	-	1014	-
Mov Cap-2 Maneuver	661	-	-	-	-	-
Stage 1	764	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.3	0	4.3			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 661	- 1014	-		
HCM Lane V/C Ratio	-	- 0.475	- 0.012	-		
HCM Control Delay (s)	-	- 15.3	0 8.6	0		
HCM Lane LOS	-	- C	A A	A		
HCM 95th %tile Q(veh)	-	- 2.6	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	42	90	486	279	31
Future Vol, veh/h	15	42	90	486	279	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	44	95	512	294	33
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	95	0	-	0	171	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	76	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1512	-	-	-	824	967
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1512	-	-	-	815	967
Mov Cap-2 Maneuver	-	-	-	-	815	-
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	952	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		11.6		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1512	-	-	-	815	967
HCM Lane V/C Ratio	0.01	-	-	-	0.36	0.034
HCM Control Delay (s)	7.4	0	-	-	11.9	8.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.6	0.1

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	825.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	245	31	21	515	205	16	47	20	768	14	32
Future Vol, veh/h	26	245	31	21	515	205	16	47	20	768	14	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	27	258	33	22	542	216	17	49	21	808	15	34
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	758	0	0	291	0	0	1048	1131	275	1058	1039	650
Stage 1	-	-	-	-	-	-	329	329	-	694	694	-
Stage 2	-	-	-	-	-	-	719	802	-	364	345	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	862	-	-	1282	-	-	208	205	769	~ 204	232	473
Stage 1	-	-	-	-	-	-	688	650	-	~ 436	447	-
Stage 2	-	-	-	-	-	-	423	399	-	~ 659	640	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	862	-	-	1282	-	-	174	191	769	~ 151	216	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	191	-	~ 151	216	-
Stage 1	-	-	-	-	-	-	662	625	-	~ 419	433	-
Stage 2	-	-	-	-	-	-	368	387	-	~ 568	616	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.2			28.7			\$ 1964.5		
HCM LOS							D			F		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	186	769	862	-	-	1282	-	-	152	473		
HCM Lane V/C Ratio	0.357	0.027	0.032	-	-	0.017	-	-	5.416	0.071		
HCM Control Delay (s)	34.7	9.8	9.3	0	-	7.9	0		\$ 2044.3	13.2		
HCM Lane LOS	D	A	A	A	-	A	A	-	F	B		
HCM 95th %tile Q(veh)	1.5	0.1	0.1	-	-	0.1	-	-	87.4	0.2		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

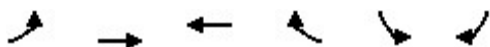
HCM 6th TWSC
4: Stoddard Wells Road & Driveway A

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	788	454	5	0	32
Future Vol, veh/h	0	788	454	5	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	857	493	5	0	35
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	496
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	578
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	578
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		11.6		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	578		
HCM Lane V/C Ratio	-	-	-	0.06		
HCM Control Delay (s)	-	-	-	11.6		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.2		

HCM 6th Signalized Intersection Summary 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	341	447	354	5	4	105	
Future Volume (veh/h)	341	447	354	5	4	105	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	371	486	385	5	4	114	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	460	1221	512	7	7	198	
Arrive On Green	0.25	0.64	0.27	0.27	0.13	0.13	
Sat Flow, veh/h	1810	1900	1871	24	54	1550	
Grp Volume(v), veh/h	371	486	0	390	119	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1896	1618	0	
Q Serve(g_s), s	7.5	4.8	0.0	7.4	2.7	0.0	
Cycle Q Clear(g_c), s	7.5	4.8	0.0	7.4	2.7	0.0	
Prop In Lane	1.00			0.01	0.03	0.96	
Lane Grp Cap(c), veh/h	460	1221	0	519	207	0	
V/C Ratio(X)	0.81	0.40	0.00	0.75	0.58	0.00	
Avail Cap(c_a), veh/h	716	1843	0	871	743	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	13.7	3.4	0.0	13.0	16.1	0.0	
Incr Delay (d2), s/veh	3.8	0.2	0.0	2.2	2.5	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.6	0.3	0.0	2.5	1.0	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	17.5	3.6	0.0	15.2	18.6	0.0	
LnGrp LOS	B	A	A	B	B	A	
Approach Vol, veh/h		857	390	119			
Approach Delay, s/veh		9.6	15.2	18.6			
Approach LOS		A	B	B			
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				29.7	9.5	14.5	15.2
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				38.0	18.0	15.5	18.0
Max Q Clear Time (g_c+l1), s				6.8	4.7	9.5	9.4
Green Ext Time (p_c), s				2.9	0.3	0.6	1.4
Intersection Summary							
HCM 6th Ctrl Delay			12.0				
HCM 6th LOS			B				

HCM 6th TWSC
6: Driveway A & Driveway B

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	3	2	0	23
Future Vol, veh/h	10	0	3	2	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	3	2	0	25
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	29	4	0	0	5	0
Stage 1	4	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	991	1085	-	-	1630	-
Stage 1	1024	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	991	1085	-	-	1630	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1024	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.7	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	991	1630	-	
HCM Lane V/C Ratio	-	-	0.011	-	-	
HCM Control Delay (s)	-	-	8.7	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

HCM 6th TWSC
7: Outer I-15 (New Alignment) & Driveway C

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	49	297	95	0
Future Vol, veh/h	0	14	49	297	95	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	15	53	323	103	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	532	103	103	0	-	0
Stage 1	103	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	512	957	1502	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	490	957	1502	-	-	-
Mov Cap-2 Maneuver	490	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1502	-	957	-	-	
HCM Lane V/C Ratio	0.035	-	0.016	-	-	
HCM Control Delay (s)	7.5	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
8: Outer I-15 (New Alignment) & Driveway D

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	49	249	91	0
Future Vol, veh/h	0	4	49	249	91	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	53	271	99	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	476	99	99	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	551	962	1507	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	528	962	1507	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1507	-	962	-	-	
HCM Lane V/C Ratio	0.035	-	0.005	-	-	
HCM Control Delay (s)	7.5	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
9: Outer I-15 (New Alignment) & Driveway E

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	48	200	83	0
Future Vol, veh/h	0	7	48	200	83	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	8	52	217	90	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	411	90	90	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	601	973	1518	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	578	973	1518	-	-	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1518	-	973	-	-	
HCM Lane V/C Ratio	0.034	-	0.008	-	-	
HCM Control Delay (s)	7.5	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
10: Outer I-15 (New Alignment) & Driveway F

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	151	73	0
Future Vol, veh/h	0	9	48	151	73	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	164	79	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	347	79	79	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	654	987	1532	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	630	987	1532	-	-	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	1.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1532	-	987	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
11: Outer I-15 (New Alignment) & Driveway G

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	103	64	0
Future Vol, veh/h	0	9	48	103	64	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	112	70	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	286	70	70	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	709	998	1544	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	683	998	1544	-	-	-
Mov Cap-2 Maneuver	683	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1544	-	998	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
12: Outer I-15 (New Alignment) & Driveway H

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	48	55	55	0
Future Vol, veh/h	0	9	48	55	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	10	52	60	60	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	224	60	60	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	769	1011	1556	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	742	1011	1556	-	-	-
Mov Cap-2 Maneuver	742	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	3.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1556	-	1011	-	-	
HCM Lane V/C Ratio	0.034	-	0.01	-	-	
HCM Control Delay (s)	7.4	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
13: Outer I-15 (New Alignment) & Driveway I

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	22	21	34	35	0
Future Vol, veh/h	0	22	21	34	35	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	24	23	37	38	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	121	38	38	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	83	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	879	1040	1585	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	866	1040	1585	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	975	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1585	-	1040	-	-	
HCM Lane V/C Ratio	0.014	-	0.023	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
14: Outer I-15 (New Alignment) & Driveway J

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	13	14	21	22	0
Future Vol, veh/h	0	13	14	21	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	14	15	23	24	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	77	24	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	931	1058	1604	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1058	1604	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	2.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1604	-	1058	-	-	
HCM Lane V/C Ratio	0.009	-	0.013	-	-	
HCM Control Delay (s)	7.3	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Outer I-15 (New Alignment) & Driveway K

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	22	21	0	0	0
Future Vol, veh/h	0	22	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	24	23	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	47	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	968	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	954	1090	1635	-	-	-
Mov Cap-2 Maneuver	954	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1635	-	1090	-	-	
HCM Lane V/C Ratio	0.014	-	0.022	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
16: Driveway L & Driveway K

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	0	7	14	0	7
Future Vol, veh/h	15	0	7	14	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	0	8	15	0	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	47	16
Stage 1	-	-	-	-	16	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1615	-	968	1069
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1615	-	963	1069
Mov Cap-2 Maneuver	-	-	-	-	963	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	992	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.4		8.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1069	-	-	1615	-	
HCM Lane V/C Ratio	0.007	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
17: Driveway I & Driveway M

Horizon Year (2040) plus Project
Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	14	7	7	0
Future Vol, veh/h	0	15	14	7	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	15	8	8	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	23	0	-	0	35	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1605	-	-	-	983	1065
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1605	-	-	-	983	1065
Mov Cap-2 Maneuver	-	-	-	-	983	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1012	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1605	-	-	-	983	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Control Delay (s)	0	-	-	-	8.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
1: Quarry Road & I-15 SB Ramps

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	177	0	10	789	10	10
Future Vol, veh/h	177	0	10	789	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	25	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	186	0	11	831	11	11
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	460	427	0	0	842	0
Stage 1	427	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	563	632	-	-	802	-
Stage 1	662	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	555	632	-	-	802	-
Mov Cap-2 Maneuver	555	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.7	0	4.8			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 555	- 802	-		
HCM Lane V/C Ratio	-	- 0.336	- 0.013	-		
HCM Control Delay (s)	-	- 14.7	0 9.5	0		
HCM Lane LOS	-	- B	A A	A		
HCM 95th %tile Q(veh)	-	- 1.5	- 0	-		

HCM 6th TWSC
2: Stoddard Wells Road & Quarry Road

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Vol, veh/h	11	48	69	777	224	18
Future Vol, veh/h	11	48	69	777	224	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	50	0	25
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	51	73	818	236	19
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	73	0	-	0	148	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1540	-	-	-	849	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1540	-	-	-	842	995
Mov Cap-2 Maneuver	-	-	-	-	842	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	953	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.4	0		10.7		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1540	-	-	-	842	995
HCM Lane V/C Ratio	0.008	-	-	-	0.28	0.019
HCM Control Delay (s)	7.4	0	-	-	10.9	8.7
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	1.1	0.1

HCM 6th TWSC
3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	989.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	↕
Traffic Vol, veh/h	12	220	62	31	800	149	10	24	55	695	11	34
Future Vol, veh/h	12	220	62	31	800	149	10	24	55	695	11	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	25	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	232	65	33	842	157	11	25	58	732	12	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	999	0	0	297	0	0	1302	1356	265	1319	1310	921
Stage 1	-	-	-	-	-	-	291	291	-	987	987	-
Stage 2	-	-	-	-	-	-	1011	1065	-	332	323	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	701	-	-	1276	-	-	139	151	779	~ 135	160	331
Stage 1	-	-	-	-	-	-	721	675	-	~ 300	328	-
Stage 2	-	-	-	-	-	-	291	302	-	~ 686	654	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	701	-	-	1276	-	-	109	139	779	~ 101	147	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	109	139	-	~ 101	147	-
Stage 1	-	-	-	-	-	-	705	660	-	~ 293	308	-
Stage 2	-	-	-	-	-	-	235	284	-	~ 597	640	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	22.7	\$ 2808
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	129	779	701	-	-	1276	-	-	101	331
HCM Lane V/C Ratio	0.277	0.074	0.018	-	-	0.026	-	-	7.358	0.108
HCM Control Delay (s)	43.3	10	10.2	0	-	7.9	0	\$ 2942.4	17.2	
HCM Lane LOS	E	B	B	A	-	A	A	-	F	C
HCM 95th %tile Q(veh)	1.1	0.2	0.1	-	-	0.1	-	-	83.6	0.4

Notes												
~: Volume exceeds capacity			\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon			

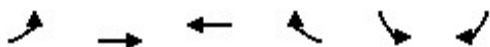
HCM 6th TWSC
4: Stoddard Wells Road & Driveway A

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↑
Traffic Vol, veh/h	0	694	625	2	0	93
Future Vol, veh/h	0	694	625	2	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	754	679	2	0	101
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	680
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	454
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	454
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		15.2		
HCM LOS	C					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	454		
HCM Lane V/C Ratio	-	-	-	0.223		
HCM Control Delay (s)	-	-	-	15.2		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0.8		

HCM 6th Signalized Intersection Summary 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	222	472	425	5	9	202	
Future Volume (veh/h)	222	472	425	5	9	202	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	
Adj Flow Rate, veh/h	241	513	462	5	10	220	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	0	0	0	0	0	0	
Cap, veh/h	305	1114	580	6	14	302	
Arrive On Green	0.17	0.59	0.31	0.31	0.20	0.20	
Sat Flow, veh/h	1810	1900	1876	20	70	1542	
Grp Volume(v), veh/h	241	513	0	467	231	0	
Grp Sat Flow(s),veh/h/ln	1810	1900	0	1896	1619	0	
Q Serve(g_s), s	5.3	6.3	0.0	9.3	5.5	0.0	
Cycle Q Clear(g_c), s	5.3	6.3	0.0	9.3	5.5	0.0	
Prop In Lane	1.00			0.01	0.04	0.95	
Lane Grp Cap(c), veh/h	305	1114	0	586	317	0	
V/C Ratio(X)	0.79	0.46	0.00	0.80	0.73	0.00	
Avail Cap(c_a), veh/h	416	1472	0	826	745	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	0.00	
Uniform Delay (d), s/veh	16.5	4.8	0.0	13.1	15.6	0.0	
Incr Delay (d2), s/veh	7.1	0.3	0.0	3.7	3.2	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.3	0.9	0.0	3.3	2.0	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	23.5	5.1	0.0	16.8	18.8	0.0	
LnGrp LOS	C	A	A	B	B	A	
Approach Vol, veh/h		754	467		231		
Approach Delay, s/veh		11.0	16.8		18.8		
Approach LOS		B	B		B		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				28.7	12.6	11.5	17.3
Change Period (Y+Rc), s				4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s				32.0	19.0	9.5	18.0
Max Q Clear Time (g_c+l1), s				8.3	7.5	7.3	11.3
Green Ext Time (p_c), s				3.0	0.6	0.1	1.4
Intersection Summary							
HCM 6th Ctrl Delay			14.1				
HCM 6th LOS			B				
Notes							

HCM 6th TWSC
6: Driveway A & Driveway B

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	0	2	1	0	63
Future Vol, veh/h	30	0	2	1	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	33	0	2	1	0	68
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	71	3	0	0	3	0
Stage 1	3	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	938	1087	-	-	1632	-
Stage 1	1025	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	938	1087	-	-	1632	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	1025	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 938		1632	-	
HCM Lane V/C Ratio	-	- 0.035		-	-	
HCM Control Delay (s)	-	- 9		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	

HCM 6th TWSC
7: Outer I-15 (New Alignment) & Driveway C

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	27	200	171	0
Future Vol, veh/h	0	40	27	200	171	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	43	29	217	186	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	461	186	186	0	-	0
Stage 1	186	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	562	861	1401	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	861	1401	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	776	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	0.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1401	-	861	-	-	
HCM Lane V/C Ratio	0.021	-	0.05	-	-	
HCM Control Delay (s)	7.6	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

HCM 6th TWSC
8: Outer I-15 (New Alignment) & Driveway D

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	27	173	159	0
Future Vol, veh/h	0	12	27	173	159	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	13	29	188	173	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	419	173	173	0	-	0
Stage 1	173	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	595	876	1416	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	581	876	1416	-	-	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.2	1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1416	-	876	-	-	
HCM Lane V/C Ratio	0.021	-	0.015	-	-	
HCM Control Delay (s)	7.6	0	9.2	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

HCM 6th TWSC
9: Outer I-15 (New Alignment) & Driveway E

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	20	28	144	140	0
Future Vol, veh/h	0	20	28	144	140	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	22	30	157	152	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	369	152	152	0	-	0
Stage 1	152	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	635	900	1441	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	620	900	1441	-	-	-
Mov Cap-2 Maneuver	620	-	-	-	-	-
Stage 1	861	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	1.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1441	-	900	-	-	
HCM Lane V/C Ratio	0.021	-	0.024	-	-	
HCM Control Delay (s)	7.6	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
10: Outer I-15 (New Alignment) & Driveway F

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	27	117	112	0
Future Vol, veh/h	0	28	27	117	112	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	30	29	127	122	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	307	122	122	0	-	0
Stage 1	122	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	689	935	1478	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	675	935	1478	-	-	-
Mov Cap-2 Maneuver	675	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	1.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1478	-	935	-	-	
HCM Lane V/C Ratio	0.02	-	0.033	-	-	
HCM Control Delay (s)	7.5	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
11: Outer I-15 (New Alignment) & Driveway G

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	28	27	90	84	0
Future Vol, veh/h	0	28	27	90	84	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	30	29	98	91	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	247	91	91	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	746	972	1517	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	731	972	1517	-	-	-
Mov Cap-2 Maneuver	731	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1517	-	972	-	-	
HCM Lane V/C Ratio	0.019	-	0.031	-	-	
HCM Control Delay (s)	7.4	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
12: Outer I-15 (New Alignment) & Driveway H

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	28	62	60	0
Future Vol, veh/h	0	24	28	62	60	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	26	30	67	65	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	192	65	65	0	-	0
Stage 1	65	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	801	1005	1550	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	785	1005	1550	-	-	-
Mov Cap-2 Maneuver	785	-	-	-	-	-
Stage 1	944	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	2.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1550	-	1005	-	-	
HCM Lane V/C Ratio	0.02	-	0.026	-	-	
HCM Control Delay (s)	7.4	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
13: Outer I-15 (New Alignment) & Driveway I

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	24	39	38	0
Future Vol, veh/h	0	23	24	39	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	25	26	42	41	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	135	41	41	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	94	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	863	1036	1581	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	848	1036	1581	-	-	-
Mov Cap-2 Maneuver	848	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1581	-	1036	-	-	
HCM Lane V/C Ratio	0.017	-	0.024	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

HCM 6th TWSC
14: Outer I-15 (New Alignment) & Driveway J

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	15	15	24	23	0
Future Vol, veh/h	0	15	15	24	23	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	16	16	26	25	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	83	25	25	0	-	0
Stage 1	25	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	924	1057	1603	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	915	1057	1603	-	-	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	2.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1603	-	1057	-	-	
HCM Lane V/C Ratio	0.01	-	0.015	-	-	
HCM Control Delay (s)	7.3	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC
15: Outer I-15 (New Alignment) & Driveway K

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	24	0	0	0
Future Vol, veh/h	0	23	24	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	25	26	0	0	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	53	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	960	1090	1635	-	-	-
Stage 1	1028	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	945	1090	1635	-	-	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.4	7.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1635	-	1090	-	-	
HCM Lane V/C Ratio	0.016	-	0.023	-	-	
HCM Control Delay (s)	7.2	0	8.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

HCM 6th TWSC
16: Driveway L & Driveway K

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	0	8	16	0	7
Future Vol, veh/h	16	0	8	16	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	17	0	9	17	0	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	17	0	52	17
Stage 1	-	-	-	-	17	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1613	-	962	1068
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1613	-	956	1068
Mov Cap-2 Maneuver	-	-	-	-	956	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	987	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.4		8.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1068	-	-	1613	-	
HCM Lane V/C Ratio	0.007	-	-	0.005	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
17: Driveway I & Driveway M

Horizon Year (2040) plus Project
Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	16	8	7	0
Future Vol, veh/h	0	16	16	8	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	17	17	9	8	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	26	0	-	0	39	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	17	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1601	-	-	-	978	1061
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1601	-	-	-	978	1061
Mov Cap-2 Maneuver	-	-	-	-	978	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	1011	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		8.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1601	-	-	-	978	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Control Delay (s)	0	-	-	-	8.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Appendix C

SimTraffic Queuing Worksheet

Queuing and Blocking Report

Existing Conditions

AM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	SB
Directions Served	L	LT
Maximum Queue (ft)	26	12
Average Queue (ft)	11	0
95th Queue (ft)	24	4
Link Distance (ft)	944	509
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	1	
Queuing Penalty (veh)	0	

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	16	44	55	44	36
Average Queue (ft)	1	5	20	15	13
95th Queue (ft)	7	31	61	38	41
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	0	2	1
Queuing Penalty (veh)		0	0	0	0

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	NB	NB	SB	SB
Directions Served	LTR	LT	R	LT	R
Maximum Queue (ft)	5	40	31	74	50
Average Queue (ft)	0	20	4	42	15
95th Queue (ft)	4	34	19	68	47
Link Distance (ft)	812	333		2056	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			25		25
Storage Blk Time (%)		4	0	13	1
Queuing Penalty (veh)		0	0	2	2

Zone Summary

Zone wide Queuing Penalty: 5

Queuing and Blocking Report

Existing Conditions

PM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	SB
Directions Served	L	LT
Maximum Queue (ft)	30	18
Average Queue (ft)	13	1
95th Queue (ft)	26	8
Link Distance (ft)	944	509
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	2	
Queuing Penalty (veh)	0	

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	WB	WB	SB	SB
Directions Served	T	R	L	R
Maximum Queue (ft)	56	56	48	28
Average Queue (ft)	24	50	21	2
95th Queue (ft)	70	73	40	16
Link Distance (ft)	812		1457	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		25
Storage Blk Time (%)	0	0	3	0
Queuing Penalty (veh)	0	0	0	0

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	22	17	30	41	147	50
Average Queue (ft)	2	1	12	21	59	16
95th Queue (ft)	12	8	31	42	106	49
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			3	2	27	1
Queuing Penalty (veh)			1	0	4	3

Zone Summary

Zone wide Queuing Penalty: 10

Queuing and Blocking Report
Opening Year (2025)

AM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	SB
Directions Served	L	LT
Maximum Queue (ft)	41	12
Average Queue (ft)	21	1
95th Queue (ft)	37	8
Link Distance (ft)	944	509
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	6	
Queuing Penalty (veh)	0	

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	5	56	56	54	42
Average Queue (ft)	0	15	45	31	14
95th Queue (ft)	4	55	78	50	43
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	0	9	1
Queuing Penalty (veh)		0	0	1	1

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	24	30	65	35	256	50
Average Queue (ft)	2	2	22	5	89	13
95th Queue (ft)	12	14	46	22	185	46
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			10	0	45	1
Queuing Penalty (veh)			1	0	6	3

Zone Summary

Zone wide Queuing Penalty: 13

Queuing and Blocking Report
Opening Year (2025)

PM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	50	13	30
Average Queue (ft)	24	1	3
95th Queue (ft)	43	6	16
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	8		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	5	56	56	66	38
Average Queue (ft)	0	39	54	35	4
95th Queue (ft)	4	81	69	56	21
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	1	13	0
Queuing Penalty (veh)		0	0	0	0

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	46	44	64	44	1374	50
Average Queue (ft)	3	3	14	23	580	21
95th Queue (ft)	25	19	41	45	1512	61
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					1	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			6	2	82	2
Queuing Penalty (veh)			3	1	13	7

Zone Summary

Zone wide Queuing Penalty: 25

Queuing and Blocking Report
Opening Year (2025) plus Project

AM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	50	4	19
Average Queue (ft)	24	0	1
95th Queue (ft)	45	3	10
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	9		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	12	56	56	70	46
Average Queue (ft)	0	33	53	36	14
95th Queue (ft)	6	78	68	59	44
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	1	14	1
Queuing Penalty (veh)		0	0	2	2

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	17	45	66	42	2072	50
Average Queue (ft)	1	4	24	10	1875	17
95th Queue (ft)	11	22	50	34	2509	55
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					67	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			17	1	99	1
Queuing Penalty (veh)			2	0	13	8

Intersection: 4: Stoddard Wells Road & Driveway A

Movement	SB
Directions Served	R
Maximum Queue (ft)	34
Average Queue (ft)	19
95th Queue (ft)	42
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	127	53	104	52
Average Queue (ft)	74	22	47	26
95th Queue (ft)	114	51	83	45
Link Distance (ft)		1396	547	189
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	400			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Driveway A & Driveway B

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	9
95th Queue (ft)	32
Link Distance (ft)	402
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Opening Year (2025) plus Project

AM Peak Hour

Intersection: 7: Outer I-15 (New Alignment) & Driveway C

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	58
Average Queue (ft)	13	4
95th Queue (ft)	38	26
Link Distance (ft)	215	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Outer I-15 (New Alignment) & Driveway D

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	50
Average Queue (ft)	5	6
95th Queue (ft)	22	30
Link Distance (ft)	744	244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Outer I-15 (New Alignment) & Driveway E

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	48
Average Queue (ft)	5	3
95th Queue (ft)	24	21
Link Distance (ft)	793	114
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Opening Year (2025) plus Project

AM Peak Hour

Intersection: 10: Outer I-15 (New Alignment) & Driveway F

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	40
Average Queue (ft)	7	3
95th Queue (ft)	28	21
Link Distance (ft)	203	202
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Outer I-15 (New Alignment) & Driveway G

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	24
Average Queue (ft)	7	1
95th Queue (ft)	28	11
Link Distance (ft)	203	214
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Outer I-15 (New Alignment) & Driveway H

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	34
Average Queue (ft)	8	3
95th Queue (ft)	29	22
Link Distance (ft)	708	194
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Opening Year (2025) plus Project

AM Peak Hour

Intersection: 13: Outer I-15 (New Alignment) & Driveway I

Movement	EB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	16
95th Queue (ft)	41
Link Distance (ft)	85
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Outer I-15 (New Alignment) & Driveway J

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	11	0
95th Queue (ft)	34	4
Link Distance (ft)	313	292
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Outer I-15 (New Alignment) & Driveway K

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	14
95th Queue (ft)	39
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Driveway L & Driveway K

Movement	NB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	27
Link Distance (ft)	194
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Driveway I & Driveway M

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	177
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 28

Queuing and Blocking Report
Opening Year (2025) plus Project

PM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	46	4	12
Average Queue (ft)	29	0	1
95th Queue (ft)	50	3	8
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	10		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	WB	WB	SB	SB
Directions Served	T	R	L	R
Maximum Queue (ft)	56	58	71	28
Average Queue (ft)	51	56	40	2
95th Queue (ft)	77	57	63	15
Link Distance (ft)	812		1457	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		25
Storage Blk Time (%)	0	2	16	0
Queuing Penalty (veh)	2	1	0	0

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	58	67	85	49	2072	50
Average Queue (ft)	5	10	17	25	2040	12
95th Queue (ft)	31	43	54	50	2270	47
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					92	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			16	3	100	1
Queuing Penalty (veh)			9	1	15	7

Intersection: 4: Stoddard Wells Road & Driveway A

Movement	SB
Directions Served	R
Maximum Queue (ft)	64
Average Queue (ft)	31
95th Queue (ft)	50
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	106	78	143	94
Average Queue (ft)	54	29	74	42
95th Queue (ft)	92	65	121	76
Link Distance (ft)		1396	547	189
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	400			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Driveway A & Driveway B

Movement	WB
Directions Served	LR
Maximum Queue (ft)	45
Average Queue (ft)	17
95th Queue (ft)	44
Link Distance (ft)	402
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Outer I-15 (New Alignment) & Driveway C

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	45	50
Average Queue (ft)	23	3
95th Queue (ft)	47	22
Link Distance (ft)	215	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Outer I-15 (New Alignment) & Driveway D

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	38
Average Queue (ft)	12	2
95th Queue (ft)	36	19
Link Distance (ft)	744	244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Outer I-15 (New Alignment) & Driveway E

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	41
Average Queue (ft)	16	3
95th Queue (ft)	40	20
Link Distance (ft)	793	114
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Opening Year (2025) plus Project

PM Peak Hour

Intersection: 10: Outer I-15 (New Alignment) & Driveway F

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	40	25
Average Queue (ft)	18	3
95th Queue (ft)	43	18
Link Distance (ft)	203	202
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Outer I-15 (New Alignment) & Driveway G

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	29
Average Queue (ft)	19	1
95th Queue (ft)	43	13
Link Distance (ft)	203	214
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Outer I-15 (New Alignment) & Driveway H

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	40	12
Average Queue (ft)	15	1
95th Queue (ft)	40	8
Link Distance (ft)	708	194
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Opening Year (2025) plus Project

PM Peak Hour

Intersection: 13: Outer I-15 (New Alignment) & Driveway I

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	30
Average Queue (ft)	16	1
95th Queue (ft)	40	11
Link Distance (ft)	85	114
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Outer I-15 (New Alignment) & Driveway J

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	12
Average Queue (ft)	12	0
95th Queue (ft)	36	6
Link Distance (ft)	313	292
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Outer I-15 (New Alignment) & Driveway K

Movement	EB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	15
95th Queue (ft)	41
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Opening Year (2025) plus Project

PM Peak Hour

Intersection: 16: Driveway L & Driveway K

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	6	31
Average Queue (ft)	0	6
95th Queue (ft)	4	26
Link Distance (ft)	105	194
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 17: Driveway I & Driveway M

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	177
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 34

Queuing and Blocking Report

Horizon Year (2040)

AM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	74	13	31
Average Queue (ft)	31	1	6
95th Queue (ft)	56	8	25
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	11		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	27	56	56	75	49
Average Queue (ft)	2	33	54	42	23
95th Queue (ft)	12	78	67	68	55
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	1	17	3
Queuing Penalty (veh)		0	1	5	5

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	60	42	75	45	2072	50
Average Queue (ft)	12	6	29	17	1596	26
95th Queue (ft)	40	26	58	44	2521	67
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					38	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			23	1	99	3
Queuing Penalty (veh)			4	1	31	14

Zone Summary

Zone wide Queuing Penalty: 62

Queuing and Blocking Report

Horizon Year (2040)

PM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	48	22	40
Average Queue (ft)	22	1	7
95th Queue (ft)	40	10	30
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	7		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	5	56	61	62	44
Average Queue (ft)	0	46	56	35	15
95th Queue (ft)	4	81	59	55	44
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	1	14	1
Queuing Penalty (veh)		1	1	3	2

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	60	77	49	45	2072	50
Average Queue (ft)	9	8	16	25	1932	23
95th Queue (ft)	37	40	39	48	2467	63
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					79	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			10	3	99	3
Queuing Penalty (veh)			5	1	34	15

Zone Summary

Zone wide Queuing Penalty: 62

Queuing and Blocking Report
Horizon Year (2040) plus Project

AM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	158	17	44
Average Queue (ft)	45	1	8
95th Queue (ft)	96	9	32
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	19		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	11	56	56	111	50
Average Queue (ft)	1	43	55	50	26
95th Queue (ft)	9	81	63	83	59
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	1	24	3
Queuing Penalty (veh)		1	1	7	8

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	112	100	94	50	2072	50
Average Queue (ft)	17	12	34	17	2072	15
95th Queue (ft)	63	54	67	48	2072	53
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					99	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			32	1	100	1
Queuing Penalty (veh)			7	1	32	11

Intersection: 4: Stoddard Wells Road & Driveway A

Movement	SB
Directions Served	R
Maximum Queue (ft)	50
Average Queue (ft)	20
95th Queue (ft)	44
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	119	74	172	68
Average Queue (ft)	63	32	87	30
95th Queue (ft)	103	65	144	54
Link Distance (ft)		1396	547	189
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	400			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Driveway A & Driveway B

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	402
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Horizon Year (2040) plus Project

AM Peak Hour

Intersection: 7: Outer I-15 (New Alignment) & Driveway C

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	50
Average Queue (ft)	12	3
95th Queue (ft)	36	21
Link Distance (ft)	215	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Outer I-15 (New Alignment) & Driveway D

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	44
Average Queue (ft)	4	2
95th Queue (ft)	20	17
Link Distance (ft)	744	244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Outer I-15 (New Alignment) & Driveway E

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	31
Average Queue (ft)	6	2
95th Queue (ft)	27	13
Link Distance (ft)	793	114
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Horizon Year (2040) plus Project

AM Peak Hour

Intersection: 10: Outer I-15 (New Alignment) & Driveway F

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	24
Average Queue (ft)	6	1
95th Queue (ft)	26	9
Link Distance (ft)	203	202
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Outer I-15 (New Alignment) & Driveway G

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	34
Average Queue (ft)	7	2
95th Queue (ft)	28	16
Link Distance (ft)	203	214
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Outer I-15 (New Alignment) & Driveway H

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	33
Average Queue (ft)	7	1
95th Queue (ft)	27	13
Link Distance (ft)	708	194
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Horizon Year (2040) plus Project

AM Peak Hour

Intersection: 13: Outer I-15 (New Alignment) & Driveway I

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	6
Average Queue (ft)	16	0
95th Queue (ft)	40	4
Link Distance (ft)	85	114
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Outer I-15 (New Alignment) & Driveway J

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	12
Average Queue (ft)	11	0
95th Queue (ft)	35	6
Link Distance (ft)	313	292
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Outer I-15 (New Alignment) & Driveway K

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	16
95th Queue (ft)	41
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Driveway L & Driveway K

Movement	NB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	194
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Driveway I & Driveway M

Movement	SB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	7
95th Queue (ft)	28
Link Distance (ft)	177
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 67

Queuing and Blocking Report
Horizon Year (2040) plus Project

PM Peak Hour

Intersection: 1: Quarry Road & I-15 SB Ramps

Movement	WB	NB	SB
Directions Served	L	TR	LT
Maximum Queue (ft)	107	34	52
Average Queue (ft)	32	2	9
95th Queue (ft)	80	15	34
Link Distance (ft)	944	1457	509
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)	11		
Queuing Penalty (veh)	0		

Intersection: 2: Stoddard Wells Road & Quarry Road

Movement	EB	WB	WB	SB	SB
Directions Served	LT	T	R	L	R
Maximum Queue (ft)	15	109	70	74	48
Average Queue (ft)	1	56	56	43	17
95th Queue (ft)	6	84	61	67	48
Link Distance (ft)	604	812		1457	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		25
Storage Blk Time (%)		0	2	18	1
Queuing Penalty (veh)		2	2	3	3

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	R	LT	R
Maximum Queue (ft)	136	142	99	50	2072	50
Average Queue (ft)	19	20	27	30	2070	14
95th Queue (ft)	76	80	75	54	2101	51
Link Distance (ft)	812	1676	333		2056	
Upstream Blk Time (%)					98	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)				25		25
Storage Blk Time (%)			26	4	100	2
Queuing Penalty (veh)			14	1	34	14

Queuing and Blocking Report
Horizon Year (2040) plus Project

PM Peak Hour

Intersection: 4: Stoddard Wells Road & Driveway A

Movement	SB
Directions Served	R
Maximum Queue (ft)	72
Average Queue (ft)	36
95th Queue (ft)	60
Link Distance (ft)	207
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Stoddard Wells Road & Outer I-15 (New Alignment)

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	100	83	194	118
Average Queue (ft)	47	35	98	45
95th Queue (ft)	85	72	162	82
Link Distance (ft)		1396	547	189
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	400			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Driveway A & Driveway B

Movement	WB
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	20
95th Queue (ft)	45
Link Distance (ft)	402
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Horizon Year (2040) plus Project

PM Peak Hour

Intersection: 7: Outer I-15 (New Alignment) & Driveway C

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	53	36
Average Queue (ft)	24	3
95th Queue (ft)	48	20
Link Distance (ft)	215	189
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Outer I-15 (New Alignment) & Driveway D

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	38
Average Queue (ft)	8	3
95th Queue (ft)	30	22
Link Distance (ft)	744	244
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Outer I-15 (New Alignment) & Driveway E

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	47
Average Queue (ft)	13	2
95th Queue (ft)	38	20
Link Distance (ft)	793	114
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Horizon Year (2040) plus Project

PM Peak Hour

Intersection: 10: Outer I-15 (New Alignment) & Driveway F

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	41	31
Average Queue (ft)	19	2
95th Queue (ft)	45	15
Link Distance (ft)	203	202
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Outer I-15 (New Alignment) & Driveway G

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	12
Average Queue (ft)	16	1
95th Queue (ft)	41	8
Link Distance (ft)	203	214
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 12: Outer I-15 (New Alignment) & Driveway H

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	36	16
Average Queue (ft)	16	1
95th Queue (ft)	41	9
Link Distance (ft)	708	194
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Outer I-15 (New Alignment) & Driveway I

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	15
95th Queue (ft)	39
Link Distance (ft)	85
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Outer I-15 (New Alignment) & Driveway J

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	10	0
95th Queue (ft)	32	4
Link Distance (ft)	313	292
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Outer I-15 (New Alignment) & Driveway K

Movement	EB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	16
95th Queue (ft)	41
Link Distance (ft)	105
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 16: Driveway L & Driveway K

Movement	NB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	7
95th Queue (ft)	27
Link Distance (ft)	194
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 17: Driveway I & Driveway M

Movement	SB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	6
95th Queue (ft)	26
Link Distance (ft)	177
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 74

Appendix D

VMT Screening and Report



TO: Lisa Valdez, Senior Transportation Planner; DUDEK
FROM: Jonathan Sanchez, PE, TE, PTOE; Senior Transportation Engineer; CR Associates
DATE: April 25, 2023
RE: Apple Valley 143 –VMT Analysis

The purpose of this technical memorandum is to document potential transportation impacts associated with the Apple Valley 143 project (the "Project").

Project Description

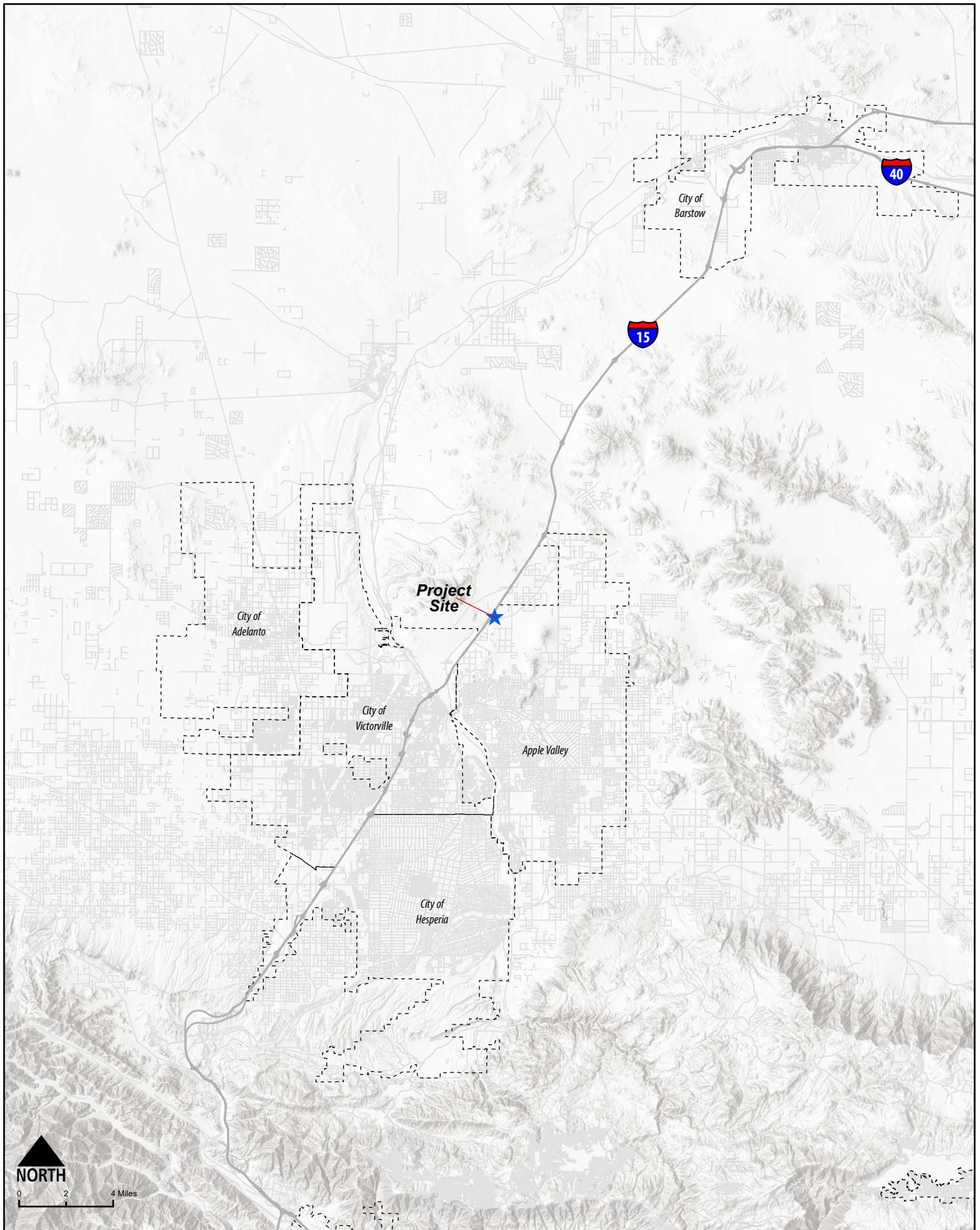
The Project proposes the construction and operation of approximately 2,518,500 square feet of industrial/warehouse space on approximately 143 acres of vacant land generally located east of Interstate 15 (I-15), north of Stoddard Wells Road, and south of Johnson Road in the Town of Apple Valley. In total the Project would construct three buildings, as follows:

- Building 1 – 615,000 square feet
- Building 2 – 1,221,000 square feet
- Building 3 – 682,500 square feet

Along with the construction of the three buildings, the project will also construct loading docks, truck and vehicle parking, and landscaped areas. The Project also proposes improvements along Stoddard Wells Road and Johnson Road, including frontage landscaping and pedestrian improvements. Implementation of the Project would require the following discretionary actions from the Town of Apple Valley:

- General Plan Amendment to modify the Project site's General Plan Circulation Element for the continuation of Outer I-15 Road on the eastern border of the Project site; and
- Development Permit

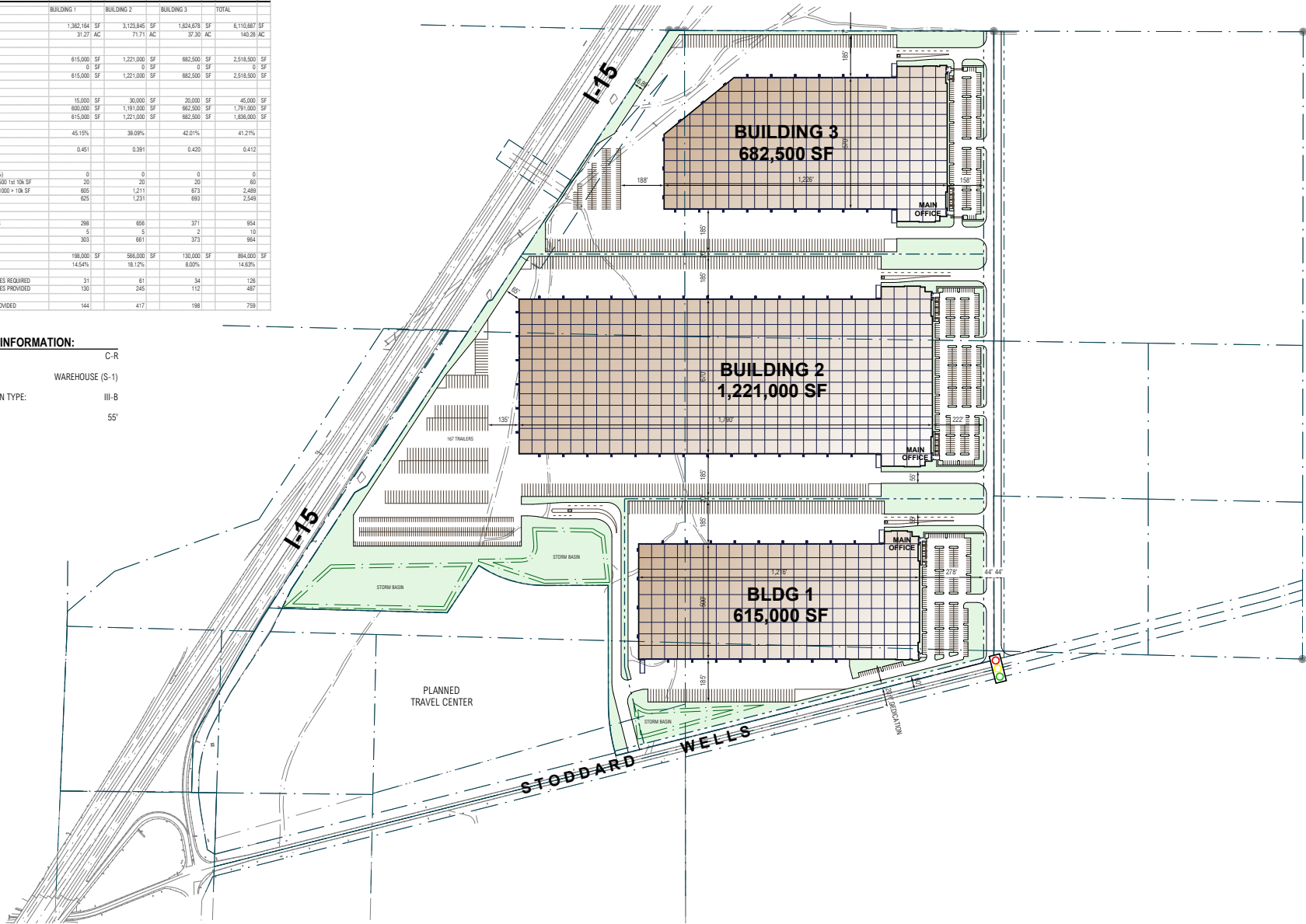
Figure 1 displays the regional location of the Project while **Figure 2** displays the Project's site plan.



PROJECT DATA				
	BUILDING 1	BUILDING 2	BUILDING 3	TOTAL
SITE AREA	7,382,164 SF 31.27 AC	3,125,846 SF 71.71 AC	1,854,876 SF 37.30 AC	6,110,887 SF 140.28 AC
BUILDING AREA				
FOOTPRINT	615,000 SF	1,221,000 SF	682,500 SF	2,518,500 SF
MEZZANINE	0 SF	0 SF	0 SF	0 SF
TOTAL	615,000 SF	1,221,000 SF	682,500 SF	2,518,500 SF
FLOOR AREA BY USE				
OFFICE	16,000 SF	30,000 SF	20,000 SF	46,000 SF
WAREHOUSE	600,000 SF	1,191,000 SF	662,500 SF	1,791,000 SF
TOTAL	615,000 SF	1,221,000 SF	682,500 SF	1,836,000 SF
COVERAGE	45.19%	39.09%	42.01%	41.21%
F.A.R.	0.451	0.391	0.420	0.412
PARKING REQUIRED				
OFFICE (W.A. = 25%)	0	0	0	0
WAREHOUSE @ 1500' ± 10k SF	20	20	20	60
WAREHOUSE @ 11000' ± 10k SF	805	1,211	673	2,489
TOTAL	825	1,231	693	2,549
PARKING PROVIDED				
STANDARD STALLS	288	656	371	954
ADA STALLS	5	5	2	10
TOTAL	303	661	373	964
LANDSCAPE AREA	198,000 SF	500,000 SF	130,000 SF	864,000 SF
LANDSCAPE %	14.54%	18.12%	8.00%	14.63%
DOCK LOADING SPACES REQUIRED	31	61	34	126
DOCK LOADING SPACES PROVIDED	130	245	112	487
TRAILER PARKING PROVIDED	144	417	198	759

PROJECT INFORMATION:

ZONE: C-R
 USE: WAREHOUSE (S-1)
 CONSTRUCTION TYPE: III-B
 MAX. HEIGHT: 55'



Analysis Methodology

Under Section 15064.3 of the current California Environmental Quality Act (CEQA) Guidelines, vehicle miles traveled (VMT), which includes the amount and distance of automobile traffic attributable to a project, is identified as the “most appropriate measure of transportation impacts.”

In May 2021, the Town of Apple Valley’s City Council adopted VMT Guidelines which included VMT metrics and thresholds.

Analysis Metrics

For land use development projects, the following metric shall be analyzed to determine if the Proposed Project has a significant transportation-related impact:

- VMT/Service Population (Employee + Visitors) for the Non-Home Based, Home-Based Work, and Home-Based Other attraction trips, which represent trips taken by both workers and visitors.

Determination of Significance

A project would result in a significant project generated VMT impact if either of the following conditions are satisfied:

- The baseline project generated VMT per service population exceeds the Town of Apple Valley General Plan Buildout VMT per service population, or
- The cumulative project generated VMT per service population exceeds Town of Apple Valley General Plan Buildout VMT per service population.

Additionally, the project’s effect on VMT would be considered significant if it resulted in either the following conditions to be satisfied:

- The baseline link-level boundary Town-wide VMT per service population increases under the plus project condition compared to the no project condition, or
- The cumulative link-level boundary Town-wide VMT per service population increases under the plus project condition compared to the no project condition.

Transportation Impact Analysis

For projects located within San Bernardino County, VMT is calculated using the most recent version of the San Bernardino Transportation Analysis Model (SBTAM). For the purposes of this analysis, two scenarios were analyzed:

- Base Year 2016 without Project
- Base Year 2016 with Project

From the model scenario outputs, the following metrics were produced:

- Project Area VMT per Service Population

Table 1 summarizes the VMT per Service Population results for both the Project Area and Town-wide, under both the with and without project scenarios. **Attachment A** contains detailed model-run information.

Table 1 – VMT per Service Population Analysis Results

Geographic Area	Total VMT per Service Population		Percentage Change (without Project vs. with Project)	Town of Apple Valley GP Buildout VMT per Service Population Threshold	Percentage Below Threshold	Significant Impact?
	Base Year (Without Project)	Base Year (with Project)				
Project Area	30.57	29.47	-4.0%	33.2 ¹	11.23%	No

Source: ITERIS, April 2023. CR Associates, April 2023.

Note:

¹ Threshold obtained from SBCTA VMT Screening Tool.

As shown, the Project Area VMT per Service Population (29.47) does not exceed the Town of Apple Valley General Plan Buildout VMT per Service Population threshold (33.2). Additionally, the Project Area with Project VMT per Service Population is lower than without Project. This is due to the creation of employment opportunities within the Town of Apple Valley that were not there before implementation of the project. The Proposed Project captures employment that used to go outside of the Town to nearby cities such as Victorville or Barstow.

According to Section 15064.3 “Determining the Significance of Transportation Impacts” of the 2021 CEQA Statute & Guidelines, projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

Furthermore, the Town of Apple Valley VMT Thresholds also identify link-level VMT per Service Population to be analyzed. **Table 2** summarizes the Link-Level VMT per Service Population results under with and without project scenarios.

Table 2 – Link-level VMT per Service Population Analysis Results

Type of VMT and Service Population	Base Year without Project	Base Year with Project	Percentage Change
Town-wide Link-Level VMT	897,067	914,020	1.8%
Service Population	91,154	93,765	2.8%
Town-wide Link-Level VMT per Service Population	9.84	9.74	-1.0%

Source: ITERIS, April 2023. CR Associates, April 2023

As shown, the development of the Proposed Project decreases the Town-wide link-level VMT per Service Population by one percent (1%), which is consistent with the results of the total VMT per Service Population analysis.

Finally, it is important to note that based on the guidance provided in Public Resources Code, § 21083, subd. (b)(2) and CEQA Guidelines, § 15064, subd. (h)(1), “A project’s cumulative impacts are based on an assessment of whether the “incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” In the context of VMT, when the VMT threshold

is an efficiency-based threshold, the OPR Technical Advisory states, “[a] project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa.” (OPR Technical Advisory 2018 at p. 6).

This approach is also consistent with our understanding of the SBTAM model, if a project results in a VMT reduction when modeled under baseline conditions, then the project would likely have the same VMT efficiency or better under future conditions. Likewise, if a project results in a VMT increase when modeled under base year conditions, then the project would likely exhibit the same characteristics under future conditions.

Therefore, the analyses conducted herein are deemed appropriate and consistent with both the Town of Apple Valley’s VMT Guidelines, CEQA Guidelines, and the OPR Technical Advisory.

Conclusion

Based on the analysis results documented above, the Proposed Project is presumed to have a less than significant VMT impact, and no additional analysis would be required. Additionally, since the proposed Project has a less than significant impact under the Base Year with Project conditions, it is reasonable to state that the proposed Project would also have a less than significant impact under the cumulative conditions. This qualitative analysis for the cumulative conditions is appropriate and consistent with both the Town of Apple Valley’s VMT Guidelines, CEQA Guidelines, and the OPR Technical Advisory.

Attachment A - Modeling Results

VMT Analysis - No Project

San Bernardino			
ID	Purpose	Origins	Destinations
1	Home-based Work	18,678,251	15,273,376
2	Home-based School	654,764	643,974
3	Home-based University	875,893	380,312
4	Home-based Shopping	1,983,879	1,462,138
5	Home-based Social-Recreational	5,951,495	5,556,226
6	Home-based Serve Passenger	2,079,877	1,783,729
7	Home-based Other	5,867,503	5,338,540
8	Work-Based Other	2,132,860	1,801,136
9	Other Based Other	6,385,361	5,429,717
Total VMT		44,609,883	37,669,147
Total Home-based VMT		36,091,661	
Total Work-based VMT		17,406,236	
Total Population		2,140,539	
Total Employees		790,400	
Total Home-based VMT/Capita		16.86	
Total Work-based VMT/Employee		22.02	
Total VMT/Service Population		18.25	

Apple Valley			
ID	Purpose	Origins	Destinations
1	Home-based Work	627,145	237,271
2	Home-based School	19,829	34,006
3	Home-based University	32,890	-
4	Home-based Shopping	68,158	39,446
5	Home-based Social-Recreational	194,456	170,765
6	Home-based Serve Passenger	52,196	55,451
7	Home-based Other	186,627	154,383
8	Work-Based Other	52,813	39,355
9	Other Based Other	198,385	141,541
Total VMT		1,432,499	872,218
Total Home-based VMT		1,181,301	
Total Work-based VMT		290,084	
Total Population		73,227	
Total Employees		17,927	
Total Home-based VMT/Capita		16.13	
Total Work-based VMT/Employee		16.18	
Total VMT/Service Population		16.14	

TAZ:		53945101	
ID	Purpose	Origins	Destinations
1	Home-based Work	-	1,159
2	Home-based School	-	-
3	Home-based University	-	-
4	Home-based Shopping	-	-
5	Home-based Social-Recreational	-	464
6	Home-based Serve Passenger	-	331
7	Home-based Other	-	944
8	Work-Based Other	94	109
9	Other Based Other	439	262
Total VMT		533	3,269
Total Home-based VMT		-	
Total Work-based VMT		1,253	
Total Population		0	
Total Employees		41	
Total Home-based VMT/Capita		#DIV/0!	
Total Work-based VMT/Employee		30.57	
Total VMT/Service Population		30.57	

VMT Analysis - With Project

San Bernardino			
ID	Purpose	Origins	Destinations
1	Home-based Work	18,349,478	15,168,678
2	Home-based School	613,060	603,249
3	Home-based University	839,256	368,438
4	Home-based Shopping	1,854,766	1,380,924
5	Home-based Social-Recreational	5,726,302	5,365,813
6	Home-based Serve Passenger	1,995,782	1,725,866
7	Home-based Other	5,649,003	5,166,570
8	Work-Based Other	2,079,131	1,771,011
9	Other Based Other	6,016,633	5,147,680
Total VMT		43,123,412	36,698,229
Total Home-based VMT		35,027,647	
Total Work-based VMT		17,247,810	
Total Population		2,140,539	
Total Employees		793,011	
Total Home-based VMT/Capita		16.36	
Total Work-based VMT/Employee		21.75	
Total VMT/Service Population		17.82	

Apple Valley			
ID	Purpose	Origins	Destinations
1	Home-based Work	595,832	238,776
2	Home-based School	18,743	31,821
3	Home-based University	31,351	-
4	Home-based Shopping	63,850	37,440
5	Home-based Social-Recreational	186,351	164,539
6	Home-based Serve Passenger	50,716	53,580
7	Home-based Other	179,663	148,900
8	Work-Based Other	51,049	38,528
9	Other Based Other	186,476	134,563
Total VMT		1,364,031	848,148
Total Home-based VMT		1,126,505	
Total Work-based VMT		289,826	
Total Population		73,227	
Total Employees		20,538	
Total Home-based VMT/Capita		15.38	
Total Work-based VMT/Employee		14.11	
Total VMT/Service Population		15.11	

TAZ:		53945101	
ID	Purpose	Origins	Destinations
1	Home-based Work	-	75,965
2	Home-based School	-	-
3	Home-based University	-	-
4	Home-based Shopping	-	-
5	Home-based Social-Recreational	-	425
6	Home-based Serve Passenger	-	2,927
7	Home-based Other	-	4,706
8	Work-Based Other	2,202	4,389
9	Other Based Other	3,580	988
Total VMT		5,782	89,400
Total Home-based VMT		-	
Total Work-based VMT		78,166	
Total Population		0	
Total Employees		2,652	
Total Home-based VMT/Capita		#DIV/0!	
Total Work-based VMT/Employee		29.47	
Total VMT/Service Population		29.47	

				<i>Build - No Build</i>
		Build	No Build	Diff (+/-)
	Mileage	197	197	-
	ADT	2,459,455	2,423,228	36,227
<i>Mileage * ADT</i>	VMT	914,020	897,067	16,953

Type of VMT and Service Population	Link-Level Analysis With Project	Link-Level Without Project	Percent Difference
Town-wide VMT	914020	897067	1.8%
Service Population	93765	91154	2.8%
Link-Level VMT per Service Population	9.74	9.84	-1.0%

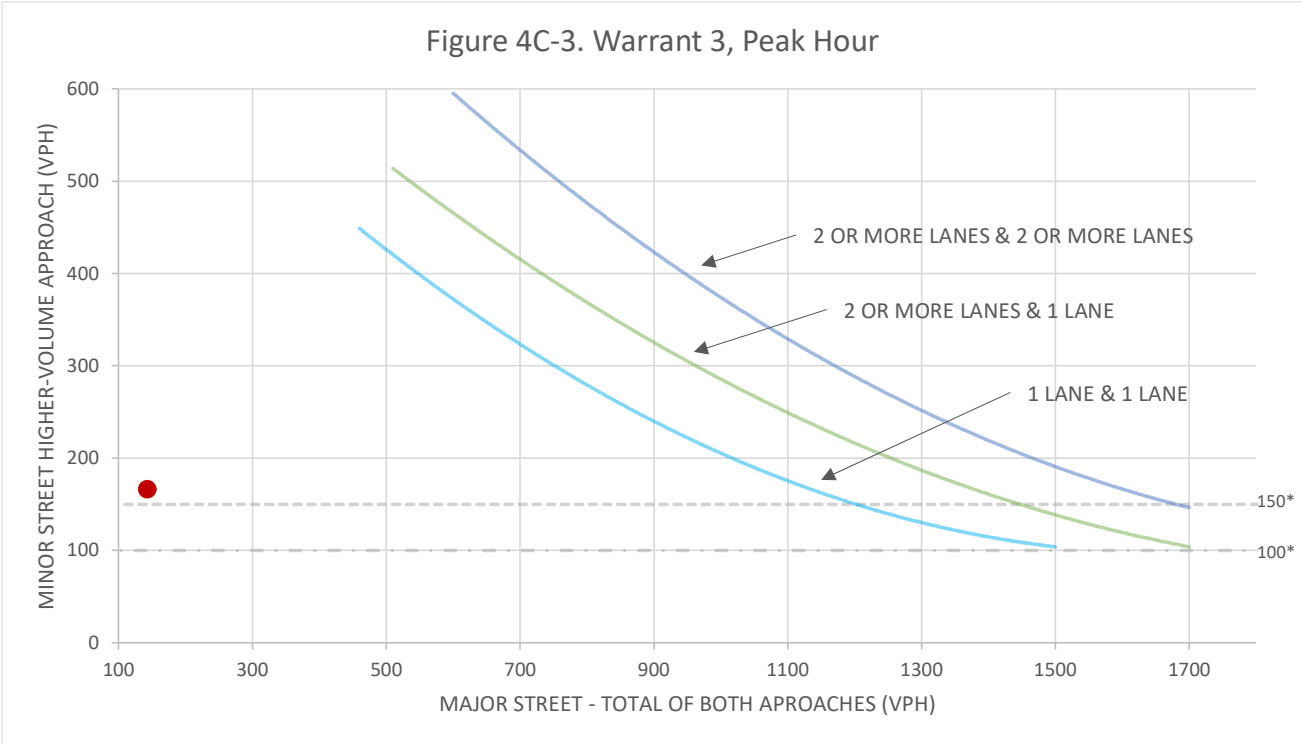
Appendix E

Signal Warrants

Project	Apple Valley 143
Scenario	Existing Conditions
Peak Hour	AM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	<u>No</u>
Traffic Volume (VPH)*	143	166	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Existing Conditions
Peak Hour	PM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

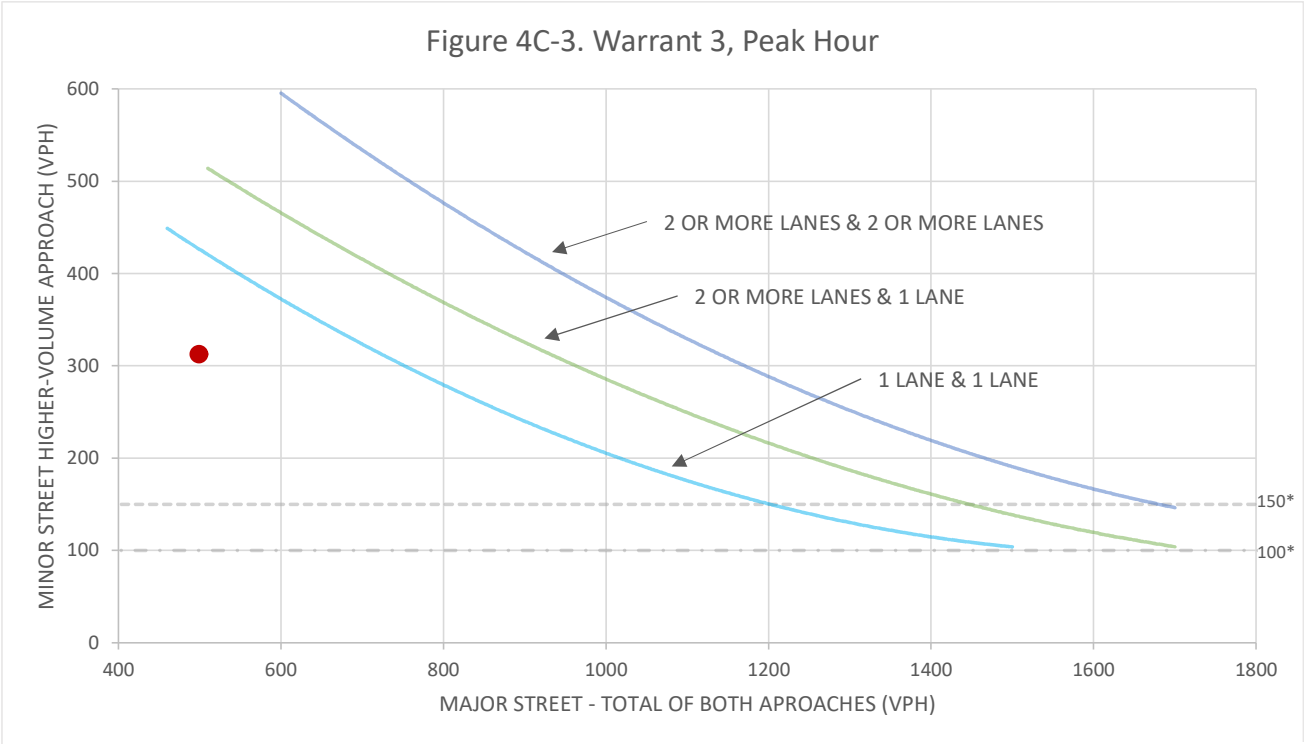
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	<u>No</u>
Traffic Volume (VPH)*	347	264	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Opening Year (2025)
Peak Hour	AM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

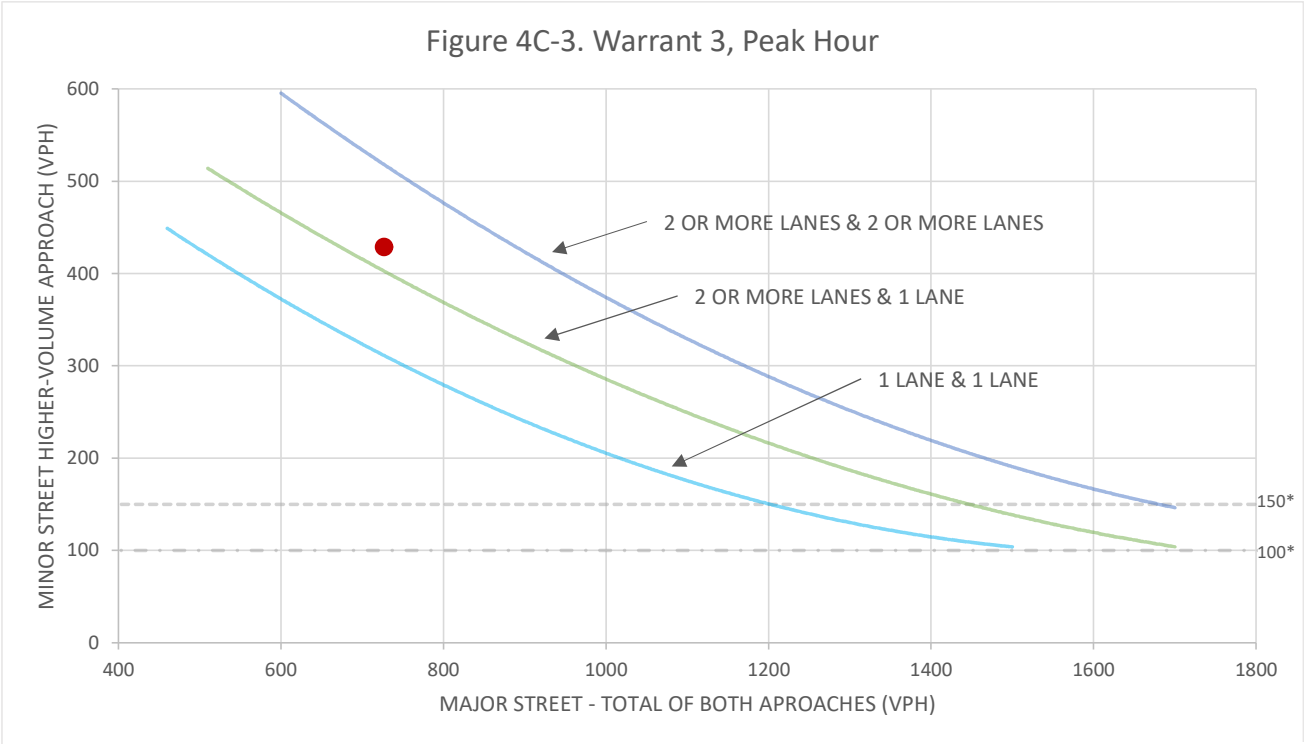
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	<u>No</u>
Traffic Volume (VPH)*	499	313	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Opening Year (2025)
Peak Hour	PM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

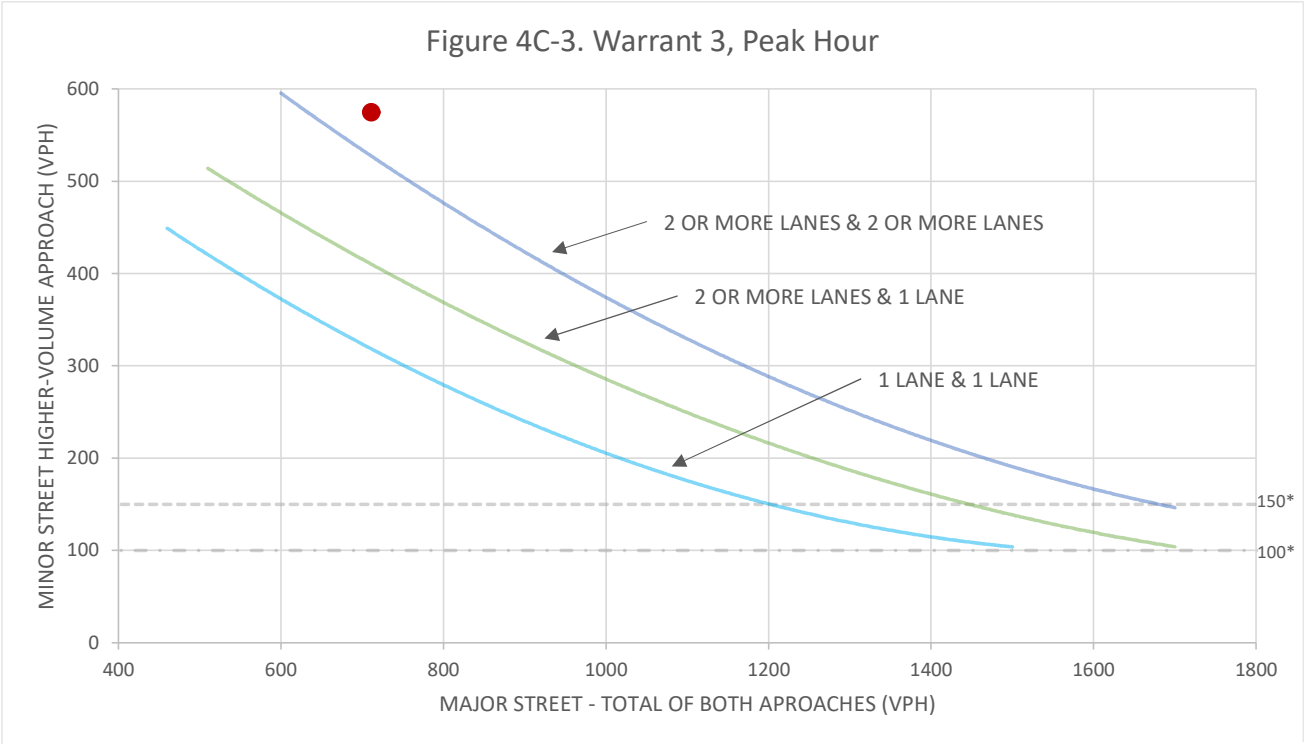
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	727	429	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Opening Year (2025) plus Project
Peak Hour	AM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

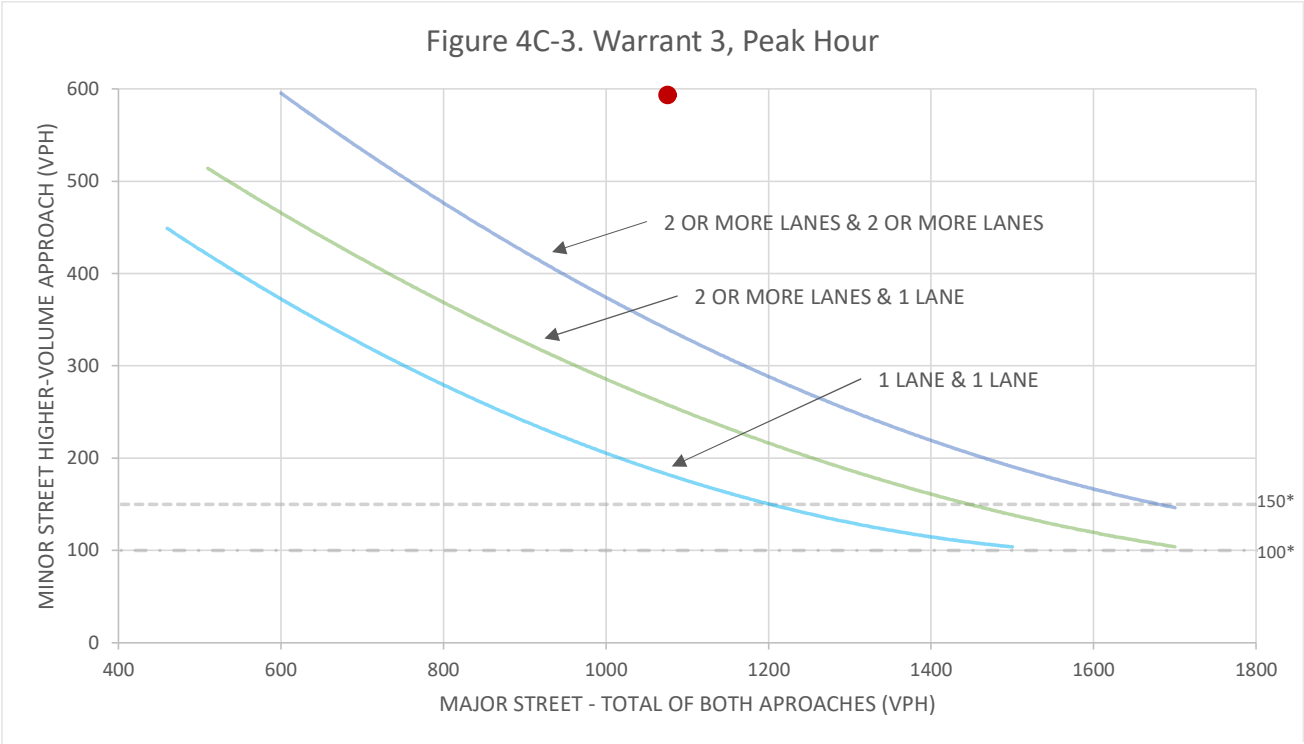
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	711	575	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Opening Year (2025) plus Project
Peak Hour	PM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

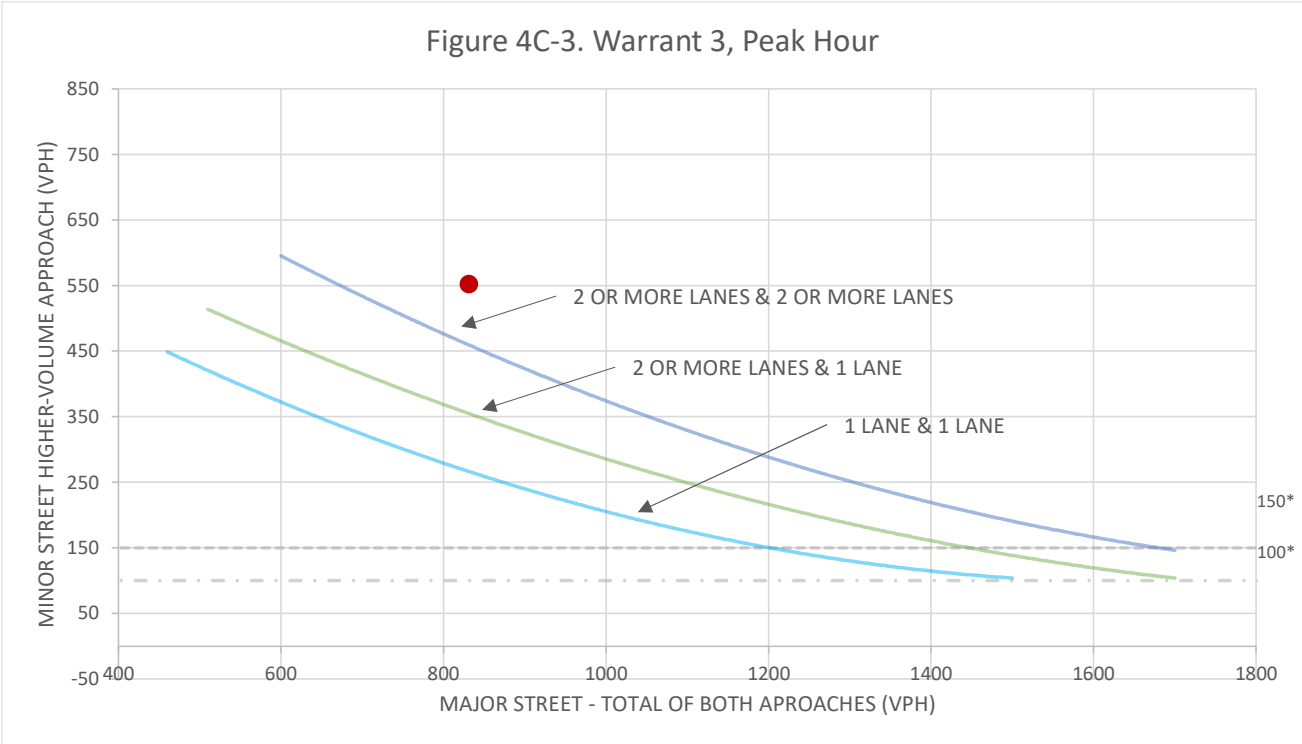
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	1,076	594	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Horizon Year (2040)
Peak Hour	AM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

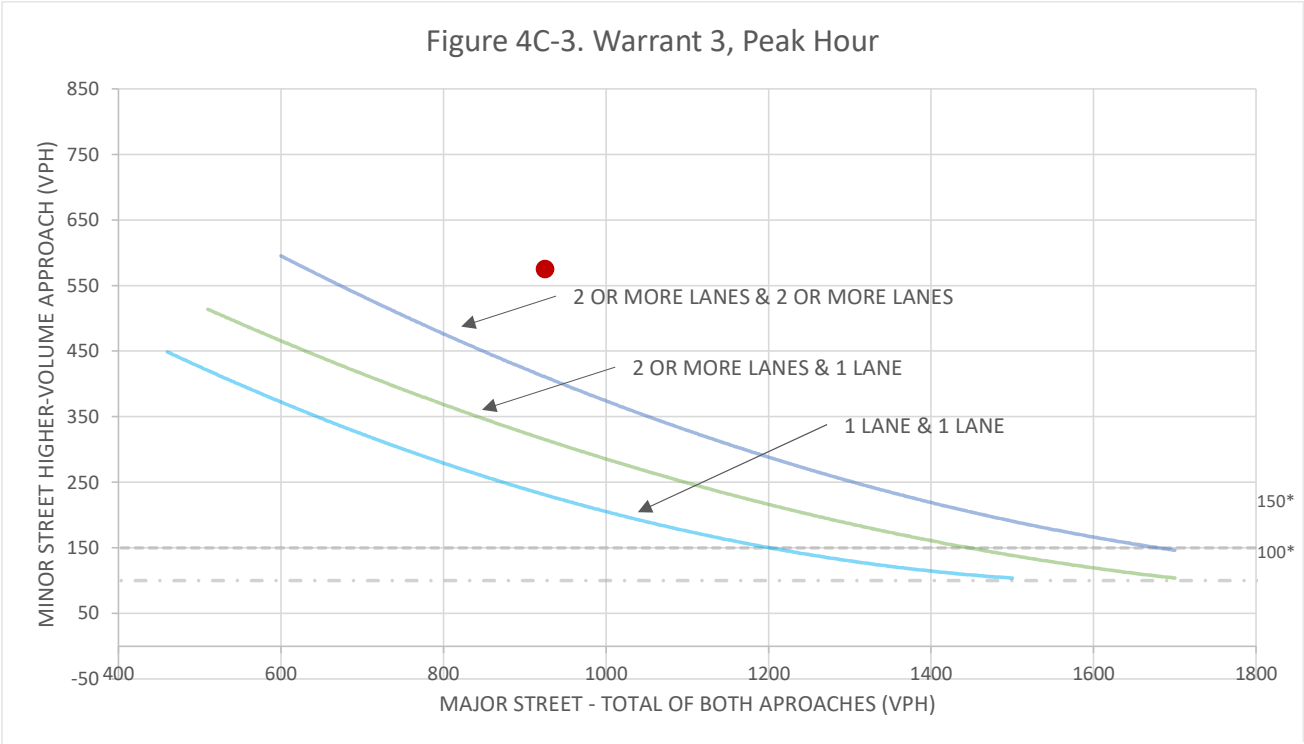
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	831	552	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Horizon Year (2040)
Peak Hour	PM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

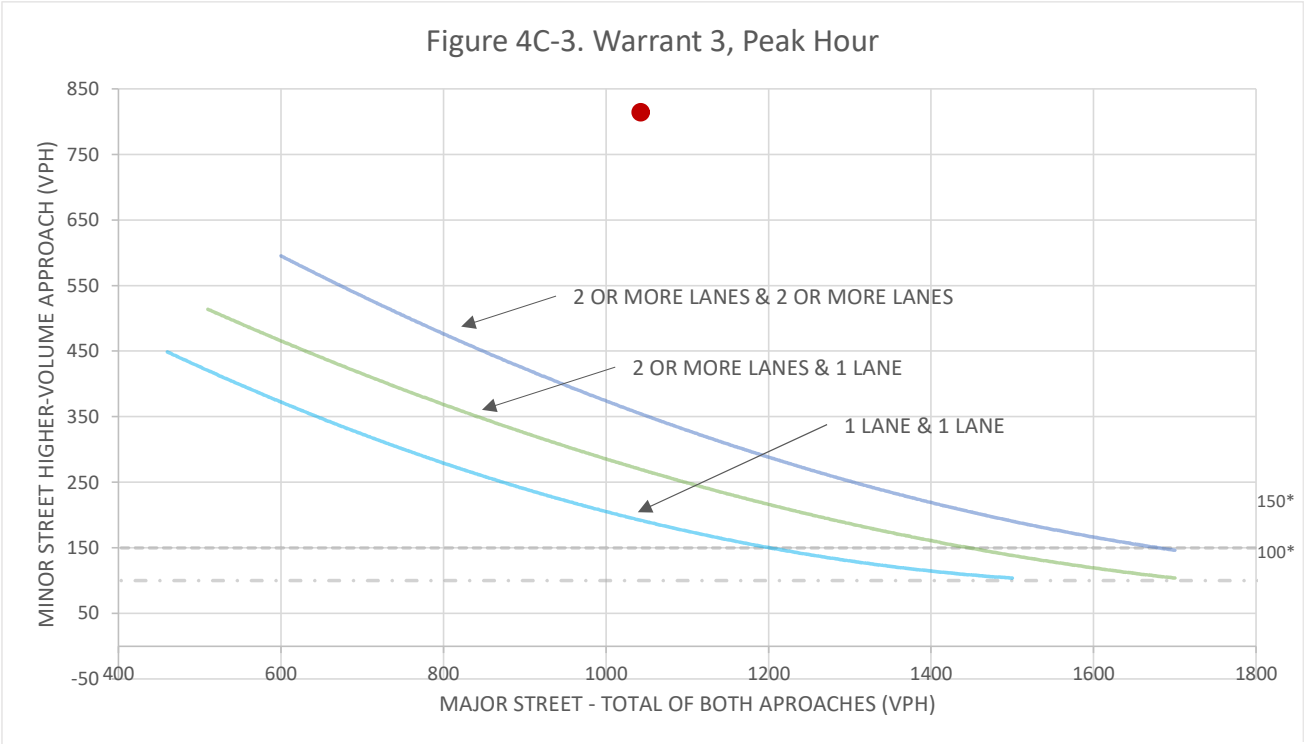
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	925	575	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Horizon Year (2040) plus Project
Peak Hour	AM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

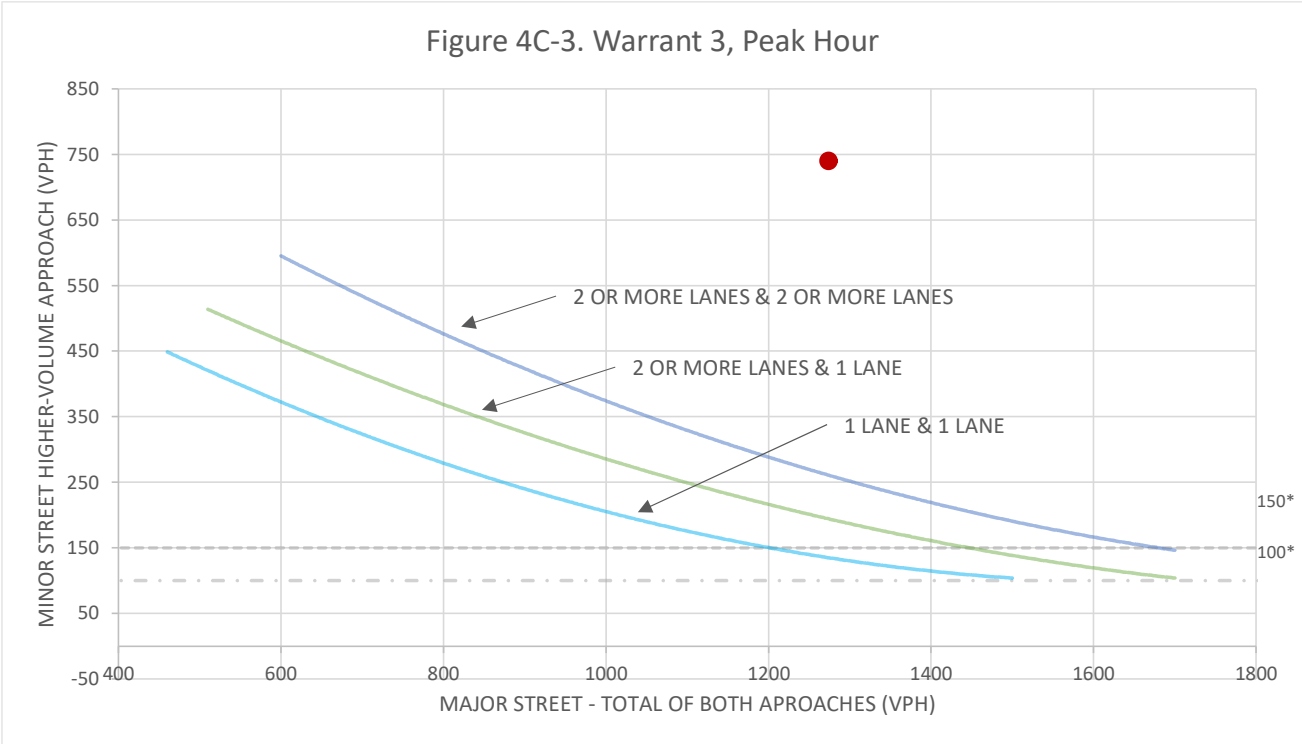
*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	1,043	814	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Project	Apple Valley 143
Scenario	Horizon Year (2040) plus Project
Peak Hour	PM

Intersection #	3
Major Street	Stoddard Wells Road
Minor Street	I-15 NB Ramps - Outer I-15

N-S	E-W
☐	☒
☒	☐



Source: California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

*Note: 150 vph applies as the lower threshold volumes for a minor-street approach with two or more lanes and a 100 vph applies as the lower threshold volumes for a minor-street approach with one lane.

	Major Street	Minor Street	Warrant Met?
	Stoddard Wells Road	I-15 NB Ramps - Outer I-15	
Number of Approach Lanes	1	1	Yes
Traffic Volume (VPH)*	1,274	740	
*Note: Traffic volume for the Major Street approach is the total volume of both approaches. Traffic volume for the Minor Street is the highest volume approach.			

Appendix F

LOS and SimTraffic Queuing Worksheets
w/Improvements

HCM 6th Signalized Intersection Summary Opening Year (2025) plus Project (w/Improvements)

3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	182	24	13	361	127	16	43	11	555	6	13
Future Volume (veh/h)	5	182	24	13	361	127	16	43	11	555	6	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	7	243	32	17	481	169	21	57	15	740	8	17
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	16	331	44	35	556	194	457	337	89	951	290	617
Arrive On Green	0.01	0.20	0.20	0.02	0.21	0.21	0.02	0.23	0.23	0.33	0.54	0.54
Sat Flow, veh/h	1810	1644	217	1810	2624	916	1810	1450	382	1810	542	1151
Grp Volume(v), veh/h	7	0	275	17	330	320	21	0	72	740	0	25
Grp Sat Flow(s),veh/h/ln	1810	0	1861	1810	1805	1735	1810	0	1831	1810	0	1693
Q Serve(g_s), s	0.3	0.0	11.3	0.8	14.4	14.6	0.7	0.0	2.6	23.6	0.0	0.6
Cycle Q Clear(g_c), s	0.3	0.0	11.3	0.8	14.4	14.6	0.7	0.0	2.6	23.6	0.0	0.6
Prop In Lane	1.00		0.12	1.00		0.53	1.00		0.21	1.00		0.68
Lane Grp Cap(c), veh/h	16	0	374	35	382	367	457	0	426	951	0	907
V/C Ratio(X)	0.43	0.00	0.73	0.48	0.86	0.87	0.05	0.00	0.17	0.78	0.00	0.03
Avail Cap(c_a), veh/h	111	0	421	111	408	393	526	0	426	1012	0	907
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	30.6	39.7	31.1	31.2	22.9	0.0	25.1	12.3	0.0	8.9
Incr Delay (d2), s/veh	16.9	0.0	5.8	9.7	16.4	18.0	0.0	0.0	0.9	3.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	5.3	0.4	7.5	7.5	0.3	0.0	1.1	9.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	0.0	36.4	49.4	47.5	49.2	23.0	0.0	25.9	16.0	0.0	9.0
LnGrp LOS	E	A	D	D	D	D	C	A	C	B	A	A
Approach Vol, veh/h	282			667			93			765		
Approach Delay, s/veh	36.9			48.3			25.3			15.8		
Approach LOS	D			D			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.2	23.5	6.1	20.9	6.4	48.3	5.2	21.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	29.5	19.0	5.0	18.5	5.0	43.5	5.0	18.5				
Max Q Clear Time (g_c+I1), s	25.6	4.6	2.8	13.3	2.7	2.6	2.3	16.6				
Green Ext Time (p_c), s	1.2	0.2	0.0	0.6	0.0	0.1	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay	31.6											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary Opening Year (2025) plus Project (w/Improvements)

3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	182	51	18	661	156	2	21	48	573	5	15
Future Volume (veh/h)	7	182	51	18	661	156	2	21	48	573	5	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	10	249	70	25	905	214	3	29	66	785	7	21
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	22	417	117	89	956	226	281	74	169	803	199	598
Arrive On Green	0.01	0.29	0.29	0.05	0.33	0.33	0.00	0.14	0.14	0.34	0.48	0.48
Sat Flow, veh/h	1810	1427	401	1810	2897	684	1810	516	1173	1810	419	1256
Grp Volume(v), veh/h	10	0	319	25	563	556	3	0	95	785	0	28
Grp Sat Flow(s),veh/h/ln	1810	0	1828	1810	1805	1777	1810	0	1689	1810	0	1674
Q Serve(g_s), s	0.6	0.0	15.2	1.3	30.8	30.9	0.1	0.0	5.2	34.1	0.0	0.9
Cycle Q Clear(g_c), s	0.6	0.0	15.2	1.3	30.8	30.9	0.1	0.0	5.2	34.1	0.0	0.9
Prop In Lane	1.00		0.22	1.00		0.39	1.00		0.69	1.00		0.75
Lane Grp Cap(c), veh/h	22	0	535	89	595	586	281	0	243	803	0	798
V/C Ratio(X)	0.46	0.00	0.60	0.28	0.95	0.95	0.01	0.00	0.39	0.98	0.00	0.04
Avail Cap(c_a), veh/h	89	0	535	321	600	591	363	0	320	803	0	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.7	0.0	30.7	46.4	33.1	33.1	36.8	0.0	39.3	23.8	0.0	14.1
Incr Delay (d2), s/veh	14.1	0.0	1.8	1.7	24.2	24.7	0.0	0.0	1.0	26.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	6.6	0.6	16.5	16.4	0.1	0.0	2.1	21.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	0.0	32.5	48.1	57.3	57.8	36.9	0.0	40.4	50.7	0.0	14.2
LnGrp LOS	E	A	C	D	E	E	D	A	D	D	A	B
Approach Vol, veh/h	329			1144			98			813		
Approach Delay, s/veh	33.5			57.3			40.3			49.4		
Approach LOS	C			E			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	38.6	19.1	9.5	34.2	4.9	52.8	5.7	37.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	34.1	19.2	18.0	20.7	5.0	48.3	5.0	33.7				
Max Q Clear Time (g_c+I1), s	36.1	7.2	3.3	17.2	2.1	2.9	2.6	32.9				
Green Ext Time (p_c), s	0.0	0.3	0.0	0.6	0.0	0.1	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	50.6											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary Horizon Year (2040) plus Project (w/Improvements)

3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	245	31	21	515	205	16	47	20	768	14	32
Future Volume (veh/h)	26	245	31	21	515	205	16	47	20	768	14	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	258	33	22	542	216	17	49	21	808	15	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	50	375	48	43	563	224	417	274	118	924	271	614
Arrive On Green	0.03	0.23	0.23	0.02	0.22	0.22	0.02	0.22	0.22	0.33	0.52	0.52
Sat Flow, veh/h	1810	1651	211	1810	2523	1002	1810	1262	541	1810	517	1172
Grp Volume(v), veh/h	27	0	291	22	387	371	17	0	70	808	0	49
Grp Sat Flow(s),veh/h/ln	1810	0	1862	1810	1805	1720	1810	0	1803	1810	0	1689
Q Serve(g_s), s	1.3	0.0	12.5	1.1	18.6	18.7	0.6	0.0	2.8	28.5	0.0	1.2
Cycle Q Clear(g_c), s	1.3	0.0	12.5	1.1	18.6	18.7	0.6	0.0	2.8	28.5	0.0	1.2
Prop In Lane	1.00		0.11	1.00		0.58	1.00		0.30	1.00		0.69
Lane Grp Cap(c), veh/h	50	0	423	43	403	384	417	0	392	924	0	885
V/C Ratio(X)	0.54	0.00	0.69	0.51	0.96	0.97	0.04	0.00	0.18	0.87	0.00	0.06
Avail Cap(c_a), veh/h	104	0	423	104	403	384	485	0	392	924	0	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	31.0	42.2	33.6	33.6	25.7	0.0	27.8	15.5	0.0	10.2
Incr Delay (d2), s/veh	8.9	0.0	4.7	9.2	34.9	37.0	0.0	0.0	1.0	9.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	5.8	0.6	11.4	11.2	0.3	0.0	1.2	13.5	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	35.6	51.4	68.5	70.6	25.7	0.0	28.8	24.9	0.0	10.3
LnGrp LOS	D	A	D	D	E	E	C	A	C	C	A	B
Approach Vol, veh/h	318			780			87			857		
Approach Delay, s/veh	36.9			69.0			28.2			24.1		
Approach LOS	D			E			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.0	23.5	6.6	24.3	6.2	50.3	6.9	24.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	28.5	19.0	5.0	19.5	5.0	42.5	5.0	19.5				
Max Q Clear Time (g_c+I1), s	30.5	4.8	3.1	14.5	2.6	3.2	3.3	20.7				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.6	0.0	0.3	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	43.4											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary Horizon Year (2040) plus Project (w/Improvements)

3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	220	62	31	800	149	10	24	55	695	11	34
Future Volume (veh/h)	12	220	62	31	800	149	10	24	55	695	11	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	13	232	65	33	842	157	11	25	58	732	12	36
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	27	407	114	53	909	169	352	96	222	855	210	631
Arrive On Green	0.02	0.28	0.28	0.03	0.30	0.30	0.01	0.19	0.19	0.33	0.50	0.50
Sat Flow, veh/h	1810	1428	400	1810	3037	566	1810	508	1179	1810	419	1256
Grp Volume(v), veh/h	13	0	297	33	500	499	11	0	83	732	0	48
Grp Sat Flow(s),veh/h/ln	1810	0	1828	1810	1805	1798	1810	0	1688	1810	0	1674
Q Serve(g_s), s	0.8	0.0	14.6	1.9	28.4	28.4	0.5	0.0	4.4	33.4	0.0	1.6
Cycle Q Clear(g_c), s	0.8	0.0	14.6	1.9	28.4	28.4	0.5	0.0	4.4	33.4	0.0	1.6
Prop In Lane	1.00		0.22	1.00		0.31	1.00		0.70	1.00		0.75
Lane Grp Cap(c), veh/h	27	0	521	53	540	538	352	0	318	855	0	841
V/C Ratio(X)	0.48	0.00	0.57	0.62	0.93	0.93	0.03	0.00	0.26	0.86	0.00	0.06
Avail Cap(c_a), veh/h	87	0	542	108	556	554	416	0	318	855	0	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.6	0.0	32.2	50.7	35.9	35.9	33.9	0.0	36.6	19.7	0.0	13.5
Incr Delay (d2), s/veh	12.5	0.0	1.3	11.3	21.5	21.6	0.0	0.0	2.0	10.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	6.4	1.0	15.0	14.9	0.2	0.0	1.9	15.7	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	0.0	33.6	61.9	57.4	57.4	33.9	0.0	38.5	30.4	0.0	13.6
LnGrp LOS	E	A	C	E	E	E	C	A	D	C	A	B
Approach Vol, veh/h	310			1032			94			780		
Approach Delay, s/veh	34.8			57.6			38.0			29.4		
Approach LOS	C			E			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	39.0	24.4	7.6	34.6	5.9	57.5	6.1	36.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	34.5	19.9	6.3	31.3	5.1	49.3	5.1	32.5				
Max Q Clear Time (g_c+I1), s	35.4	6.4	3.9	16.6	2.5	3.6	2.8	30.4				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.3	0.0	0.3	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay	43.6											
HCM 6th LOS	D											

Intersection

Intersection Delay, s/veh 46.5

Intersection LOS E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	182	24	13	361	127	16	43	11	555	6	13
Future Vol, veh/h	5	182	24	13	361	127	16	43	11	555	6	13
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	7	243	32	17	481	169	21	57	15	740	8	17
Number of Lanes	1	1	0	0	2	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	37.7	28.3	16.3	69.2
HCM LOS	E	D	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	10%	0%	0%	100%	93%
Vol Thru, %	0%	80%	0%	88%	90%	100%	0%	0%	2%
Vol Right, %	0%	20%	0%	12%	0%	0%	100%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	54	5	206	133	241	127	289	285
LT Vol	16	0	5	0	13	0	0	289	266
Through Vol	0	43	0	182	120	241	0	0	6
RT Vol	0	11	0	24	0	0	127	0	13
Lane Flow Rate	21	72	7	275	178	321	169	385	381
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.068	0.216	0.02	0.759	0.447	0.803	0.39	0.98	0.962
Departure Headway (Hd)	11.477	10.806	10.557	9.953	9.06	9.01	8.287	9.172	9.105
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	312	332	339	363	398	401	433	396	400
Service Time	9.255	8.584	8.324	7.719	6.811	6.761	6.038	6.926	6.859
HCM Lane V/C Ratio	0.067	0.217	0.021	0.758	0.447	0.8	0.39	0.972	0.953
HCM Control Delay	15.1	16.6	13.5	38.3	19	39.8	16.3	71.4	66.9
HCM Lane LOS	C	C	B	E	C	E	C	F	F
HCM 95th-tile Q	0.2	0.8	0.1	6.1	2.2	7.1	1.8	11.5	11

Intersection

Intersection Delay, s/veh 136.3

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	182	51	18	661	156	2	21	48	573	5	15
Future Vol, veh/h	7	182	51	18	661	156	2	21	48	573	5	15
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	10	249	70	25	905	214	3	29	66	785	7	21
Number of Lanes	1	1	0	0	2	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	80.7	172.2	21	122.2
HCM LOS	F	F	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	8%	0%	0%	100%	93%
Vol Thru, %	0%	30%	0%	78%	92%	100%	0%	0%	2%
Vol Right, %	0%	70%	0%	22%	0%	0%	100%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	69	7	233	238	441	156	298	295
LT Vol	2	0	7	0	18	0	0	298	275
Through Vol	0	21	0	182	220	441	0	0	5
RT Vol	0	48	0	51	0	0	156	0	15
Lane Flow Rate	3	95	10	319	326	604	214	408	404
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.01	0.304	0.031	0.969	0.851	1.568	0.513	1.139	1.121
Departure Headway (Hd)	13.88	12.842	13.228	12.546	9.788	9.748	9.022	10.778	10.706
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	259	282	272	290	372	380	402	339	344
Service Time	11.58	10.542	10.928	10.246	7.488	7.448	6.722	8.478	8.406
HCM Lane V/C Ratio	0.012	0.337	0.037	1.1	0.876	1.589	0.532	1.204	1.174
HCM Control Delay	16.7	21.1	16.4	82.6	48.8	292.6	20.8	125.4	119
HCM Lane LOS	C	C	C	F	E	F	C	F	F
HCM 95th-tile Q	0	1.2	0.1	9.7	7.9	32.8	2.8	15.2	14.7

Intersection

Intersection Delay, s/veh 71.5

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	245	31	21	515	205	16	47	20	768	14	32
Future Vol, veh/h	26	245	31	21	515	205	16	47	20	768	14	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	27	258	33	22	542	216	17	49	21	808	15	34
Number of Lanes	1	1	0	0	2	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	45.7	37.4	17.3	117.7
HCM LOS	E	E	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	11%	0%	0%	100%	89%
Vol Thru, %	0%	70%	0%	89%	89%	100%	0%	0%	3%
Vol Right, %	0%	30%	0%	11%	0%	0%	100%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	67	26	276	193	343	205	407	407
LT Vol	16	0	26	0	21	0	0	407	361
Through Vol	0	47	0	245	172	343	0	0	14
RT Vol	0	20	0	31	0	0	205	0	32
Lane Flow Rate	17	71	27	291	203	361	216	428	428
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.055	0.218	0.082	0.825	0.513	0.908	0.501	1.138	1.124
Departure Headway (Hd)	12.401	11.659	11.362	10.76	9.476	9.42	8.696	9.563	9.449
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	291	310	317	340	383	387	416	381	386
Service Time	10.101	9.359	9.062	8.46	7.176	7.12	6.396	7.355	7.241
HCM Lane V/C Ratio	0.058	0.229	0.085	0.856	0.53	0.933	0.519	1.123	1.109
HCM Control Delay	15.8	17.6	15.1	48.6	21.7	56.8	19.8	120.3	115
HCM Lane LOS	C	C	C	E	C	F	C	F	F
HCM 95th-tile Q	0.2	0.8	0.3	7.2	2.8	9.4	2.7	16.2	15.9

Intersection

Intersection Delay, s/veh 107.4

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	220	62	31	800	149	10	24	55	695	11	34
Future Vol, veh/h	12	220	62	31	800	149	10	24	55	695	11	34
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	13	232	65	33	842	157	11	25	58	732	12	36
Number of Lanes	1	1	0	0	2	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	56	142	18.5	92.8
HCM LOS	F	F	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	10%	0%	0%	100%	88%
Vol Thru, %	0%	30%	0%	78%	90%	100%	0%	0%	3%
Vol Right, %	0%	70%	0%	22%	0%	0%	100%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	79	12	282	298	533	149	375	365
LT Vol	10	0	12	0	31	0	0	375	320
Through Vol	0	24	0	220	267	533	0	0	11
RT Vol	0	55	0	62	0	0	149	0	34
Lane Flow Rate	11	83	13	297	313	561	157	395	384
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.035	0.257	0.039	0.868	0.803	1.431	0.369	1.065	1.021
Departure Headway (Hd)	13.021	11.984	12.155	11.473	9.455	9.401	8.676	10.308	10.177
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	277	302	296	318	385	393	417	356	361
Service Time	10.721	9.684	9.855	9.173	7.155	7.101	6.376	8.008	7.877
HCM Lane V/C Ratio	0.04	0.275	0.044	0.934	0.813	1.427	0.376	1.11	1.064
HCM Control Delay	16.2	18.8	15.3	57.7	41.2	233.4	16.4	99.4	86.1
HCM Lane LOS	C	C	C	F	E	F	C	F	F
HCM 95th-tile Q	0.1	1	0.1	7.8	7	28	1.7	13.3	12.1

Intersection				
Intersection Delay, s/veh	23.1			
Intersection LOS	C			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	282	667	93	765
Demand Flow Rate, veh/h	282	667	93	765
Vehicles Circulating, veh/h	765	85	990	519
Vehicles Exiting, veh/h	519	998	57	233
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	12.4	8.6	9.7	41.2
Approach LOS	B	A	A	E
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	282	667	93	765
Cap Entry Lane, veh/h	632	1265	503	813
Entry HV Adj Factor	1.000	1.000	1.000	1.000
Flow Entry, veh/h	282	667	93	765
Cap Entry, veh/h	632	1265	503	813
V/C Ratio	0.446	0.527	0.185	0.941
Control Delay, s/veh	12.4	8.6	9.7	41.2
LOS	B	A	A	E
95th %tile Queue, veh	2	3	1	14

Intersection				
Intersection Delay, s/veh	103.7			
Intersection LOS	F			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	329	1144	98	813
Demand Flow Rate, veh/h	329	1144	98	813
Vehicles Circulating, veh/h	817	42	1044	933
Vehicles Exiting, veh/h	929	1100	102	253
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	15.8	21.2	10.5	266.6
Approach LOS	C	C	B	F
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	329	1144	98	813
Cap Entry Lane, veh/h	600	1322	476	533
Entry HV Adj Factor	1.000	1.000	1.000	1.000
Flow Entry, veh/h	329	1144	98	813
Cap Entry, veh/h	600	1322	476	533
V/C Ratio	0.549	0.865	0.206	1.526
Control Delay, s/veh	15.8	21.2	10.5	266.6
LOS	C	C	B	F
95th %tile Queue, veh	3	12	1	42

Intersection				
Intersection Delay, s/veh	46.3			
Intersection LOS	E			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	318	780	87	857
Demand Flow Rate, veh/h	318	780	87	857
Vehicles Circulating, veh/h	845	93	1093	581
Vehicles Exiting, veh/h	593	1087	70	292
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	16.1	10.6	10.8	93.6
Approach LOS	C	B	B	F
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	318	780	87	857
Cap Entry Lane, veh/h	583	1255	453	763
Entry HV Adj Factor	1.000	1.000	1.000	1.000
Flow Entry, veh/h	318	780	87	857
Cap Entry, veh/h	583	1255	453	763
V/C Ratio	0.546	0.622	0.192	1.123
Control Delay, s/veh	16.1	10.6	10.8	93.6
LOS	C	B	B	F
95th %tile Queue, veh	3	5	1	25

Intersection

Intersection Delay, s/veh 83.6

Intersection LOS F

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	310	1032	94	780
Demand Flow Rate, veh/h	310	1032	94	780
Vehicles Circulating, veh/h	777	49	977	886
Vehicles Exiting, veh/h	889	1022	110	195
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.8	15.9	9.6	209.8
Approach LOS	B	C	A	F

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	310	1032	94	780
Cap Entry Lane, veh/h	625	1313	509	559
Entry HV Adj Factor	1.000	1.000	1.000	1.000
Flow Entry, veh/h	310	1032	94	780
Cap Entry, veh/h	625	1313	509	559
V/C Ratio	0.496	0.786	0.185	1.395
Control Delay, s/veh	13.8	15.9	9.6	209.8
LOS	B	C	A	F
95th %tile Queue, veh	3	9	1	36

Queuing and Blocking Report
Opening Year (2025) plus Project (w/Improvements)

AM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	43	198	79	246	314	22	46	331	101
Average Queue (ft)	4	86	14	88	151	6	15	142	11
95th Queue (ft)	23	152	47	203	262	20	37	265	55
Link Distance (ft)		806		1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		100			50			100
Storage Blk Time (%)		30		3			0	13	0
Queuing Penalty (veh)		2		0			0	3	0

Queuing and Blocking Report
Opening Year (2025) plus Project (w/Improvements)

PM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	64	214	110	564	625	11	91	728	125
Average Queue (ft)	7	94	18	231	304	0	25	254	21
95th Queue (ft)	32	175	62	470	535	5	62	552	88
Link Distance (ft)		806		1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		100			50			100
Storage Blk Time (%)	1	28		14			3	28	0
Queuing Penalty (veh)	2	2		3			0	6	0

Queuing and Blocking Report
 Horizon Year (2040) plus Project (w/Improvements)

AM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	74	269	125	616	676	46	80	640	125
Average Queue (ft)	22	128	27	344	417	8	28	317	33
95th Queue (ft)	60	227	84	656	742	30	64	556	114
Link Distance (ft)		806		1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		100			50			100
Storage Blk Time (%)	4	42	0	23		0	3	35	0
Queuing Penalty (veh)	10	11	0	5		0	0	16	0

Queuing and Blocking Report
Horizon Year (2040) plus Project (w/Improvements)

PM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	69	289	124	955	1000	44	80	550	125
Average Queue (ft)	13	137	35	631	704	6	28	324	31
95th Queue (ft)	41	238	96	1018	1096	25	63	526	110
Link Distance (ft)		806		1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50		100			50			100
Storage Blk Time (%)	1	40	0	39		0	3	38	0
Queuing Penalty (veh)	3	5	1	12		0	0	17	0

Queuing and Blocking Report
Opening Year (2025) plus Project (w/Improvements)

AM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	T	R	L	TR	L	LTR
Maximum Queue (ft)	44	160	130	150	43	42	64	529	125
Average Queue (ft)	4	52	40	65	2	7	17	139	71
95th Queue (ft)	25	110	87	113	18	26	40	534	122
Link Distance (ft)		806	1683	1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50					50			100
Storage Blk Time (%)		12				0	1	13	11
Queuing Penalty (veh)		1				0	0	46	37

Queuing and Blocking Report
Opening Year (2025) plus Project (w/Improvements)

PM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	T	R	L	TR	L	LTR
Maximum Queue (ft)	37	232	565	632	126	20	55	1080	125
Average Queue (ft)	6	70	187	235	7	1	17	251	82
95th Queue (ft)	28	174	504	567	84	8	38	821	142
Link Distance (ft)		806	1683	1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50					50			100
Storage Blk Time (%)	0	21					0	33	28
Queuing Penalty (veh)	0	2					0	115	91

Queuing and Blocking Report
 Horizon Year (2040) plus Project (w/Improvements)

AM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	T	R	L	TR	L	LTR
Maximum Queue (ft)	75	217	214	253	56	29	52	1891	125
Average Queue (ft)	25	97	91	129	9	7	19	1532	125
95th Queue (ft)	71	181	170	210	42	24	41	2458	126
Link Distance (ft)		806	1683	1683	1683		325	2039	
Upstream Blk Time (%)								42	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	50					50			100
Storage Blk Time (%)	0	44				0	1	96	86
Queuing Penalty (veh)	1	12				0	0	414	329

Queuing and Blocking Report
 Horizon Year (2040) plus Project (w/Improvements)

PM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	T	R	L	TR	L	LTR
Maximum Queue (ft)	75	218	771	824	343	22	51	1071	125
Average Queue (ft)	12	90	505	561	65	5	20	547	116
95th Queue (ft)	48	177	956	1024	433	19	44	1437	147
Link Distance (ft)		806	1683	1683	1683		325	2039	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50					50			100
Storage Blk Time (%)		37					1	62	55
Queuing Penalty (veh)		5					0	244	192

Queuing and Blocking Report
Opening Year (2025) plus Project (w/Improvements)

AM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	54	113	52	821
Average Queue (ft)	23	17	17	255
95th Queue (ft)	50	69	44	701
Link Distance (ft)	800	1661	322	2031
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Opening Year (2025) plus Project (w/Improvements)

PM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	858	45	1892
Average Queue (ft)	27	302	15	1266
95th Queue (ft)	53	896	42	2148
Link Distance (ft)	800	1661	322	2031
Upstream Blk Time (%)				7
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Horizon Year (2040) plus Project (w/Improvements)

AM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	70	363	53	2046
Average Queue (ft)	31	85	22	1928
95th Queue (ft)	58	290	47	2427
Link Distance (ft)	800	1661	322	2031
Upstream Blk Time (%)				81
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Horizon Year (2040) plus Project (w/Improvements)

PM Peak Hour

Intersection: 3: Outer I-15/I-15 NB Ramps & Stoddard Wells Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	74	1028	53	2046
Average Queue (ft)	29	806	20	1926
95th Queue (ft)	59	1202	46	2412
Link Distance (ft)	800	1661	322	2031
Upstream Blk Time (%)				78
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				