

4.13 Transportation

This section describes the existing transportation/circulation setting of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Costco/Vineyard II Retail Development Project (project). Transportation impacts associated with the project were derived from the project-specific Traffic Impact Analysis (TIA) prepared by Kittelson and Associates Inc. and provided as Appendix I.

4.13.1 Existing Conditions

Regional Setting

The City of Murrieta (City) is located in southwestern Riverside County (County) and is composed of 21,511 acres (33.61 square miles). Surrounding cities include the City of Menifee to the north; the City of Temecula to the south and east; the City of Wildomar to the west; and unincorporated Riverside County to the north, south, and east. The San Diego County border is south of Temecula, and Orange County lies to the west of the Santa Ana Mountains. Regional access to the City is provided by Interstate (I) 15 and I-215.

Much of the transportation system, such as the local, collector, and arterial street system, and most of the traffic signals, in the City is owned and controlled by the City. However, some of the facilities are owned and controlled by other agencies, including the California Department of Transportation (Caltrans) and the County, or shared with other jurisdictions, such as the Cities of Temecula and Wildomar. Similarly, while much of the funding for the transportation system is local, significant funds for improvement and maintenance also come from other sources, including state, federal, and County-level funding sources. Finally, transportation planning and programming is the responsibility of a number of agencies, including the City, the County, the Riverside County Transportation Commission (RCTC), and the Southern California Association of Governments (SCAG). At the state level, Caltrans is the agency responsible for funding and maintaining the State Highway System and Interstate Highway System.

The regional planning agencies of the RCTC and SCAG are responsible for regional transportation planning, traffic forecasting, developing regional plans, and distributing regional transportation funds. At the County level, the County operates some County facilities and also administers Measure A, the local county half-cent sales tax for transportation. Several transportation plans and project lists are prepared by the various agencies, including the Regional Transportation Plan (RTP) by SCAG, with input from other agencies, and the State and Regional Transportation Improvement Programs (STIP and RTIP). The Western Riverside Council of Governments (WRCOG) developed and administers the Transportation Uniform Mitigation Fee (TUMF) program (City of Murrieta 2011a).

Project Setting

The approximately 26.3-acre project site is located in the northern portion of the City in the County. Specifically, the project site is located on a vacant lot, north of Clinton Keith Road and east of vacated Antelope Road, northeast of the intersection of I-215 and Clinton Keith Road. The City's General Plan Land Use Map designates the project site as Commercial (C) (City of Murrieta 2011a). The City's Zoning Map shows the site as being zoned Regional Commercial (RC) (City of Murrieta 2017). Land uses adjacent to the site include a vacant lot to the north, residential development to the east, and vacant land and the I-215 to the west; to the south, there is land currently being developed with the Vineyard I project, and further south, Vista Murrieta High School. The vacant sites to the west of

the project site are proposed for commercial development. The project does not propose any changes to existing zoning. Primary access to the project site would be provided through Clinton Keith Road and a new north–south roadway, Warm Springs Parkway, that would be constructed from the southern site boundary to the northern site boundary. Secondary access to the project site would be provided by Creighton Avenue; however, this access is not guaranteed to be in operation by opening day. Therefore, two access alternatives were analyzed, with and without Creighton Avenue access.

Surrounding Roadway Facilities

I-215: I-215 is a north–south interstate highway that provides regional access to the City of Menifee and connects to I-15 to the south and State Route (SR) 60 to the north. Interchanges along I-215 near the project site are provided at Clinton Keith Road (just south of the site) and Scott Road (approximately 3 miles north of the site). In the study area, I-215 provides three travel lanes in each direction.

I-15: I-15 is a north–south interstate highway that provides regional access to the Cities of Corona and Temecula. Interchanges along I-15 near the project site are provided at Clinton Keith Road and the interchange with I-215. In the study area, I-15 provides three travel lanes in each direction.

Clinton Keith Road: Clinton Keith Road is an east–west roadway providing primary access to the project site. This roadway is classified as an arterial to the west of the project site. Clinton Keith Road was designed and constructed at its ultimate width, which accommodate three travel lanes in each direction. At some locations it is striped as two lanes in each direction with the intent to restripe the roadway to add the additional lanes as traffic volumes increase. Currently there are two eastbound through lanes at all locations and two westbound through lanes at all locations except at Mitchell Road/Murrieta Oaks Avenue, where there are three westbound lanes. An extension of Clinton Keith Road to connect Whitewood Road to Leon Road was recently completed and opened to the public in August 2018. In the future, the roadway will be further extended to SR-79 when funding is available.

Whitewood Road: Whitewood Road is a four-lane major north–south roadway located east of the project site. Whitewood Road serves several residential neighborhoods to the north and south of Clinton Keith Road and an extension of Whitewood Road from Baxter Road to Keller Road has recently been completed and allows access to Scott Road to the north.

Antelope Road: Antelope Road is a north–south local roadway without access to Clinton Keith Road. It is a two-lane roadway without sidewalks. The portion of Antelope Road between Clinton Keith Road and the northern boundary of the site has been vacated, with the proposed development of the Vineyard III project on the site just to the east, and Antelope Road would become a cul-de-sac north of the site.

Warm Springs Parkway: Warm Spring Parkway is a planned north–south roadway, providing direct access to the project site. The roadway would be completed to the northern edge of the project boundary. In the future, Warm Springs Parkway is planned to continue north to tie into the existing Antelope Road south of Scott Road, depending on future development.

Figure 4.13-1 shows the selected study intersections in the project’s study area. The study intersections were identified through the City scoping process, and are as follows:

1. I-15 Southbound (SB) Ramps and Clinton Keith Road
2. I-15 Northbound (NB) Ramps and Clinton Keith Road

3. George Avenue and Clinton Keith Road
 4. Inland Valley Drive and Clinton Keith Road
 5. Salida Del Sol and Clinton Keith Road
 6. Elizabeth Lane and Clinton Keith Road
 7. Smith Ranch Road and Clinton Keith Road
 8. Nutmeg Street and Clinton Keith Road
 9. California Oaks Road and Clinton Keith Road
 10. Greer Road/Murrieta Oaks Avenue West and Clinton Keith Road
 11. Mitchell Road/Murrieta Oaks Avenue East and Clinton Keith Road
 12. McElwain Road and Clinton Keith Road
 13. I-215 SB Ramps and Clinton Keith Road
 14. I-215 NB Ramps and Clinton Keith Road
 15. Creighton Avenue and Clinton Keith Road
 16. High School West Driveway/Warm Springs Parkway and Clinton Keith Road
 17. Bronco Way and Clinton Keith Road
 18. Whitewood Road and Clinton Keith Road
 19. Whitewood Road and Linnel Lane
 20. Whitewood Road and Baxter Road
 21. Whitewood Road and Keller Road
 22. Max Gillis Blvd/Briggs Road and Leon Road
 23. Max Gillis Blvd/Thompson Road and SR-79
- A. Warm Springs Parkway and Project Driveway A (future)
 - B. Warm Springs Parkway and Project Driveway B (future)
 - C. Warm Springs Parkway and Project Driveway C (future)
 - D. Warm Springs Parkway and Project Driveway D (future)

In addition to these intersections, the following roadway segments were analyzed:

1. Clinton Keith Road, between I-215 northbound ramps and Warm Springs Parkway
2. Whitewood Road, north of Clinton Keith Road
3. Warm Springs Parkway, north of Clinton Keith Road (future scenarios)

In accordance with the request of Caltrans District 8 staff, freeway mainline segments along I-215 were also evaluated between the Scott Road interchange north and Murrieta Hot Springs Road interchange south of the project site.

Analysis Methodologies

Level of Service Analysis

The City of Murrieta Traffic Impact Preparation Guide provides the following methodologies for LOS analysis. The Highway Capacity Manual 2010 (HCM 2010) (TRB 2010) analysis methodology was applied to the study area intersections. The study area intersection operational analyses in this EIR were prepared using the Synchro 9 software, which implements the HCM 2010 methodology. Due to limitations in the application of the HCM 2010 analysis methodology with Synchro 9, the HCM 2000 methodology would apply in several cases, including intersections with U-turn movements and exclusive pedestrian phases. For this study, U-turn movements were coded as left turns where possible and intersections with exclusive pedestrian phases (intersection of California Oaks Road and Clinton Keith Road) were evaluated with HCM 2000.

The intersections were analyzed using the existing signal timing. In some cases, signalized intersections have cycle lengths of more than 120 seconds, which is the maximum cycle length cited for use by the City. In some cases, cycle lengths are longer due to the time needed for pedestrian crossing movements or exclusive pedestrian phases. To most accurately model field conditions and represent what operations are occurring, the signal timing currently in place was used.

At intersections, LOS is defined based on the delay experienced per vehicle. The LOS methodology for signalized intersections accounts for several variables, including but not limited to the effects of signal type, timing, phasing, and progression on average delay. Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled intersections. At a TWSC intersection, LOS is based on the delay for the worst operating movement. The LOS for an all-way stop-controlled intersection is defined by average delay for movements at the intersection. Table 4.13-1 and Table 4.13-2 define average delay per vehicle and LOS for signalized and unsignalized intersections, respectively.

Table 4.13-1. Level of Service and Average Vehicular Delay Definition for Signalized Intersections

LOS	Delay per Vehicle (seconds)	Definition
A	≤10	LOS A describes operations with a control delay of 10 s/veh or less and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is low, and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	>10 and ≤20	LOS B describes operations with control delay between 10 and 20 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	>20 and ≤35	LOS C describes operations with control delay between 20 and 35 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

Table 4.13-1. Level of Service and Average Vehicular Delay Definition for Signalized Intersections

LOS	Delay per Vehicle (seconds)	Definition
D	>35 and ≤55	LOS D describes operations with control delay between 35 and 55 s/veh and a v/c ratio no greater than 1.0. This level is typically assigned when the v/c ratio is high, and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	>55 and ≤80	LOS E describes operations with control delay exceeding 55 s/veh or a v/c ratio greater than 1.0. This level is typically assigned when the v/c ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.
F	>80	LOS F describes operations with control delay exceeding 80 s/veh or a v/c ratio greater than 1.0. This level is typically assigned when the v/c ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Appendix I.

Notes: LOS = level of service; s/veh: seconds of delay per vehicle; v/c = volume to capacity

Table 4.13-2. Level of Service and Average Vehicular Delay Definition for Unsignalized Intersections

Level of Service	Delay per Vehicle (seconds)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Source: Appendix I.

Intersection Queuing Analysis

Intersection queuing analysis was conducted for the study intersections. Expected intersection queues and how they compare to intersection geometry and available queue storage has influence on traffic operations. The average and 95th percentile queues as reported by Synchro 9 HCM methodology were used to assess queuing at all study intersections. The queue storage was estimated based on the striped queue storage shown in Google Earth and field verification.

Roadway Segment Analysis

For the roadway ADT analysis, weekday and Saturday daily volumes were compared to roadway capacities to determine the volume-to-capacity (v/c) ratio of the segment. Table 5-2 of the City's General Plan provides capacities based on roadway classification, as well as LOS based on ADT. The observed volumes were compared to the capacities corresponding to LOS E. The General Plan provides the maximum two-way ADT volume for each LOS grade C through E, as shown in Table 4.13-3.

Table 4.13-3. Level of Service

Facility	Number of Lanes	Maximum Two-Way Volume (ADT)		
		LOS C	LOS D	LOS E
Urban Arterial	6	43,100	48,500	53,900
Major	4	27,300	30,700	34,100

Source: Table 5-2 from the City of Murrieta's General Plan.

Note: ADT = average daily traffic; LOS = level of service.

Freeway Analysis

The mainline basic freeway segment, weaving, and merge/diverge analyses were assessed using the HCM 2010 methodology. This methodology correlates measured density for the four types of freeway facilities to a standard LOS measure.

Basic Freeway Segments

Peak hour freeway mainline analysis was conducted using the Basic Freeway Segments methodology (Chapter 11, HCM 2010), with calculations performed using the Highway Capacity Software (HCS 2010, Version 6.8). For mainline segments, LOS is measured in terms of density, as shown in Table 4.13-4. Density describes the proximity to other vehicles, is related to the freedom to maneuver within the traffic stream, and is defined as the number of passenger cars per mile per lane.

Table 4.13-4. Level of Service and Density Definition for Basic Freeway Segments

LOS	Density (passenger cars per mile per lane)
A	≤11
B	>11 and ≤18
C	>18 and ≤26
D	>26 and ≤35
E	>35 and ≤45
F	>45 (demand exceeds capacity)

Source: Appendix I.

Note: LOS = level of service.

Merge and Diverge Segments

Peak hour ramp operations analysis was conducted using the Freeway Merge Diverge Segments methodology (Chapter 13, HCM 2010), with calculations performed using the Highway Capacity Software (HCS 2010, Version 6.8). For merge/diverge segments, the methodology evaluates the effects of merging traffic onto the freeway on-ramps and diverging traffic from the freeway for off-ramps. LOS is measured in terms of density (the number of passenger cars per mile per lane), as shown in Table 4.13-5.

Table 4.13-5. Level of Service and Density Definition for Merge/Diverge Segments

LOS	Density (passenger cars per mile per lane)
A	≤10
B	>10 and ≤20

Table 4.13-5. Level of Service and Density Definition for Merge/Diverge Segments

LOS	Density (passenger cars per mile per lane)
C	>20 and ≤28
D	>28 and ≤35
E	>35
F	demand exceeds capacity

Source: Appendix I.

Note: LOS = level of service.

Freeway Weaving Segments

Peak hour weaving segment operations analysis is conducted using the Freeway Weaving Segments methodology (Chapter 12, HCM 2010), with calculations performed using the Highway Capacity Software (HCS 2010, Version 6.8). For weaving segments, the methodology evaluates the effects of lane-changing maneuvers between closely spaced ramps. LOS is measured in terms of density (the number of passenger cars per mile per lane), as shown in Table 4.13-6.

Table 4.13-6. Level of Service and Density Definition for Weaving Segments

LOS	Density (passenger cars per mile per lane)
A	≤10
B	>10 and ≤20
C	>20 and ≤28
D	>28 and ≤35
E	>35
F	demand exceeds capacity

Source: Appendix I.

Note: LOS = level of service.

Vehicle Miles Traveled

Under CEQA Guidelines Section 15064.3, each lead agency is granted discretion to choose “the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.” Further, “if existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.” Although this analysis is not required by CEQA, In order to provide information to the decision makers who may consider this project after July 1, 2020, a qualitative analysis of vehicle miles traveled (VMT) impacts of the proposed project is provided utilizing the VMT calculations incorporated in the Air Quality analysis and guidance from OPR and the WRCOG.

Existing Traffic Volumes

Existing and future traffic operating conditions were evaluated at each study intersection and roadway segment. Project-related traffic would pass through these intersections and roadway segments, and each intersection and roadway segment was analyzed to determine the impact of the project.

Existing weekday PM peak hour and Saturday midday peak hour traffic volumes for the study intersections were obtained through manual turning-movement counts in November and December 2017 and October 2018. The counts were conducted on a typical weekday during the evening (4:00 p.m. to 6:00 p.m.) peak period and on a typical Saturday during the midday peak period (12:00 p.m. to 2:00 p.m.). Intersection peak hour volumes were used to provide a conservative analysis.

Figure 4.13-2 and Figure 4.13-3 show the existing weekday PM peak hour and Saturday midday peak hour traffic volumes at the key study intersections evaluated in the TIA, respectively. Roadway daily tube counts were also conducted in November and December 2017 and 2018 alongside intersection data collection. Freeway mainline data were collected using Caltrans Performance Measurement System for I-215 where available.

Existing Level of Service

Intersections

Level of service (LOS) is based on the delay experienced per vehicle at signalized and unsignalized intersections. The LOS analysis was conducted for weekday PM peak hour and Saturday midday peak hour using existing turning movement volumes. Table 4.13-7 summarizes the existing peak hour LOS calculations for the key study intersections based on existing traffic volumes and current street geometrics. The City's General Plan Circulation Element establishes a minimum LOS standard during peak hours of LOS D for intersections, LOS C for roadway segments, and LOS E at freeway interchanges. As an exception, LOS D for roadway segments may be allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the proposed site and study roadways.

Table 4.13-7. Existing Conditions Intersection Level of Service Analysis

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (s)	LOS	Delay (s)	LOS
1	I-15 SB Ramps and Clinton Keith Road	Signal	21.5	C	18.4	B
2	I-15 NB Ramps and Clinton Keith Road	Signal	21.7	C	19.0	B
3	George Avenue and Clinton Keith Road	Signal	23.5	C	21.9	C
4	Inland Valley Drive and Clinton Keith Road	Signal	24.8	C	10.9	B
5	Salida Del Sol and Clinton Keith Road	TWSC ¹	59.1 (SBL/R)	F	24.6 (SBL/R)	C
6	Elizabeth Lane and Clinton Keith Road	TWSC ¹	91.1 (NBL/T/R)	F	29.7 (NBL/T/R)	D
7	Smith Ranch Road and Clinton Keith Road	Signal	13.1	B	12.4	B
8	Nutmeg St and Clinton Keith Rd	Signal	34.0	C	16.5	B
9	California Oaks Rd and Clinton Keith Rd	Signal	44.3	D	21.2	C
10	Greer Rd/Murrieta Ave West and Clinton Keith Rd	Signal	15.5	B	10.8	B

Table 4.13-7. Existing Conditions Intersection Level of Service Analysis

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (s)	LOS	Delay (s)	LOS
11	Mitchell Rd/Murrieta Oaks Ave East and Clinton Keith Rd	Signal	28.9	C	15.7	B
12	McElwain Rd and Clinton Keith Rd	Signal	32.3	C	25.0	C
13	I-215 SB Ramps and Clinton Keith Rd	Signal	16.3	B	13.7	B
14	I-215 NB Ramps and Clinton Keith Rd	Signal	20.0	B	16.3	B
15	Creighton Ave and Clinton Keith Rd	Signal	6.4	A	5.4	A
16	High School West Dwy/Warm Springs Parkway and Clinton Keith Rd	TWSC ¹	20.8 (NBR)	C	NA ²	NA
17	Bronco Way and Clinton Keith Rd	Signal	10.9	B	5.9	A
18	Whitewood Rd and Clinton Keith Rd	Signal	46.7	D	26.8	C
19	Whitewood Rd and Linnel Ln	Signal	12.8	B	13.9	B
20	Whitewood Rd and Baxter Rd	Signal	18.6	B	13.4	B
21	Whitewood Rd and Keller Rd	Signal	14.9	B	12.8	B
22	Max Gillis Blvd/Briggs Rd and Leon Rd	Signal	35.9	D	24.9	C
23	Max Gillis Blvd/Thompson Rd and SR-79	Signal	89.4	F	62.8	E

Source: Appendix I.

Notes: LOS = level of service; I = Interstate; SB = southbound; NB = northbound; TWSC = two-way stop-controlled; L = left; R = right; T = through; HS = high school; SR = State Route.

¹ TWSC: Two-way stop control - delay reported reflects the critical movement, shown in parentheses.

² No vehicles were recorded on the northbound approach, so delay could not be calculated.

Boldface type indicates the intersection does not meet the applicable agency standards.

As indicated in Table 4.13-7, all study intersections currently operate at a satisfactory LOS, except for the following:

- Salida Del Sol and Clinton Keith Road: The southbound approach to the intersection operates at LOS F during the weekday PM peak hour.
- Elizabeth Lane and Clinton Keith Road: The northbound approach to the intersection operates at LOS F during the weekday PM peak hour.
- Max Gillis Boulevard/Thompson Road and SR-79: This signalized intersection operates at LOS F during the weekday PM peak hour and LOS E during the Saturday midday peak hour.

Queuing Analysis

- Intersection queuing analysis was conducted for the study intersections. Expected intersection queues and how they compare to intersection geometry and available queue storage has influence on traffic operations. The average and 95th percentile queues as reported by Synchro 9 HCM methodology were used to assess queuing at all study intersections. The queue storage was estimated based on the striped queue storage shown in Google Earth and field verification. Available queue storage and 95th percentile queue lengths for turning lanes at each study intersection are shown in Table 4.13-8.

Table 4.13-8. Existing Queues

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue	
				Weekday PM	Saturday Midday
8	Nutmeg St and Clinton Keith Rd	EBL	125	20 70	10 49
		WBL	225	158 532	61 198
		NBL	175	28 72	20 62
		NBR	360 ²	0 67	0 48
		SBL	50	47 110	21 65
9	California Oaks Rd and Clinton Keith Rd	WBL	220 ³	332 797	158 301
		NBL	100 ⁴	116 227 ⁴	29 81
		NBR	485 ²	0 120	0 78
10	Greer Rd/Murrieta Oaks Ave and Clinton Keith Rd	EBL	260	40 88	18 59
		WBL	150	23 59	13 46
		WBR	150	13 47	9 38
		NBL	150	19 50	12 42
		NBR	150	0 5	0 0
		SBL	150	70 134	46 118
11	Mitchell Rd/Murrieta Oaks Ave and Clinton Keith Rd	EBL	150	7 37	8 38
		WBL	150	75 199	58 162
		WBR	160	0 0	0 0
		NBL	190 ²	12 52	11 47
		SBL	150	1 10	1 7
		SBR	150	0 0	0 0
12	McElwain Rd and Clinton Keith Rd	EBL	200 (x2)	123 222	74 146
		EBR	100	0 0	0 0
		WBL	175	17 55	13 47
		WBR	160	14 58	0 38
		NBL	50	11 40	6 27
		SBL	235 (x2)	124 225	106 208
13	I-215 SB Ramps and Clinton Keith Rd	EBR	385	124 212	76 155
		WBR	380	57 79	20 60
		SBR	1,100 ¹	155 221	50 103
14	I-215 NB Ramps and Clinton Keith Rd	NBL	960 ¹	284 473	210 278
		NBR	960 ¹	244 425	59 124
15	Creighton Ave and Clinton Keith Rd	EBU	250	3 16	2 13
		EBR	200	0 17	0 14
		WBL	235	14 45	2 12
		NBL	100	19 56	14 42
		NBR	390 ²	0 21	0 12
17	Bronco Way and Clinton Keith Rd	EBU	200	8 30	0 4
		WBL	315	82 169	7 38
		NBL	355 ²	27 62	5 26
		NBR	355 ²	0 42	0 12
18	Whitewood Rd and Clinton Keith Rd	EBL	250 (x2)	188 359	69 164
		EBR	250	3 69	0 56
		WBL	200 (x2)	45 95	25 74

Table 4.13-8. Existing Queues

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue	
				Weekday PM	Saturday Midday
		WBR	350	0 0	0 0
		NBL	300	152 304	50 147
		SBL	100	64 147	24 84
19	Whitewood Rd and Linnel Ln	EBL	130	13 65	9 50
		EBR	500 ²	0 0	0 32
		NBL	200	8 45	7 40
		SBL	200	0 7	0 7
20	Whitewood Rd and Baxter Rd	EBL	215	5 37	1 14
		EBR	>500 ²	0 50	0 13
		WBL	125	2 23	2 21
		NBL	215	54 232	14 80
		NBR	500 ²	0 0	0 0
		SBL	200	0 7	2 22
21	Whitewood Rd and Keller Rd	EBL	175	8 79	2 41
		EBR	545 ²	0 7	0 0
		WBL	200	2 25	2 31
		NBL	225	7 68	3 46
		SBL	115	2 28	1 21

Source: Appendix I.

Notes: EB = eastbound; L = left; WB = westbound; NB = northbound; R = right; SB = southbound; I = Interstate; U = U-turn.

Where the table indicates (x2) it means there are two lanes with the indicated feet of storage.

¹ Distance to development of separate turn lanes from highway off-ramp.

² Approximate distance to adjacent intersection.

³ Two-way left turn lanes provide additional storage up to 730 feet.

⁴ The City has recently completed a project that has extended this left turn storage to 250 feet.

Boldface type indicates the 95th percentile queue exceeds the available storage by 25 feet or more.

As shown in the table, queues currently exceed storage capacity for one or more movements at the following study locations:

- Nutmeg Street and Clinton Keith Road (westbound left [WBL], southbound left [SBL])
- California Oaks Road and Clinton Keith Road (WBL, northbound left [NBL])
 - Note that the northbound left turn storage has recently been extended to 250 feet and therefore, the NBL queue does not exceed the storage in place today.
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road (WBL)
- Whitewood Road and Clinton Keith Road (SBL)

Roadway Segment Analysis

An assessment of average daily traffic (ADT) was conducted for the two roadway segments listed below for existing conditions:

1. Clinton Keith Road, between I-215 northbound ramps and Warm Springs Parkway
2. Whitewood Road, north of Clinton Keith Road

Daily counts were collected on a midweek day in November 2017 and on a Saturday in December 2017. Table 4.13-9 summarizes the existing conditions and LOS for the roadway segments using the methodology described in Section 4.13.2. The counts were adjusted up to 2018 volumes using the additional intersection turning movement counts collected in 2018. As indicated in Table 4.13-9, both roadway segments operate under capacity at LOS C under existing conditions on both a weekday and Saturday.

Table 4.13-9. Existing Conditions Average Daily Traffic Analysis

Segment	Metric	Weekday	Saturday
Clinton Keith Road, between Interstate 215 northbound ramps and Warm Springs Pkwy	Volume (daily)	25,264	20,276
	Capacity (daily, LOS E)	53,900	53,900
	LOS	C	C
	v/c ratio	0.47	0.38
Whitewood Road, north of Clinton Keith Road	Volume (daily)	12,504	10,668
	Capacity (daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c Ratio	0.37	0.31

Source: Appendix I.

Notes: LOS = level of service; v/c = volume-to-capacity

The capacities shown are based on roadway classification and taken from the Circulation Element of the City's General Plan, Table 5-2, for roadways operating at LOS E. The LOS is based on the City's General Plan maximum two-way ADT volume for each LOS grade. The table provides maximum ADT volumes for LOS C, D, and E. Clinton Keith Road is an urban arterial, and Whitewood Road a major roadway.

Freeway Analysis

The existing conditions analysis for both northbound and southbound segments of the I-215 freeway were conducted during weekday AM and PM and Saturday midday peak hours. Tables 4.13-10 and 4.13-11 show the results of this analysis. As shown in the tables below, the freeway study segments operate with an acceptable LOS during the analysis time periods.

Table 4.13-10. Existing Conditions Freeway Analysis – Northbound

I-215 Northbound Segment			Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS ³	Density ²	LOS ³	Density ²	LOS ³
NB-1	Basic	North of Scott Road	14.1	B	24.1	C	₋₃	₋₃
NB-2	Merge	Scott Road On Ramp	18.3	B	26.8	C	₋₃	₋₃
NB-3	Diverge	Scott Road Off Ramp	24.3	C	31.1	D	₋₃	₋₃
NB-4	Basic	Between Scott Road and Clinton Keith On Ramp	15.6	B	24.7	C	18.7	C
NB-5	Merge	Clinton Keith On Ramp	19.4	B	26.8	C	22.2	C
NB-6	Merge	Clinton Keith On Ramp Loop	18.9	B	26.3	C	21.2	C
NB-7	Diverge	Clinton Keith Off Ramp	22.8	C	32.9	D	27.2	C
NB-8	Basic	Between Clinton Keith Off Ramp and Los Alamos On Ramp	14.5	B	26.2	D	19.0	C
NB-9	Merge	Los Alamos On Ramp	18.6	B	28.8	D	22.6	C
NB-10	Diverge	Los Alamos Off Ramp	22.5	C	32.3	D	26.8	C

Table 4.13-10. Existing Conditions Freeway Analysis – Northbound

I-215 Northbound Segment			Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS ³	Density ²	LOS ³	Density ²	LOS ³
NB-11	Basic	Between Los Alamos Off Ramp and Murrieta Hot Springs Off Ramp	14.3	B	25.9	C	18.8	B
NB-12	Merge	Murrieta Hot Springs On Ramp	19.1	B	29.4	D	23.1	C
NB-13	Merge	Murrieta Hot Springs On Ramp (Loop)	11.6	B	21.2	C	16.6	B
NB-14	Diverge	Murrieta Hot Springs Off Ramp	11.5	B	25.9	C	19.2	B
NB-15	Basic	South of Murrieta Hot Springs Road	16.4	B	32.9	D	23.9	C

Source: Appendix I.

Notes: I = Interstate; LOS = level of service; NB = northbound.

¹ HCM 2010 definition, Basic Freeway Segment, Weaving Segment, Merge Segment, or Diverge Segment.

² Density expressed in pc/mi/ln, passenger cars per mile per lane.

³ No data available for Saturday peak hour conditions.

Table 4.13-11. Existing Conditions Freeway Analysis – Southbound

I-215 Northbound Segment			Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS ³	Density ²	LOS ³	Density ²	LOS ³
SB-1	Basic	North of Scott Road	19.2	B	20.3	C	₃	₃
SB-2	Diverge	Scott Road Off Ramp	27	C	28.1	D	₃	₃
SB-3	Merge	Scott Road On Ramp	27.2	C	24.8	C	₃	₃
SB-4	Basic	Between Scott Road and Clinton Keith Off Ramp	22.4	C	20.9	C	23.1	C
SB-5	Diverge	Clinton Keith Off Ramp	29.3	D	28.5	D	29.7	D
SB-6	Merge	Clinton Keith On Ramp Loop	22.2	C	20.1	C	22.6	C
SB-7	Merge	Clinton Keith On Ramp	25.4	C	23.0	C	25.6	C
SB-8	Basic	Between Clinton Keith Off Ramp and Los Alamos On Ramp	22.7	C	19.9	C	23.2	C
SB-9	Diverge	Los Alamos Off Ramp	30.7	D	29.0	D	31.4	D
SB-10	Weave	Between Los Alamos On Ramp and Murrieta Hot Springs	20	C	16.4	B	19.6	B
SB-11	Merge	Murrieta Hot Springs On Ramp (Loop)	31.1	D	24.7	C	29.7	D
SB-12	Merge	Murrieta Hot Springs On Ramp	32.6	D	26.3	C	31.4	D
SB-13	Basic	South of Murrieta Hot Springs Road	30.9	D	22.1	C	28.9	D

Source: Appendix I

Notes: I = Interstate; LOS = level of service; NB = northbound.

- ¹ HCM 2010 definition, Basic Freeway Segment, Weaving Segment, Merge Segment, or Diverge Segment.
- ² Density expressed in pc/mi/ln, passenger cars per mile per lane.
- ³ No data available for Saturday peak hour conditions.

Alternative Transportation Facilities

Transit Service

Public transit service in and around the City is provided by the Riverside Transit Agency. The Riverside Transit Agency currently offers five fixed bus routes in the City. Of these, Riverside Transit Route 61 provides service on Clinton Keith Road through a bus stop at the intersection of Clinton Keith Road and the main entrance to the Vista Murrieta High School. This bus line operates from Sunday to Saturday from approximately 7:00 a.m. to 7:00 p.m. and provides connections to Menifee and Temecula. During the weekday morning, headways are approximately 30 minutes in the northbound direction and 60 minutes in the southbound direction. During the weekday evening, headways are approximately 60 to 70 minutes in both directions. On the weekend, headways are approximately 85 minutes. Route 23 also offers service to the project site. Normal operation of Route 23 does not include direct access to the project site; however, an alternate route has a stop at Vista Murrieta High School and operates twice daily at 2:45 p.m. and 3:10 p.m. when school is in session.

Bicycle and Pedestrian Facilities

In the immediate vicinity of the site, pedestrian facilities include sidewalks and crosswalks. Roadways near the project site that currently have sidewalks include Whitewood Road and portions of Clinton Keith Road. No sidewalks are provided west of the project site over I-215 on the north side, but sidewalks are on the south side, and the on-ramps are designed to accommodate pedestrians. Dedicated crosswalks to cross Clinton Keith Road are limited and are only provided at the signalized intersections of Bronco Way (Vista Murrieta High School entrance) and Whitewood Road.

Class II bike lanes are provided along Clinton Keith Road from Copper Craft Drive to Whitewood Road and on Whitewood Road south of Clinton Keith Road within the study area. The City's General Plan Circulation Element identifies the need for complete streets that promote bicycle and pedestrian connectivity and safety. Under existing conditions, the City's circulation system aims to provide connections between neighborhoods and commercial corridors, providing an enhanced network of sidewalks and bicycle lanes and trails that improve accessibility and encourage people to opt for alternative modes of transportation.

4.13.2 Relevant Plans, Policies, and Ordinances

Federal

There are no applicable federal regulations related to traffic that would apply to the project.

State

California Department of Transportation

As a general rule, Caltrans “endeavors to maintain a target LOS at the transition between LOS ‘C’ and LOS ‘D’ on State highway facilities” (Caltrans 2002); however, Caltrans does not require that LOS D be maintained and acknowledges that this LOS goal may not always be feasible. Instead, Caltrans recommends that the lead agency consult with the agency to determine the appropriate target LOS for a particular state highway facility.

California State Senate Bill 375

California State Senate Bill 375 became law effective January 1, 2009, as implementing legislation of Assembly Bill 32, which requires the state to reduce greenhouse gas emissions across all industry sectors back to 1990 levels by the year 2020. Both laws are administered and enforced through the California Air Resources Board.

Given that the transportation sector is the largest contributor to greenhouse gas pollution throughout California, Senate Bill 375 targets reduction of greenhouse gas emissions specific to cars and light trucks. The law requires each of the state’s 18 metropolitan planning organizations (MPOs) to develop a Sustainable Communities Strategy, which would include specific strategies for improving land use and transportation efficiency. SCAG is the metropolitan planning organization for six counties (Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial) and includes 184 cities. The primary strategy includes the identification and development of higher density mixed-use projects around public transportation system stations. Other supported strategies relate to the integration of intelligent transportation systems to improve circulation on freeways and arterials.

Every Sustainable Communities Strategy to be developed under Senate Bill 375 is required to be integrated into each metropolitan planning organization’s RTP, encouraging local jurisdictions to comply. Transportation improvement projects not listed in the RTP become ineligible to receive funding from some state and federal programs (City of Murrieta 2011a).

State Transportation Improvement Program

STIP is a multi-year capital improvement program for transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund and other funding sources. STIP programming generally occurs every 2 years. The programming cycle begins with the release of a proposed fund estimate in July of odd-numbered years, followed by California Transportation Commission adoption of the fund estimate in August (odd years). The fund estimate serves to identify the amount of new funds available for the programming of transportation projects. Once the fund estimate is adopted, Caltrans and the regional planning agencies prepare transportation improvement plans for submittal to the California Transportation Commission by December 15 (odd years). Caltrans prepares the Interregional Transportation Improvement Program, and regional agencies prepare the RTIPs. Public hearings are held in January (even years) in both Northern and Southern California. The STIP is adopted by the California Transportation Commission by April (even years). Cities and other local agencies work through their Regional Transportation Planning Agency to nominate projects for inclusion in the STIP. Once projects are programmed, agencies may begin the project implementation process. Regional Transportation Agencies such as the RCTC are allocated 75% of STIP funding for regional transportation projects in their Regional Improvement Program, and Caltrans is allocated 25% for interregional transportation projects in the Interregional Improvement Program (City of Murrieta 2011a).

Regional Transportation Plan

The Regional Transportation Plan (RTP) is developed, maintained, and updated by SCAG, Southern California's metropolitan planning organization. SCAG encompasses the six counties in Southern California including Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial. On May 8, 2008, the *2008 Regional Transportation Plan: Making the Connections* was adopted by the Regional Council of SCAG.

The RTP is divided into three sections. At the center is the RTIP (discussed above), which forms the foundation of the RTP project investment strategy and represents the first 6 years of already-committed funding. The RTP also contains an additional financially constrained set of transportation projects above and beyond the RTIP. Finally, the RTP contains an unconstrained, illustrative list of potential projects that the region would pursue given additional funding.

SB 743

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, effective January 2014, directing the Governor's Office of Planning and Research (OPR) to develop revisions to the California Environmental Quality Act (CEQA) Guidelines by July 1, 2014, to establish new criteria for determining the significance of transportation impacts and to define alternative metrics for traffic LOS. This started a process that changes transportation impact analysis under CEQA. These changes include elimination of automobile delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts for land use projects and plans in California. Additionally, as part of SB 743, parking impacts for particular types of development projects in areas well served by transit are not considered significant impacts on the environment. According to the legislative intent contained in SB 743, these changes to current practice were necessary to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

Commencing July 1, 2020, State law mandates that in determining the environmental impact of a proposed project with respect to transportation, lead agency must utilize methodologies that analyze "vehicle miles traveled" or "VMT," rather than level of service or other measures of transportation impacts. Section 15064.3 of the CEQA Guidelines describes specific considerations for evaluating a project's transportation impacts and concludes that vehicle miles traveled is generally the most appropriate measure of transportation impacts. "Vehicle miles traveled" is defined by the CEQA Guidelines as "the amount and distance of automobile travel attributable to a project" and may take into account "the effects of the project on transit and non-motorized travel."¹ Guidelines Section 15064.3 also indicates that for development projects, "a project's effect on automobile delay shall not constitute a significant environmental impact."

The requirement to analyze VMT is prospective only and does not apply to environmental review documents released prior to July 1, 2020. Accordingly, this Draft EIR continues to utilize the level of service methodology adopted by the lead agency based on the City's General Plan.

Local

Riverside County Measure A

Regional transportation in the City is overseen by the RCTC, the transportation planning agency responsible for regional planning in the County. As the County transportation authority, the RCTC administers Measures A, the voter

¹ CEQA Guidelines Section 15064.3(a).

approved half-cent transportation sales tax adopted by County voters in 1976 and extended to the year 2039 by voters in 2002. Since its implementation, Measure A has provided a steady source of revenue for transportation improvements in the County, raising nearly \$1 billion from 1989 through 2009.

Western Riverside Council of Governments (WRCOG) Transportation Uniform Mitigation Fee

The City is a member of WRCOG. WRCOG is a voluntary association that represents member local governments in order to provide cooperative planning, coordination, and technical assistance for issues of mutual concern that cross jurisdictional lines. WRCOG addresses issues of regional importance in the area of goods movement, rail crossings, and growth. WRCOG also developed and administers the TUMF program, which ensures that new development pays its fair share for the increased traffic that it creates. The TUMF program will provide significant additional funds from new development to make improvements to the regional system, complementing funds generated by Measure A, local transportation fee programs, and other potential funding sources. The establishment of this fee on new development creates a manner by which developers contribute their fair share to the regional transportation system. TUMF fees are allocated as follows (City of Murrieta 2011a):

- Regional Transit Improvements – 2.6% of TUMF funds are allocated to the Riverside Transit Agency for regional transit improvements.
- Regionally Significant Transportation Improvements – 48.7% of TUMF funds are allocated to the RCTC for programming improvements to arterials of regional significance.
- Zones – The WRCOG area is split into five zones; the City is located in the Southwest TUMF Zone, along with unincorporated County area and the Cities of Temecula, Wildomar, Canyon Lake, Menifee, and Lake Elsinore. 48.7% of TUMF funds are allocated to the five zones for improvements to the Regional System of Highways and Arterials. The amount of TUMF funds allocated to each zone is proportionate to the amount of TUMF revenue generated from each zone.

Riverside County Congestion Management Program

The passing of Proposition 111 in June 1990 established a process for each metropolitan county in California with an urbanized area of more than 50,000 population, including the County, to prepare a Congestion Management Plan (CMP). The CMP, which was prepared by the RCTC in consultation with the County and cities within the County, is an effort to more directly align land use, transportation, and air quality management efforts and to promote reasonable growth management programs that effectively use statewide transportation funds while ensuring that new development pays its fair share of needed transportation improvements. Additionally, the passing of Proposition 111 provided additional transportation funding through an increase in the state gas tax of \$0.09 per gallon.

Although implementation of the CMP was made voluntary by the passage of Assembly Bill 2419, the CMP requirement has been retained in all five urbanized counties within the SCAG region. In addition to its value as a transportation management tool, CMPs have been retained in these counties because of the Federal Congestion Management System requirement that applies to large urban areas that are not in attainment of federal air quality standards. These counties recognize that the CMP provides a mechanism through which locally implemented programs can fulfill most aspects of a regional requirement that would otherwise have to be addressed by the regional agency (SCAG).

The focus of the CMP is the development of an enhanced traffic monitoring system in which real-time traffic count data can be accessed by the RCTC to evaluate the condition of the congestion management system and meet other monitoring requirements at the state and federal levels. Per the CMP-adopted LOS standard of E, when a congestion

management system segment falls to F, a deficiency plan is required. Preparation of a deficiency plan is the responsibility of the local agency where the deficiency is located. Other agencies identified as contributors to the deficiency are also required to coordinate with the development of the plan. The plan must contain mitigation measures, including transportation demand management strategies and transit alternatives, and a schedule of mitigating the deficiency. To ensure that the congestion management system is appropriately monitored to reduce the occurrence of CMP deficiencies, it is the responsibility of local agencies, when reviewing and approving development proposals, to consider the traffic impacts on the congestion management system. CMP facilities within the City are I-15, I-215, and State Route 79.

County of Riverside General Plan

The County General Plan Circulation Element includes a range of objectives and policies that address various aspects of circulation, including but not limited to roadways, public transportation, trucking, and non-motorized facilities. The following policies from General Plan Circulation Element may be applicable to the project (Riverside County 2015):

- Policy C 1.4** Utilize existing infrastructure and utilities to the maximum extent practicable and provide for the logical, timely, and economically efficient extension of infrastructure and services.
- Policy C 1.7** Encourage and support the development of projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle lanes and paths, and mixed-use community centers.
- Policy C 1.8** Ensure that all development applications comply with the California Complete Streets Act of 2008 as set forth in California Government Code Sections 65040.2 and 65302.
- Policy C 2.2** Require that new development prepare a traffic impact analysis as warranted by the Riverside County Traffic Impact Analysis Preparation Guidelines or as approved by the Director of Transportation. Apply level of service targets to new development per the Riverside County Traffic Impact Analysis Preparation Guidelines to evaluate traffic impacts and identify appropriate mitigation measures for new development.
- Policy C 2.3** Traffic studies prepared for development entitlements (tracts, public use permits, conditional use permits, etc.) shall identify project related traffic impacts and determine the significance of such impacts in compliance with CEQA [California Environmental Quality Act] and the Riverside County Congestion Management Program Requirements.
- Policy C 2.4** The direct project related traffic impacts of new development proposals shall be mitigated via conditions of approval requiring the construction of any improvements identified as necessary to meet level of service targets.

- Policy C 2.5** The cumulative and indirect traffic impacts of development may be mitigated through the payment of various impact mitigation fees such as County of Riverside Development Impact Fees, Road and Bridge Benefit District Fees, and Transportation Uniform Mitigation Fees to the extent that these programs provide funding for the improvement of facilities impacted by development.
- Policy C 3.2** Maintain the existing transportation network, while providing for future expansion and improvement based on travel demand, and the development of alternative travel modes.
- Policy C 3.4** Allow roundabouts or other innovative design solutions such as triple left turn lanes, continuous flow intersections, or other capacity improvements, when a thorough traffic impact assessment has been conducted demonstrating that such an intersection design alternative would manage traffic flow, and improve safety, if it is physically and economically feasible.
- Policy C 3.6** Require private developers to be primarily responsible for the improvement of streets and highways that serve as access to developing commercial, industrial, and residential areas. These may include road construction or widening, installation of turning lanes and traffic signals, and the improvement of any drainage facility or other auxiliary facility necessary for the safe and efficient movement of traffic or the protection of road facilities.
- Policy C 3.7** Design interior collector street systems for commercial and industrial subdivisions to accommodate the movement of heavy trucks.
- Policy C 3.9** Design off-street loading facilities for all new commercial and industrial developments so that they do not face surrounding roadways or residential neighborhoods. Truck backing and maneuvering to access loading areas shall not be permitted on the public road system, except when specifically permitted by the Transportation Department.
- Policy C 3.10** Require private and public land developments to provide all on-site auxiliary facility improvements necessary to mitigate any development-generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation system and its auxiliary facilities. The Transportation Department may require developers and/or subdividers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.
- Policy C 3.11** Generally locate commercial and industrial land uses so that they take driveway access from General Plan roadways with a classification of Secondary Highway or greater, consistent with design criteria limiting the number of such commercial access points and encouraging shared access. Exceptions to the requirement for access to a Secondary Highway or greater would be considered for isolated convenience commercial uses, such as standalone convenience stores or gas stations at an isolated off ramp in a

remote area. Industrial park type developments may be provided individual parcel access via an internal network of Industrial Collector streets.

- Policy C 3.13** Design street intersections, where appropriate, to assure the safe, efficient passage of through traffic and the negotiation of turning movements.
- Policy C 3.14** Design curves and grades to permit safe movement of vehicular traffic at the road's design speed. Design speed should be consistent with and complement the character of the adjacent area.
- Policy C 3.15** Provide adequate sight distances for safe vehicular movement at a road's design speed and at all intersections.
- Policy C 3.16** Dedicate necessary rights-of-way as part of the land division and land use review processes.
- Policy C 3.24** Provide a street network with quick and efficient routes for emergency vehicles, meeting necessary street widths, turn-around radius, secondary access, and other factors as determined by the Transportation Department in consultation with the Fire Department and other emergency service providers.
- Policy C 3.28** Reduce transportation noise through proper roadway design and coordination of truck and vehicle routing.
- Policy C 3.29** Include noise mitigation measures in the design of new roadway projects in the County of Riverside.
- Policy C 4.1** Provide facilities for the safe movement of pedestrians within developments, as specified in the Riverside County Ordinances Regulating the Division of Land of the County of Riverside.
- Policy C 4.2** Maximize visibility and access for pedestrians and encourage the removal of barriers (walls, easements, and fences) for safe and convenient movement of pedestrians. Special emphasis should be placed on the needs of disabled persons considering Americans with Disabilities Act (ADA) regulations.
- Policy C 4.6** Consult the Riverside County Transportation Department as part of the development review process regarding any development proposals where pedestrian facilities may be warranted. The County of Riverside may require both the dedication and improvement of the pedestrian facilities as a condition of development approval.
- Policy C 4.7** Make reasonable accommodation for safe pedestrian walkways that comply with the Americans with Disabilities Act (ADA) requirements within commercial, office, industrial, mixed use, residential, and recreational developments.
- Policy C 5.3** Require parking areas of all commercial and industrial land uses that abut residential areas to be buffered and shielded by adequate landscaping.

Policy C 6.1	Provide dedicated and recorded public access to all parcels of land, except as provided for under the statutes of the State of California.
Policy C 6.2	Require all-weather access to all new development.
Policy C 6.3	Limit access points and intersections of streets and highways based upon the road’s General Plan classification and function. Require that access points be located so that they comply with Riverside County’s minimum intersection spacing standards. Under special circumstances the Transportation Department may consider exceptions to this requirement.
Policy C 6.7	Require that the automobile and truck access of commercial and industrial land uses abutting residential parcels be located at the maximum practical distance from the nearest residential parcels to minimize noise impacts.
Policy C 8.2	Distribute the costs of transportation system improvements equitably among those who will benefit.
Policy C 8.3	Use annexations, development agreements, revenue-sharing agreements, tax allocation agreements and the CEQA process as tools to ensure that new development pays a fair share of costs to provide local and regional transportation improvements and to mitigate cumulative traffic impacts.
Policy C 21.4	Construct and improve traffic signals at appropriate intersections. Whenever possible, traffic signals should be spaced and operated as part of coordinated systems to optimize traffic operation and reduce congestion.
Policy C 21.5	Consider roadway expansion at public expense to relieve congestion only after the determination has been made that TSM [Transportation System Management] measures will not be effective.
Policy C 21.6	Install special turning lanes whenever necessary to relieve congestion and improve safety.

City of Murrieta General Plan

The City’s General Plan Circulation Element represents the City’s overall transportation plan to accommodate the movement of people and goods within and through the City. It establishes goals and policies to achieve a balanced transportation system that adequately serves the growth and development anticipated in the Land Use Element. The transportation plan consists not only of the physical transportation system itself, such as streets, highways, bicycle routes, trails, and sidewalks, but also the various modes of transportation, such as cars, rail, buses, trucks (goods movement), bicycles, and walking. The Circulation Element acknowledges the heavy use of the road and highway system by single-occupant automobiles, and promotes efforts to provide additional transportation choices and to use the system more efficiently through increased transit use, carpooling, walking, and bicycling. The City’s circulation system contributes to the form and character of the community by providing connections between neighborhoods and commercial corridors, an enhanced network of sidewalks and trails that take advantage of the natural environment and recreational opportunities, and a pedestrian-friendly streetscape environment that encourages people to walk (City of Murrieta 2011b).

The Circulation Element establishes minimum LOS standards for streets and intersections within the City. The City's current LOS standard for intersections is LOS D for peak hour intersection operations and LOS E at freeway interchanges. An intersection is considered significantly impacted under the following circumstances:

- If the existing traffic conditions exceed the General Plan target LOS
- If project traffic, when added to existing traffic, will deteriorate the LOS to below the target LOS, and impacts cannot be mitigated through project conditions of approval
- If cumulative traffic exceeds the target LOS, and impacts cannot be mitigated through existing infrastructure funding mechanisms

The City's current LOS standard for roadway segments is LOS C. As an exception, LOS D may be allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the proposed site and study roadways. It should be noted that the City Council can also approve a project that would not meet minimum LOS standards if it determines that the project has overriding benefits.

The following Circulation Element policies may be applicable to the project (City of Murrieta 2011b):

- | | |
|------------------------|---|
| Policy CIR-1.2 | Maintain a Level of Service "D" or better at all intersections during peak hours. Maintain a Level of Service "E" or better at freeway interchanges during peak hours. |
| Policy CIR-1.3 | Maintain an average daily traffic (ADT) Level of Service "C" or better for all roadway segments. As an exception, LOS "D" may be allowed in the North Murrieta Business Corridor, Clinton Keith/Mitchell, Golden Triangle North (Central Murrieta), South Murrieta Business Corridor, or the Multiple Use 3 Focus Areas, or other employment centers. LOS "D" may be allowed only at intersections of any combination of Secondary roadways, Major roadways, Urban Arterial roadways, Expressways, conventional state highways, or freeway ramps. |
| Policy CIR-1.4 | Continue to improve signal coordination and advanced traffic management systems at major intersections and along roadway corridors in order to optimize traffic flow through the City and reduce traffic queuing. |
| Policy CIR-1.5 | Maintain a set of street standards and require that all new road facilities be constructed or upgraded, where feasible, to meet City standards. |
| Policy CIR-1.6 | Coordinate with Caltrans to implement necessary improvements at intersections where the agencies have joint jurisdiction. |
| Policy CIR-1.8 | Identify and evaluate the major intersections requiring special design treatment to increase their vehicular capacity. |
| Policy CIR-1.11 | Support the implementation of complete streets through a multi-modal transportation network that balances the needs of pedestrians, bicyclists, transit riders, mobility-challenged persons, older people, children, and vehicles while providing sufficient mobility and abundant access options for existing and future users of the street system. |

Policy CIR-2.8	Encourage driveway consolidation and the use of shared driveways in commercial areas.
Policy CIR-2.9	Ensure new roadways and intersections provide adequate sight distances for safe vehicular movement.
Policy CIR-2.14	Ensure that efficient and safe access for emergency vehicles is provided to all development.
Policy CIR-5.14	Encourage new large residential, commercial, or employment developments to locate on existing and planned transit routes.
Policy CIR-7.1	Encourage future developments to provide an internal system of sidewalks/pathways linking schools, shopping centers, and other public facilities with residences.
Policy CIR-8.3	Consider roadway design guidelines for new development and for capital improvement plans that enhance bicycle and pedestrian connectivity and safety.
Policy CIR-8.8	When different uses are developed adjacent to each other – such as new commercial adjacent to new residential – require them to provide high-quality pedestrian amenities and connections between each other to the greatest degree possible.

As indicated in General Plan Policy CIR-1.4, as part of its regulatory functions, the City routinely implements signal coordination and signal timing optimization in order to respond to traffic pattern changes and optimize traffic flow and queuing along major roadways in the City, including Clinton Keith Road.

4.13.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to traffic and circulation are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to traffic and circulation would occur if the project would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).2
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

² Threshold question 2 has been analyzed in this EIR for informational purposes only, since the new significance criteria with regard to CEQA Guidelines Section 15064.3(b) have not been adopted by the City of Murrieta nor the County of Riverside. This threshold is not required until new significance criteria have been adopted or July 1, 2020, whichever is sooner.

City of Murrieta Significance Criteria

The City’s General Plan Circulation Element establishes minimum LOS standards for streets and intersections within the City. The City’s current LOS standard for intersections is LOS D for peak hour intersection operations and LOS E at freeway interchanges. The City’s current LOS standard for roadway segments is LOS C. As an exception, LOS D may be allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the project site and study area roadways.

The following traffic impacts are considered “significant” under CEQA based on the City’s Traffic Impact Analysis Preparation Guide³:

- If existing traffic conditions exceed the General Plan target LOS.
- If project traffic, when added to existing traffic, will deteriorate the LOS to below the target LOS, and impacts cannot be mitigated through project conditions of approval.
- If cumulative traffic exceeds the target LOS, and impacts cannot be mitigated through existing infrastructure funding mechanisms.

Given intersection queuing influence on traffic operations, a queuing deficiency is identified in the no-project condition if the calculated 95th-percentile queue length exceeds the storage length by more than 25 feet (the average storage length for one additional vehicle) since an additional vehicle can be stored within the transition taper without impacting traffic flow. Similarly, a significant queuing impact is determined if the project causes the calculated 95th-percentile queue length to exceed the existing or planned storage capacity at a signalized intersection by more than 25 feet. For storage lanes that are already deficient without the project, a significant queuing impact is determined if the project increases the calculated 95th-percentile queue length by more than 25 feet. Where left turn lanes connect to two-way left turn lanes, although the calculated queue may exceed the length of the painted left turn pocket, the presence of the two-way left turn lane provides additional storage and allows the queue to avoid spilling into through lanes. Therefore, queues exceeding the painted storage length in these situations are not highlighted as existing deficiencies because they do not contribute to operational problems.

Riverside County Significance Criteria

Per the County of Riverside General Plan (Riverside County 2015):

Policy C 2.1

The following minimum target levels of service have been designated for the review of development proposals in the unincorporated areas of Riverside County with respect to transportation impacts on roadways designated in the Riverside County Circulation Plan which are currently County maintained, or are intended to be accepted into the County maintained roadway system:

LOS C shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

³ The City Council can approve development projects if target LOS is not met, if the project has overriding benefits.

LOS D shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

LOS E may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.

Based on the criteria above, the LOS service standard in the study area is LOS D.

Riverside County does not have established requirements or standards for queuing analysis and does not require said analysis for CEQA compliance. Supplemental queuing analysis for intersections in the County was provided for information purposes only and is not part of the CEQA significance criteria for impact evaluation.

The County of Riverside significance criteria was applied to assess impacts at various intersections in the City of Wildomar. The City of Wildomar defines intersection performance standards consistent with those in the County of Riverside General Plan Circulation Element. Therefore, Riverside County criteria was applied at the following intersections outside the City of Murrieta:

- George Avenue and Clinton Keith Road (Elsinore Area Plan)
- Inland Valley Drive and Clinton Keith Road (Elsinore Area Plan)
- Salida Del Sol and Clinton Keith Road (Elsinore Area Plan)
- Elizabeth Lane and Clinton Keith Road (Elsinore Area Plan)
- Smith Ranch Road and Clinton Keith Road (Elsinore Area Plan)
- Max Gillis Boulevard/Briggs Road and Leon Road (Southwest Area Plan)
- Max Gillis Boulevard/Thompson Road and SR-79 (Southwest Area Plan)

Caltrans Significance Criteria

Per the Guide for the Preparation of Traffic Impact Studies (December 2002), Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D (see Appendix C-3 of the Guide for the Preparation of Traffic Impact Studies) on state highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing state highway facility is operating at less than the appropriate target LOS, the existing measures of effectiveness should be maintained. In accordance with the I-215 Transportation Concept Report (Caltrans 2012), acceptable LOS for the project study area is LOS D.

Vehicle Miles Traveled Significance Criteria

Project Impacts

Section 15064.3(b)(1) of the CEQA Guidelines provides that for land use projects:

VMT traveled exceeding an applicable threshold of significance may indicate a significant impact.

Generally, projects within one-half mile of either an existing major transit stop or a stop along an

existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

In December 2018, the Governor’s Office of Planning and Research for the State of California issued a Technical Advisory on Evaluating Transportation Impacts in CEQA (“OPR Technical Advisory”). For retail projects, the OPR Technical Advisory recommended that “[g]enerally, lead agencies should analyze the effects of a retail project by assessing the change in total VMT because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns.”⁴ The OPR Technical Advisory indicates:

“[b]ecause new retail development typically redistributes shopping trips rather than creating new trips, estimating the total change in VMT (i.e., the difference in total VMT in the area affected with and without the project) is the best way to analyze a retail project’s transportation impacts. By adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact. Regional-serving retail development, on the other hand, which can lead to substitution of longer trips for shorter ones, may tend to have a significant impact. Where such development decreases VMT, lead agencies should consider the impact to be less-than-significant.”⁵

The Western Riverside County COG (“WRCOG”) also recommends that retail land uses be screened based on whether the project is local serving, which could be based on size (e.g., less than 50,000 square feet).⁶ The WRCOG Analysis recommends several options for VMT analysis. However, these options have not been evaluated or adopted by the City. In addition, the WRCOG analysis states that a project would have a significant impact with respect to VMT if it is inconsistent with the applicable regional transportation plan/sustainable communities strategy (RTP/SCS).

Cumulative Impacts

With respect to cumulative impacts, the WRCOG analysis concludes that “[u]nder cumulative conditions . . . a significant impact would occur if the project increased the jurisdiction’s total daily VMT per service population above the baseline level (or locally adopted threshold) [or if] . . . the project is inconsistent with the applicable regional transportation plan/sustainable communities strategy (RTP/SCS). Inconsistencies could include increasing land supply beyond areas designated for growth in the RTP/SCS, proposing land use densities and intensities below those identified in the RTP/SCS for the project site, or other actions that would result in higher levels of VMT growth compared to the cumulative no project scenario.”⁷

City Threshold

Consistent with CEQA and the CEQA Guidelines, as of the date of circulation of this Draft EIR, the City of Murrieta retains a level of service significance criteria for evaluation of transportation impacts and has not adopted VMT thresholds of significance. Nonetheless, for informational purposes only, the lead agency is providing an evaluation of VMT impacts of the proposed project. For purposes of this informational analysis, the OPR Technical Advisory recommendation for retail

⁴ OPR Technical Advisory, page 5.

⁵ OPR Technical Advisory, p. 16. at p. 44.

⁶ See WRCOG SB 743 Implementation Pathway Document Package, Fehr & Peers, March 2019 (“WRCOG Analysis”) <https://www.fehrandpeers.com/wp-content/uploads/2019/12/WRCOG-SB743-Documents-Package.pdf>

⁷ WRCOG Analysis at p. 56.

projects is utilized in this DEIR as a threshold of significance. Accordingly, the proposed project would have a significant impact with respect to VMT if: (a) it is a retail project of greater than 50,000 square feet and (b) results in a net increase in VMT above existing conditions during operation. In addition, the project would have a significant impact with respect to transportation if it is inconsistent with the applicable regional transportation plan/sustainable communities strategy (RTP/SCS). With respect to cumulative impacts, a project could have a significant cumulative impact on VMT if the project has a significant project-level impact as determined above or is not consistent with the 2016-2040 RTP/SCS in terms of development location, density, and intensity.

4.13.4 Impacts Analysis

Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Significant and Unavoidable Impact. The project site is located in the City, north of Clinton Keith Road and east of vacated Antelope Road, immediately northeast of the intersection of I-215 and Clinton Keith Road. The project is expected to be completed by 2021. As shown in Figure 3-2, Site Plan, primary access to the site would be provided from Clinton Keith Road and the new north/south roadway, Warm Springs Parkway. Access to the Costco warehouse and gas station would be provided through two driveways along the perimeter of the project site (Project Driveways C and D) and may include a third access from Clinton Keith Road via a single left turn lane onto Creighton Avenue, which would lead to the project site at Creighton Avenue. The main entrance to the Costco would be located along Warm Springs Parkway on the central portion of the site at Project Driveway C. The main entrance to the Vineyard II development would be through the proposed signalized intersection at Warm Springs Parkway (Project Driveway C), with secondary entrances located on the southern (Project Driveway B) and northern (Project Driveway D) end of Warm Springs Parkway. If access is provided across private property, an alternative access to the Costco portion of the project site would be available from Clinton Keith Road via an existing single left turn lane onto Creighton Avenue, which would lead to the project site.

Project implementation would include construction of Warm Springs Parkway with four vehicle travel lanes (plus turn lanes at intersections) from Clinton Keith Road to the north project boundary. Warm Springs Parkway would be designed to provide bike lanes and sidewalks. The roadway would be stubbed at the north site boundary for future extension.

At the intersection of High School West Driveway/Warm Springs Parkway and Clinton Keith Road, the design would consist of installing a traffic signal and providing the following in addition to the existing lanes:

- Dual northbound left turn lanes;
- A northbound through lane;
- Dual southbound left turn lanes;
- A southbound through lane;
- Dual southbound right turn lanes ;
- A westbound right turn lane; and
- Dual eastbound left turn lanes.

A right-in/right-out access would be provided at the southern access driveway (Warm Springs Parkway/Project Driveway A) with two northbound through lanes, a northbound right turn lane, four southbound through lanes

(feeding the southbound approach at Clinton Keith Road), a southbound shared through/right turn lane, an eastbound right turn lane, and a westbound right turn lane.

A right-in/right-out access to serve the Vineyard II development (Warm Springs Parkway/Project Driveway B) would be provided with three northbound through lanes, a northbound through/right turn lane, two southbound through lanes, and a westbound right turn lane.

A traffic signal would be provided at the main Costco access driveway at Warm Springs Road and Project Driveway C. The traffic signal would have the following:

- Dual northbound left turn lanes with 250 feet of storage for each lane;
- Northbound through lane and shared through/right turn lane;
- Dual southbound left turn lanes with 200 feet of storage for each lane;
- Two southbound through lanes;
- Southbound right turn lane with 100 feet of storage;
- Westbound exclusive left turn, through, and right turn lanes; and
- Two eastbound exiting lanes, one shared through/left turn lane and an exclusive right turn lane.

A full-movement access driveway at the north Costco access (Warm Springs Parkway/Project Driveway D) would be provided in the near term, with a northbound shared left turn through lane, one northbound through lane, a northbound right turn lane, a southbound shared left turn/through lane, one southbound through lane, a southbound right turn lane, an eastbound shared left/through/right turn lane, and a westbound shared left/through/right turn lane. The access will be limited to right-in/right-out when Warm Springs Parkway is extended further north.

In addition to these main access points, the site would be accessible from Antelope Road, including delivery truck access at the northwest corner of the site from Antelope Road to the truck loading bays behind Costco. Delivery trucks for the Vineyard II retail would access stores through Project Driveways B and D.

The following improvements to transportation network around the project site would also be implemented in conjunction with other development projects, including at the intersections of Creighton Avenue and Clinton Keith Road and Bronco Way and Clinton Keith Road:

- A north leg at the intersection of Creighton Avenue and Clinton Keith Road, including an exclusive eastbound left turn, westbound right turn, exclusive southbound left turn, and shared southbound through/right turn lane would be provided. If the Vineyard III project is approved and reaches more than 13,000 square feet of retail development, that project would be conditioned to add the second northbound left turn lane. Until that time, access to Costco would be restricted from Creighton Avenue.
- A north leg at the intersection of Bronco Way and Clinton Keith Road, including an exclusive eastbound left turn, westbound right turn, exclusive southbound left turn, shared southbound through/right turn lane, and northbound through lane.

As previously discussed, the City's General Plan sets minimum LOS standards for roadways and intersections in the City. The minimum LOS standards for intersections, freeway interchanges, and roadway segments are shown in Table 4.13-12.

Table 4.13-12. Minimum Level of Service Standards

Facility Type	Minimum LOS
Intersections	LOS D
Freeway interchanges	LOS E
Roadway segments	LOS C ¹

Source: Appendix I.

Notes: LOS = level of service.

¹ As an exception, LOS D may be allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the proposed site and study roadways.

A TIA was prepared to evaluate the traffic impacts associated with the project. Per the City's Traffic Impact Analysis Preparation Guide, the TIA analyzed the following conditions:

- Existing Traffic – This scenario is based on traffic counts collected in late 2017 and updated in 2018 and has been included in Section 4.13.1, Existing Conditions.
- Project Completion (Existing + Ambient Growth + Project) – This scenario is based on existing volumes, background growth, and traffic associated with the project. The project is expected to be complete in year 2021, so 3 years of background growth were assumed. This scenario serves as the basis for determining project-specific impacts, mitigation, and conditions of approval.
- Cumulative (Existing + Ambient Growth + Project + Cumulative) – This scenario includes other approved projects in the study area expected to be built out by year 2021. This scenario is used to determine whether funded improvements can accommodate the cumulative traffic at the target LOS identified in the City's General Plan.
- 2035 General Plan Build-Out Conditions (For informational purposes only) – The 2035 scenario was evaluated for information purposes for a portion of the study area based on the request from the City and Caltrans. This scenario assesses 2035 operations and roadway sizing for Warm Springs Parkway and at the I-215 interchange. Because the project does not propose a zone change, a long-range analysis is not required per the City's Traffic Impact Analysis Preparation Guide or for CEQA. The analysis below was conducted for the weekday PM peak hour to ensure that adequate capacity was provided along Warm Springs Parkway and for information requested by Caltrans. Signal timing was assumed to be coordinated along Clinton Keith Road and was optimized based on projected volumes. In addition, roadway segment analysis is provided per the direction of City staff and evaluation of the freeway corridor is provided per direction from Caltrans staff. Project access on Creighton Avenue was assumed for this analysis.

A project-specific impact would occur if the project-related traffic causes an intersection, freeway interchange, or roadway segment to become deficient or worsens an already deficient road facility under 2021 Project Completion Conditions (Existing Conditions plus Ambient Growth plus Project conditions). A cumulative impact would occur under the same circumstances but with the addition of cumulative traffic as analyzed under the 2021 Cumulative Conditions (Existing Conditions plus Ambient Growth plus Project Conditions plus Cumulative Traffic Conditions) and the 2035 Build-Out scenarios.

Project Trip Generation

Table 4.13-13 presents trip generation estimates for the proposed Costco and gas station and Vineyard II retail development. The analysis is conservative because adjustments for transportation demand management or other reductions were not made, and diverted trips are not included in Table 4.13-13 because these trips are expected

to come from I-215 and are counted as new trips at the study intersections for the purposes of this project’s traffic analysis. However, it should be noted that the diverted trips do not create similar system capacity or environmental impacts to the regional system because these are not new trips.

The trip generation for the Costco warehouse and gas station is based on Costco-specific data collected at locations throughout California. The data includes information about pass-by trips, which are existing trips that are on roadways adjacent to the site that stop at the Costco development and then continue on to their ultimate destination when their shopping is concluded. The number of trips expected to be generated by Vineyard II were estimated using rates in Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers. The Shopping Center land-use (ITE Code 820) was used, since this use accounts for “an integrated group of commercial establishments,” as is proposed for the site. The pass-by rate applied for the shopping center is based on ITE data as well.

Table 4.13-13. Project Trip Generation

Land Use (size)/Trip Type	Weekday Daily	Weekday PM Peak Hour			Saturday Middy Peak Hour		
		Total	In	Out	Total	In	Out
Costco Warehouse with Fuel Center (153,362 square feet)	12,560	1,107	537	570	1,518	773	745
<i>Pass-By Trips (33.3% Weekday PM, 29.0% Sat Mid)¹</i>	<i>-4,182²</i>	<i>-368</i>	<i>-184</i>	<i>-184</i>	<i>-440</i>	<i>-220</i>	<i>-220</i>
Net New Costco Trips	8,378²	739	353	386	1,078	553	525
Vineyard II (Institute of Transportation Engineers Code 820; 79,900 square feet)	5,870	515	247	268	756	393	363
<i>Pass-By Trips (25.0%)</i>	<i>-1,468</i>	<i>-128</i>	<i>-64</i>	<i>-64</i>	<i>-188</i>	<i>-94</i>	<i>-94</i>
Net New Vineyard II Trips	4,402	387	183	204	568	299	269

Source: Appendix I.

Notes:

- 1 Although not accounted for in the trip generation for the traffic study, it is expected that 31.5% of weekday PM and 20.7% of Saturday midday peak hour trips to/from Costco will be diverted trips.
- 2 The number of weekday daily primary and pass-by trips were estimated using weekday PM peak hour trip type percentages.

Adjustments for transportation demand management (TDM) or other reductions are not made in the travel demand estimates. In addition, diverted trips are not included in the estimates, since these trips are expected to come from I-215 and would function as new trips at many of the study area intersections. However, these trips would not create similar system capacity or environmental impacts to the regional system, since they are not new trips.

Project Trip Distribution and Assignment

Trip distribution and assignment for the proposed Costco is based on Costco membership data and review of existing travel patterns in the study area.⁸ The trip distribution for the Vineyard II site matches the pattern used in the Vineyard Shopping Center Traffic Impact Analysis (Trames Solutions Inc. 2016). The same trip distribution patterns were used for the weekday PM peak hour and Saturday midday peak hour. The trip distribution patterns were provided in the scoping memorandum approved by the City. Figure 4.13-4 presents the Costco project trip

⁸ Trip patterns for Costco took into consideration that the Costco in the City of Temecula would attract many of the residents who live south of the proposed site. Trip patterns also took into consideration the new travel patterns with the Clinton Keith Road extension, providing an east-west connection to Winchester Road and the extension of Whitewood Road to Scott Road.

distribution patterns for the weekday PM and Saturday midday peak hours. Figures 4.13-5 and 4.13-6 illustrate the Costco trip distribution at the site access points with and without Creighton Avenue access. Figure 4.13-7 presents the Vineyard II project trip distribution patterns for the weekday PM and Saturday midday peak hours. Figure 4.13-8 illustrates the Vineyard II trip distribution at the site accesses points. Figures 4.13-9 through 4.13-12 present the total project trip assignment within the study area during the weekday PM and Saturday midday peak hours with and without Creighton Avenue access, respectively.

Year 2021 Project Completion Conditions

Traffic volumes for year 2021 conditions reflect expected conditions in the year 2021 with 2% ambient growth rate per year of existing traffic, and the addition of project trips. Figures 4.13-13 through 4.13-16 show the projected traffic volumes at the key study area locations for weekday PM peak hour and Saturday midday peak hour with and without Creighton Avenue access, respectively.

Year 2021 Traffic Controls and Intersection Geometries

The following infrastructure changes are anticipated to be in place when the proposed project opens and were accounted for in the project trip assignment:

- Development of Warm Springs Parkway from Clinton Keith Road to the north edge of the project boundary. The intersection of High School West Driveway/Warm Springs Parkway and Clinton Keith Road would align with the existing high school driveway on the south side of Warm Springs Parkway and be signalized. A signal would be provided on Warm Springs Parkway to serve Costco and the Vineyard retail center to the east. In addition, right-in/right-out access driveways are proposed along Warm Springs Parkway, as illustrated in Figure 3-2, Proposed Site Plan, in Chapter 3.
- Provision of a north leg at the intersections of Creighton Avenue/Clinton Keith Road and Bronco Way/Clinton Keith Road.
- Widening of Clinton Keith Road from the eastern Wildomar city limit to Inland Valley Drive (it is already two lanes in each direction from Inland Valley Drive to Arya Road) to provide two eastbound vehicle lanes and two westbound vehicle lanes. This project was recently completed.

In addition, Project Driveway C would operate with the geometric configuration assumed in this study until Warm Springs Parkway is extended north. At that time, its configuration could be reassessed.

Year 2021 Project Completion Traffic Analysis

Intersections

Analyses of intersection operations at the study intersections and queues were assessed under year 2021 conditions. Per the City's direction, signal timing was adjusted to reflect coordination on Clinton Keith Road for future conditions. Table 4.13-14 shows the project completion delays and LOS for the study intersections during weekday PM and Saturday midday peak hours.

Table 4.13-14. Year 2021 Project Completion Intersection Level of Service Analysis – with Creighton Avenue Access

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
1	I-15 SB Ramps and Clinton Keith Road	Signal	24.9	C	18.1	B
2	I-15 NB Ramps and Clinton Keith Road	Signal	27.8	C	20.9	C
3	George Avenue and Clinton Keith Road	Signal	24.7	C	18.0	B
4	Inland Valley Drive and Clinton Keith Road	Signal	20.5	C	9.1	A
5	Salida Del Sol and Clinton Keith Road	TWSC ¹	37.1 (SBL/R)	E	21.7 (SBL/R)	C
6	Elizabeth Lane and Clinton Keith Road	TWSC ¹	70.8 (NBL/T/R)	F	24.1 (NBL/T/R)	C
7	Smith Ranch Road and Clinton Keith Road	Signal	13.2	B	13.9	B
8	Nutmeg St and Clinton Keith Rd	Signal	39.8	D	20.6	C
9	California Oaks Rd and Clinton Keith Rd	Signal	54.4	E	25.4	C
10	Greer Rd/Murrieta Ave and Clinton Keith Rd	Signal	21.9	C	18.9	B
11	Mitchell Rd/Murrieta Oaks Ave and Clinton Keith Rd	Signal	38.5	D	25.9	C
12	Clinton Keith Rd and McElwain Rd	Signal	29.9	C	20.2	C
13	I-215 SB Ramps and Clinton Keith Rd	Signal	13.6	B	11.3	B
14	I-215 NB Ramps and Clinton Keith Rd	Signal	14.5	B	15.1	B
15	Creighton Ave and Clinton Keith Rd	Signal	16.9	B	9.1	A
16	High School West Dwy/Warm Springs Rd and Clinton Keith Rd	Signal	24.3	C	41.7	D
17	Bronco Way and Clinton Keith Rd	Signal	48.4	D	11.8	B
18	Whitewood Rd and Clinton Keith Rd	Signal	54.8	D	34.6	C
19	Whitewood Rd and Linnel Ln/Lee Ln	Signal	13.3	B	14.5	B
20	Whitewood Rd and Baxter Rd	Signal	19.4	B	14.1	B
21	Whitewood Rd and Keller Rd	Signal	15.3	B	13.3	B
22	Max Gillis Blvd/Briggs Rd and Leon Rd	Signal	47.8	D	43.0	D
23	Max Gillis Blvd/Thompson Rd and SR-79	Signal	77.1	E	77.4	E
A	Warm Springs Rd/Project Driveway A	TWSC ¹	NA	NA	NA	NA
B	Warm Springs Rd/Project Driveway B	TWSC ¹	NA	NA	NA	NA
C	Warm Springs Rd/Project Driveway C	Signal	12.0	B	18.6	B
D	Warm Springs Rd/Project Driveway D	TWSC	7.5 (NBL)	A	7.6 (NBL)	A

Source: Appendix I.

Notes: sec = seconds; LOS = level of service; I = Interstate; SB = southbound; NB = northbound; L = left; R = right; T= Through; HS = high school; SR = State Route; TWSC = two-way stop controlled; NA = not applicable.

TWSC: Two-way stop control - delay reported reflects the critical movement, shown in parentheses.

¹ No east/west turning movements are forecast at this intersection so delay cannot be estimated.

Boldface type indicates locations performing at LOS that does not meet standards.

As shown in Table 4.13-14, all intersections are projected to operate with an acceptable LOS in 2021 except for the following:

- Salida Del Sol and Clinton Keith Road: With the additional through lanes on Clinton Keith Road as part of the widening of Clinton Keith Road from the eastern Wildomar city limit to Inland Valley Drive, which recently completed construction, the LOS for the southbound approach to the intersection is projected to improve from LOS F under existing conditions to LOS E under 2021 Project Completion Conditions during the weekday PM peak hour.
- Elizabeth Lane and Clinton Keith Road: As in existing conditions, the northbound approach to the intersection is projected to operate at LOS F during the weekday PM peak hour.
- California Oaks Road and Clinton Keith Road: The intersection is projected to operate at LOS E during the weekday PM peak hour.
- Max Gillis Boulevard/Thompson Road and SR-79: As in existing conditions, this signalized intersection is projected to operate at LOS F during the weekday PM peak hour and LOS E during the Saturday midday peak hour.

Without Creighton Avenue Access

In the event that the northern leg of Creighton Avenue and signal are not constructed when the project site is developed, the access locations on Warm Springs Parkway are sufficient to serve the site. Trips that were assumed to use Creighton Avenue would instead utilize Warm Springs Parkway and the signalized access (Project Driveway C) or stop-controlled northern access (Project Driveway D). The alternative access plan would affect operations at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road intersection as well as at the Project Driveways along Warm Springs Parkway. As shown in Table 4.13-15 below, all affected intersections continue to operate at an acceptable LOS.

Table 4.13-15. Year 2021 Project Completion Intersection Level of Service Analysis – without Creighton Avenue Access

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
15	Creighton Ave and Clinton Keith Rd	Signal	2.4	A	2.8	A
16	High School West Dwy/Warm Springs Rd and Clinton Keith Rd	Signal	33.3	C	53.7	D
A	Warm Springs Rd/Project Driveway A	TWSC ¹	NA	NA	NA	NA
B	Warm Springs Rd/Project Driveway B	TWSC ¹	NA	NA	NA	NA
C	Warm Springs Rd/Project Driveway C	Signal	12.5	B	20.5	C
D	Warm Springs Rd/Project Driveway D	TWSC	7.5 (NBL)	A	7.6 (NBL)	A

Source: Appendix I.

Notes: sec = seconds; LOS = level of service; TWSC = two-way stop controlled; NA = not applicable; NBL = northbound left. TWSC: Two-way stop control - delay reported reflects the critical movement, shown in parentheses.

¹ No east/west turning movements are forecast at this intersection so delay cannot be estimated.

As shown in Table 4.13-15, all intersections without Creighton access are projected to operate with an acceptable LOS in 2021.

Queuing Analysis

Per the request of the City, the following queuing analysis was provided in the vicinity of the project site. Table 4.13-16 shows the available queue storage and the 95th percentile queue lengths at the turn lanes for each study intersection with Creighton access.

Table 4.13-16. Year 2021 Project Completion 95th Percentile Queues – with Creighton Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
8	Nutmeg St and Clinton Keith Rd	EBL	125	28 81	13 61	–	–
		WBL	225	246 506	95 274	No ⁵	Yes
		NBL	175	40 89	26 82	–	–
		NBR	360 ²	0 82	0 62	–	–
		SBL	50	77 148	36 106	Yes	Yes
9	California Oaks Rd and Clinton Keith Rd	WBL	220	441 959	239 412	Yes	–
		NBL	100 ⁶	152 279	42 102	Yes	–
		NBR	485 ²	0 135	0 92	–	–
10	Greer Rd/Murrieta Oaks Ave and Clinton Keith Rd	EBL	260	51 130	44 86	–	–
		WBL	150	40 107	46 95	–	–
		WBR	150	17 51	0 0	–	–
		NBL	150	24 55	28 59	–	–
		SBL	150	98 167	132 198	–	Yes
11	Mitchell Road/Murrieta Oaks Ave and Clinton Keith Rd	EBL	150	12 45	15 26	–	–
		WBL	150	150 406	150 297	Yes	Yes
		WBR	160	0 0	0 0	–	–
		NBL	190 ²	19 63	18 51	–	–
		SBL	150	3 14	2 8	–	–
		SBR	150	0 0	0 0	–	–
12	McElwain Rd and Clinton Keith Rd	EBL	200 (x2)	172 230	137 157	–	–
		EBR	100	0 0	0 0	–	–
		WBL	175	22 50	25 51	–	–
		WBR	160	0 55	7 14	–	–
		NBL	50	15 42	11 33	–	–
		SBL	235 (x2)	185 225	226 274	–	–
13	I-215 SB Ramps and Clinton Keith Rd	EBR	385	83 108	125 127	–	–
		WBR	380	95 124	195 161 ⁴	–	–
		SBR	1,100 ¹	295 340	97 135	–	–

Table 4.13-16. Year 2021 Project Completion 95th Percentile Queues – with Creighton Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
14	I-215 NB Ramps and Clinton Keith Rd	NBL/R	960 ¹	435 544	373 443	–	–
		NBR	960 ¹	427 552	331 413	–	–
15	Creighton Ave and Clinton Keith Rd	EBL/U	250	40 62	63 112	–	–
		EBR	250	0 1	0 0	–	–
		WBL/U	235	38 87	6 23	–	–
		WBR	150	0 0	0 0	–	–
		NBL	100	50 98	50 94	–	–
		NBT/R	390 ²	0 0	0 0	–	–
		SBL	230 ²	0 0	0 0	–	–
16	High School West Dwy/ Warm Springs Rd and Clinton Keith Rd	EBL	205 (x2)	321 415	210 535	–	Yes
		WBR	250	0 7	0 50	–	–
		NBL	100	0 0	0 0	–	–
		NBR	390 ²	0 0	0 0	–	–
		SBL	350 (x2)	149 262	142 366	–	–
		SBR	350	0 0	0 0	–	–
17	Bronco Way and Clinton Keith Rd	EBL/U	200	25 44	7 42	–	–
		WBL/U	315	167 320	13 62	–	–
		WBR	85	0 0	0 0	–	–
		NBL	355 ²	57 112	10 44	–	–
		NBT/R	355 ²	0 0	0 0	–	–
		SBL	60 ²	22 54	11 56	–	–
18	Whitewood Rd and Clinton Keith Rd	EBL	250 (x2)	226 423	96 218	–	–
		EBR	250	30 120	0 70	–	–
		WBL	200 (x2)	54 101	34 89	–	–
		WBR	350	0 0	0 0	–	–
		NBL	300	235 477	114 265	Yes	–
		SBL	100	77 178	32 100	Yes	–
19	Whitewood Rd and Linnel Ln	EBL	130	72	54	–	–
		EBR	>500 ²	0 0	0 13	–	–
		NBL	200	14 54	9 51	–	–
		SBL	200	1 7	0 7	–	–

Table 4.13-16. Year 2021 Project Completion 95th Percentile Queues – with Creighton Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
20	Whitewood Rd and Baxter Rd	EBL	215	6 40	1 14	–	–
		EBR	>500 ²	0 55	0 2	–	–
		WBL	125	3 24	2 20	–	–
		NBL	215	66 255	17 113	No ⁵	–
		NBR	>500 ²	0 0	0 0	–	–
		SBL	200	0 7	2 22	–	–
21	Whitewood Rd and Keller Rd	EBL	175	12 83	2 43	–	–
		EBR	545 ¹	0 0	0 0	–	–
		WBL	200	3 29	2 36	–	–
		NBL	225	13 77	3 54	–	–
		SBL	115	3 29	1 20	–	–
C	Warm Springs Rd/Project Driveway C	<i>EBR</i>	155	1 26	38 126	–	–
		<i>WBL</i>	100	60 168	117 279	No ⁴	No ⁴
		<i>NBL</i>	250 (x2)	51 147	100 223	–	–
		<i>SBL</i>	100	0	0	–	–
		<i>SBR</i>	100	0	0	–	–

Source: Appendix I.

Notes: EB = eastbound; L = left; WB = westbound; NB = northbound; R = right; SB = southbound; U = U-turn; I = Interstate.

*Impacts determined using 95th percentile queues. A queuing impact is determined if the project causes the calculated 95th percentile queue length on public streets to exceed the existing or planned storage capacity by more than 25 feet. For storage lanes that are already deficient without the project, a significant queuing impact is determined if the project increases the calculated 95th percentile queue length by more than 25 feet. Average queues provided for information.

Where the table indicates (x2) it means there are two lanes with the indicated feet of storage.

¹ Distance to development of separate turn lanes from highway off-ramp.

² Approximate distance to adjacent intersection.

³ Two-way left turn lanes provides additional storage up to 730 feet.

⁴ Queues onto private property, not on City streets.

⁵ Project contribution to queue is less than 25 feet as compared to existing conditions.

⁶ The City recently completed a project to extend the storage for this left turn lane to 250 feet.

Boldface type indicates the 95th percentile queue exceeds the available storage.

Italic type indicates the movement does not currently exist.

As shown in Table 4.14-16, queues are projected to exceed storage capacity by more than 25 feet (or by more than 25 feet beyond existing conditions for locations that already exceed capacity) under 2021 project conditions for one or more movements at the following study locations:

- Nutmeg Street and Clinton Keith Road (WBL, SBL)
- California Oaks Road and Clinton Keith Road (WBL, NBL)
- Greer Road/Murrieta Oaks Avenue and Clinton Keith Road (SBL)
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road (WBL)

- High School West Driveway/Warm Springs Road and Clinton Keith Road (eastbound lane [EBL])
- Whitewood Road and Clinton Keith Road (NBL, SBL)

The alternative access plan would affect operations at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road intersection as well as the project driveways along Warm Springs Parkway. Table 4.13-17 illustrates the available queue storage, average queue length, and 95th percentile queue length at the turn lanes for each study intersection.

Table 4.13-17. Year 2021 Project Completion 95th Percentile Queues- without Creighton Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
15	Creighton Ave and Clinton Keith Rd	EBL/U	250	7 12	8 21	–	–
		EBR	250	0 2	0 4	–	–
		WBL/U	235	37 79	6 23	–	–
						–	–
		NBL	100	61 114	54 103	–	–
		NBT/R	390	0 0	0 0	–	–
16	High School West Dwy/ Warm Springs Rd and Clinton Keith Rd	<i>EBL</i>	205 (x2)	359 464	232 602	Yes	Yes
		<i>WBR</i>	250	0 7	0 50	–	–
		NBL	100	0 0	0 0	–	–
		NBR	390 ¹	0 0	0 0	–	–
		<i>SBL</i>	350 (x2)	149 262	142 366	–	–
		<i>SBR</i>	350	0 0	0 0	–	–
C	Warm Springs Rd/Project Driveway C	<i>EBR</i>	155	6 39	52 163	–	–
		<i>WBL</i>	100	62 174	122 293	No ²	No ²
		NBL	250 (x2)	56 157	112 244	–	–
		SBL	100	0	0	–	–
		SBR	100	0	0	–	–

Source: Appendix I.

Notes: EB = eastbound; L = left; U = U-turn; R = right; WB = westbound; NB = northbound; T = through; SB = southbound.

*Impacts determined using 95th percentile queues. A queuing impact is determined if the project causes the calculated 95th percentile queue length on public streets to exceed the existing or planned storage capacity by more than 25 feet. For storage lanes that are already deficient without the project, a significant queuing impact is determined if the project increases the calculated 95th percentile queue length by more than 25 feet. Average queues provided for information.

¹ Approximate distance to adjacent intersection.

² Queues onto private property, not on City streets.

Boldface type indicates the 95th percentile queue exceeds the available storage.

Italic type indicates the movement does not currently exist.

As shown in the table, the without Creighton access scenario increases the expected queues at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road intersection, particularly for the eastbound left turn

lane, and results in a new queuing impact for the eastbound left turn during the weekday PM peak (that does not occur within the with Creighton access scenario.

Roadway Segment Analysis

An assessment of ADT was conducted for the following three roadway segments for year 2021 project completion conditions:

- Clinton Keith Road, between I-215 northbound ramps and Warm Springs Parkway
- Whitewood Road, north of Clinton Keith Road
- Warm Springs Parkway, north of Clinton Keith Road

Average daily volumes were developed by assuming the same ratio between peak hour and daily counts observed under existing conditions. This accounts for background growth and the project trips. As shown in Table 4.13-18, all three roadway segments operate within capacity and at an acceptable LOS under year 2021 project completion conditions during both weekday and Saturday peak hours.

Table 4.13-18. Year 2021 Project Completion Average Daily Traffic Analysis – with Creighton Access

Segment	Metric	Weekday	Saturday ¹
Clinton Keith Road, between I-215 northbound ramps and Warm Springs Parkway	Volume (daily)	34,697	32,024
	Capacity (daily, LOS E)	53,900	53,900
	LOS	C	C
	v/c ratio	0.64	0.59
Warm Springs Parkway Road, north of Clinton Keith Road	Volume (daily)	16,586	21,723
	Capacity (daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c ratio	0.49	0.64
Whitewood Road, north of Clinton Keith Road	Volume (daily)	14,609	12,968
	Capacity (daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c ratio	0.43	0.38

Source: Appendix I.

Notes: I = Interstate; LOS = level of service; v/c = vehicle to capacity.

The capacities shown are based on roadway classification and taken from the City’s General Plan for roadways operating at LOS E. The LOS is based on the City’s General Plan maximum two-way ADT volume for each LOS grade. The table provides maximum ADT volumes for LOS C, D, and E. Clinton Keith Road is an urban arterial, Warm Springs Parkway is a major roadway, and Whitewood Road a major roadway.

¹ The Saturday daily trip generation for the development was generated based on applying the ratio between Saturday midday peak hour and Saturday daily trip generation in the manual *Trip Generation, 9th Edition* to the Costco Saturday midday peak hour trips as the Costco database does not contain Saturday daily trip generation.

The resulting v/c ratios on each roadway are shown in Table 4.13-19. As shown in Table 4.13-19, all three roadway segments are projected to operate under capacity and at LOS C under year 2021 Project Completion conditions on both weekdays and Saturdays.

Table 4.13-19. Year 2021 Project Completion Average Daily Traffic Analysis – without Creighton Access

Segment	Metric	Weekday	Saturday ¹
Clinton Keith Road, between I-215 northbound ramps and Warm Springs Parkway	Volume (daily)	35,975	33,770
	Capacity (daily, LOS E)	53,900	53,900
	LOS	C	C
	v/c ratio	0.67	0.71
Warm Springs Parkway Road, north of Clinton Keith Road	Volume (daily)	18,429	24,137
	Capacity (daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c ratio	0.54	0.71
Whitewood Road, north of Clinton Keith Road	Volume (daily)	14,609	12,968
	Capacity (daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c ratio	0.43	0.38

Source: Appendix I.

Notes: I = Interstate; LOS = level of service; v/c = vehicle to capacity.

The capacities shown are based on roadway classification and taken from the City's General Plan for roadways operating at LOS E. The LOS is based on the City's General Plan maximum two-way ADT volume for each LOS grade. The table provides maximum ADT volumes for LOS C, D, and E. Clinton Keith Road is an urban arterial, Warm Springs Parkway is a major roadway, and Whitewood Road a major roadway.

¹ The Saturday daily trip generation for the development was generated based on applying the ratio between Saturday midday peak hour and Saturday daily trip generation in the manual *Trip Generation, 9th Edition* to the Costco Saturday midday peak hour trips as the Costco database does not contain Saturday daily trip generation.

Year 2021 Cumulative Conditions

The cumulative traffic conditions analysis forecasts how the transportation system would operate with existing traffic volumes plus the traffic generated by the project and other approved/proposed projects in the area. The same ambient growth rate (2%) is applied to traffic volumes. The Cities of Murrieta, Menifee and Wildomar provided a list of approved/proposed projects that would affect traffic volumes in the study area under year 2021 conditions (shown in Table 4.13-20).

Table 4.13-20. Trip Generation for Approved/Proposed Projects

ID	Project Name	Weekday PM Peak Hour			Saturday Midday Peak Hour ¹		
		Total	In	Out	Total	In	Out
1	Mitchell Crossing	341	192	149	382	191	191
2	The Orchard ²	300	143	157	385	202	183
3	Vineyard I	531	258	273	775	406	369
4	Makena Hills	607	256	351	671	383	288
5	Adobe Springs	537	244	293	320	171	149
6	Alderwood ³	10	6	4	9	5	4
7	Golden Cities Phase 3	70	44	26	64	35	29
8	Golden Cities Phase 4	127	80	47	117	63	54
9	Golden Cities Phase 5	119	75	44	111	60	51
10	Junction	1,563	757	806	2,044	1,037	1,007
11	Walmart	1,335	677	658	1,350	689	661
12	Vineyard III	456	230	226	430	221	209

Table 4.13-20. Trip Generation for Approved/Proposed Projects

ID	Project Name	Weekday PM Peak Hour			Saturday Midday Peak Hour ¹		
		Total	In	Out	Total	In	Out
13	Clinton Keith Village	307	155	152	395	201	194
Total		6,303	3,117	3,186	7,053	3,664	3,389

Source: Traffic studies and data provided by the City of Murrieta, Menifee, and Wildomar.

Notes:

- The original traffic studies did not include a Saturday midday trip generation. The same approach taken in the original study was utilized to develop a Saturday midday trip generation assessment using the 9th Edition of the Trip Generation Manual (Reference 8).
- The Orchard project includes 436,735 square feet of shopping center development. A portion of the site is already developed, so a total of 215,850 square feet of the shopping center remains to be built. An additional 100,000 SF of development is anticipated by 2020. Therefore, the trips shown are associated with 100,000 square feet of development.
- A traffic study was not conducted for Alderwood so trip generation was assessed based on the development type and unit count.

Figures 4.13-17 through 4.13-20 show the year 2021 cumulative traffic volumes for existing traffic with ambient growth, trips from approved/proposed projects, and project-associated traffic for weekday PM peak hour and Saturday midday peak hour moving traffic volumes with and without Creighton Avenue access, respectively.

Year 2021 Cumulative Traffic Analysis

Intersections

Intersection operations at all study area intersections were assessed under year 2021 conditions with completion of the proposed project plus approved/proposed projects. Table 4.13-21 shows the Year 2021 Cumulative Conditions delays and LOS for the study intersections during weekday PM and Saturday midday peak hours.

Table 4.13-21. Year 2021 Cumulative Conditions Intersection Level of Service Analysis – with Creighton Avenue Access

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
1	I-15 SB Ramps and Clinton Keith Road	Signal	25.8	C	18.8	B
2	I-15 NB Ramps and Clinton Keith Road	Signal	30.0	C	21.0	B
3	George Avenue and Clinton Keith Road	Signal	31.2	C	28.7	C
4	Inland Valley Drive and Clinton Keith Road	Signal	22.2	C	10.0	B
5	Salida Del Sol and Clinton Keith Road	TWSC	52.2 (SBL/R)	F	29.0 (SBL/R)	D
6	Elizabeth Lane and Clinton Keith Road	TWSC	95.4 (NBL/T/R)	F	31.7 (NBL/T/R)	D
7	Smith Ranch Road and Clinton Keith Road	Signal	14.0	B	13.2	B
8	Nutmeg St and Clinton Keith Rd	Signal	52.0	D	25.7	C
9	California Oaks Rd and Clinton Keith Rd	Signal	67.7	E	29.7	C
10	Greer Rd/Murrieta Oaks Ave and Clinton Keith Rd	Signal	35.8	D	22.0	C
11	Mitchell Road/Murrieta Oaks Ave and Clinton Keith Rd	Signal	79.0	E	69.7	E

Table 4.13-21. Year 2021 Cumulative Conditions Intersection Level of Service Analysis – with Creighton Avenue Access

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
12	Clinton Keith Rd and McElwain Rd	Signal	42.8	D	24.8	C
13	I-215 SB Ramps and Clinton Keith Rd	Signal	15.5	B	10.1	B
14	I-215 NB Ramps and Clinton Keith Rd	Signal	15.9	B	14.6	B
15	Creighton Ave and Clinton Keith Rd	Signal	89.7	F	117.6	F
16	High School West Dwy/Warm Springs Rd and Clinton Keith Rd	Signal	21.6	C	35.0	D
17	Bronco Way and Clinton Keith Rd	Signal	87.3	F	18.8	B
18	Whitewood Rd and Clinton Keith Rd	Signal	77.2	E	58.5	E
19	Whitewood Rd and Linnel Ln/Lee Ln	Signal	15.7	B	15.6	B
20	Whitewood Rd and Baxter Rd	Signal	33.6	C	21.1	C
21	Whitewood Rd and Keller Rd	Signal	19.1	B	18.4	B
22	Max Gillis Blvd/Briggs Rd and Leon Rd	Signal	80.7	F	51.0	D
23	Max Gillis Blvd/Thompson Rd and Hwy 79	Signal	115.5	F	82.0	F
A	Warm Springs Rd/Project Driveway A	TWSC ¹	133 (EBR)	B	15.6 (EBR)	C
B	Warm Springs Rd/Project Driveway B3	TWSC ²	NA	NA	NA	NA
C	Warm Springs Rd/Project Driveway C	Signal	14.1	B	25.7	C
D	Warm Springs Rd/Project Driveway D	TWSC	7.5 (NBL)	A	7.6 (NBL)	A

Source: Appendix I.

Notes: sec = seconds; LOS = level of service; I = Interstate; SB = southbound; NB = northbound; L = left; R = right; T=Through; HS = high school; EB = eastbound; NA = not applicable.

TWSC: Two-way stop control - delay reported reflects the critical movement, shown in parentheses.

¹ The HCM methodology is designed to analyze TWSC intersections with up to three lanes. Therefore, this RIRO intersection was modeled assuming no more than three north/south through lanes.

² No east/west turning movements are forecast at this intersection so delay cannot be estimated.

Boldface type indicates locations performing at LOS that does not meet standards.

As shown in Table 4.13-21, the following intersections are projected to operate at unacceptable LOS under Year 2021 Cumulative Conditions:

- Salida Del Sol and Clinton Keith Road: As under existing conditions, the southbound approach to the intersection is projected to operate at LOS F during the weekday PM peak hour.
- Elizabeth Lane and Clinton Keith Road: As under existing and year 2021 Project Completion Conditions, the northbound approach to the intersection is projected to operate at LOS F during the weekday PM peak hour.
- California Oaks Road and Clinton Keith Road: The intersection is projected to operate at LOS E during the weekday PM peak hour.
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road: The intersection is projected to operate at LOS E during the weekday and Saturday PM peak hours.
- Creighton Avenue and Clinton Keith Road: The intersection is projected to operate at LOS F during the weekday PM and Saturday midday peak hours.
- Bronco Way and Clinton Keith Road: The intersection is projected to operate at LOS F during the weekday PM peak hour.

- Whitewood Road and Clinton Keith Road: The intersection is projected to operate at LOS E during the weekday PM and Saturday midday peak hours.
- Max Gillis Boulevard/Briggs Road and Leon Road: The intersection is projected to operate at LOS F during the weekday PM peak hour.
- Max Gillis Boulevard/Thompson Road and SR-79: The intersection is projected to operate at LOS F during the weekday PM peak hour and Saturday midday peak hour.

In the event that the northern leg of Creighton Avenue and signal are not constructed when the site opens, the access locations on Warm Springs Parkway are sufficient to serve the site. Trips that were assumed to use Creighton Avenue would instead use Warm Springs Parkway and the signalized access (Project Driveway C) or stop-controlled northern access (Project Driveway D). The alternative access plan would affect operations at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road intersection and at the project driveways along Warm Springs Parkway.

As shown in Table 4.13-22, all intersections are projected to operate with an acceptable LOS except for the following:

- Creighton Avenue and Clinton Keith Road: The intersection is projected to operate at LOS F during the weekday PM and Saturday midday peak hours.

Table 4.13-22. Year 2021 Cumulative Conditions Intersection Level of Service Analysis – without Creighton Avenue Access

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
15	Creighton Ave and Clinton Keith Rd	Signal	81.4	F	126.4	F
16	High School West Dwy/Warm Springs Rd and Clinton Keith Rd	Signal	22.0	C	41.9	D
A	Warm Springs Rd/Project Driveway A	TWSC	13.5 (EBR)	B	16.2 (EBR)	C
B	Warm Springs Rd/Project Driveway B3	TWSC ¹	0.0	A	0.0	A
C	Warm Springs Rd/Project Driveway C	Signal	14.5	B	27.3	C
D	Warm Springs Rd/Project Driveway D	TWSC	7.5 (NBL)	A	7.6 (NBL)	A

Source: Appendix I.

Notes: sec = seconds; LOS = level of service; TWSC = two-way stop control; EB = eastbound; R = right; NB = northbound; L = left. TWSC: Two-way stop control - delay reported reflects the critical movement, shown in parentheses.

¹ No east/west turning movements are forecast at this intersection so delay cannot be estimated.

Boldface type indicates locations performing at LOS that does not meet standards.

Queuing Analysis

Table 4.13-23 illustrates the available queue storage and 95th percentile queue lengths at the turn lanes for each study intersection under 2021 cumulative conditions with Creighton access.

Table 4.13-23. Year 2021 Cumulative Conditions Queues – with Creighton Avenue Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
8	Nutmeg St and Clinton Keith Rd	EBL	125	36 88	18 71	–	–
		WBL	225	304 602	136 332	Yes	Yes
		NBL	175	53 98	36 99	–	–
		NBR	360 ²	0 86	0 69	–	–
		SBL	50	100 166	52 132	No ⁵	Yes
9	California Oaks Rd and Clinton Keith Rd	WBL	220 ³	542 1047	316 472	Yes	–
		NBL	100 ⁶	162 294	58 113	No ⁵	–
		NBR	485 ²	0 137	0 95	–	–
10	Greer Rd/Murrieta Oaks Ave and Clinton Keith Rd	EBL	260	53 145	44 86	–	–
		WBL	150	66 179	84 173	Yes	–
		WBR	150	24 64	0 0	–	–
		NBL	150	24 55	28 58	–	–
		NBR	150	0 15	0 18	–	–
		SBL	150	113 188	149 217	No ⁵	No ⁵
11	Mitchell Road/Murrieta Oaks Ave and Clinton Keith Rd	EBL	150	89 170	89 180	–	Yes
		WBL	150	263 533	251 423	Yes	Yes
		WBR	160	10 51	0 8	–	–
		NBL	190 ²	21 63	18 51	–	–
		SBL	150	50 85	55 96	–	–
		SBR	150	0 41	0 14	–	–
12	McElwain Rd and Clinton Keith Rd	EBL	200 (x2)	208 303	200 225	–	–
		EBR	100	0 0	0 0	–	–
		WBL	175	23 38	24 39	–	–
		WBR	160	37 97	13 21	–	–
		NBL	50	15 42	11 33	–	–
		SBL	235 (x2)	248 315	304 368	–	–
13	I-215 SB Ramps and Clinton Keith Rd	EBR	385	226 369	443 631	–	Yes
		WBR	380	183 347	146 283	–	–
		SBR	1,100 ¹	317 396	129 192	–	–
14	I-215 NB Ramps and Clinton Keith Rd	NBL/R	960 ¹	526 769	511 561	–	–
		NBR	960 ¹	512 774	478 631	–	–

Table 4.13-23. Year 2021 Cumulative Conditions Queues – with Creighton Avenue Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
15	Creighton Ave and Clinton Keith Rd	EBL/U	250	257 564	439 627	Yes	Yes
		EBR	200	0 5	0 0	–	–
		WBL/U	235	37 59	7 26	–	–
		WBR	150	3 9	9 68	–	–
		NBL	100	49 96	53 99	–	–
		NBT/R	390 ²	0 0	0 0	–	–
		SBL	230 ²	193 331	220 364	No ⁴	No ⁴
16	High School West Dwy/ Warm Springs Rd and Clinton Keith Rd	EBL	205 (x2)	378 473	306 625	Yes	Yes
		WBR	250	2 45	37 134	–	–
		NBL	100	0 0	0 0	–	–
		NBR	390 ²	0 0	0 0	–	–
		SBL	350	158 286	184 396	–	–
		SBR	350	0 6	0 0	–	–
17	Bronco Way and Clinton Keith Rd	EBL/U	200	135 258	76 306	Yes	Yes
		WBL/U	315	176 325	19 70	–	–
		WBR	85	0 11	5 56	–	–
		NBL	355 ²	58 89	15 43	–	–
		NBT/R	355 ²	0 0	0 0	–	–
		SBL	60 ²	127 244	62 178	No ⁴	No ⁴
18	Whitewood Rd and Clinton Keith Rd	EBL	250 (x 2)	354 576	236 344	Yes	–
		EBR	250	73 180	23 111	–	–
		WBL	250(x2)	65 111	57 101	–	–
		WBR	350	0 14	0 0	–	–
		NBL	300	421 624	258 408	Yes	Yes
		SBL	100	119 217	91 165	Yes	Yes
19	Whitewood Rd and Linnel Ln	EBL	130	47 135	35 106	–	–
		EBR	>500 ²	0 0	0 40	–	–
		NBL	200	19 68	17 61	–	–
		SBL	200	3 19	4 23	–	–
20	Whitewood Rd and Baxter Rd	EBL	215	27 100	26 111	–	–
		EBR	>500 ²	0 65	0 51	–	–
		WBL	125	16 60	14 59	–	–

Table 4.13-23. Year 2021 Cumulative Conditions Queues – with Creighton Avenue Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
		NBL	215	148 469	81 263	Yes	Yes
		NBR	>500 ²	0 12	0 1	–	–
		SBL	200	1 7	4 26	–	–
21	Whitewood Rd and Keller Rd	EBL	175	43 143	34 109	–	–
		EBR	545 ²	0 49	0 42	–	–
		WBL	200	5 31	8 38	–	–
		NBL	225	48 155	43 131	–	–
		SBL	115	5 33	4 24	–	–
C	Warm Springs Rd/Project Driveway C	<i>EBR</i>	155	1 25	35 112	–	–
		<i>WBL</i>	100	77 208	155 221	–	No ⁴
		<i>NBL</i>	250 (x2)	57 152	119 252	–	–
		<i>SBL</i>	100	0 0	0 0	–	–
		<i>SBR</i>	100	0 0	0 0	–	–

Source: Appendix I.

Notes: EB = eastbound; L = left; WB = westbound; NB = northbound; R = right; SB = southbound; I = Interstate; U = U-turn; T = through.

*Impacts determined using 95th percentile queues and a queuing impact is identified if the calculated 95th percentile queue length on public streets to exceed the existing or planned storage capacity by more than 25 feet. For storage lanes that are already deficient in existing conditions, a significant queuing impact is determined if the future traffic increases the calculated 95th percentile queue length by more than 25 feet. Average queues provided for information.

¹ Distance to development of separate turn lanes from highway off-ramp.

² Approximate distance to adjacent intersection.

³ Two-way left turn lanes provide additional storage up to 730 feet.

⁴ Queues onto private property, not on City streets.

⁵ Project contribution to queue is less than 25 feet as compared to 2021 Project Completion conditions.

⁶ The City recently completed a project to extend this left turn lane storage to 250 feet.

Boldface type indicates the 95th percentile queue exceeds the available storage.

Italic type indicates the movement does not currently exist.

As shown in Table 4.14-23, queues are projected to exceed storage capacity by more than 25 feet (or by more than 25 feet beyond existing conditions for locations that already exceed capacity) under 2021 cumulative conditions for one or more movements at the following study locations:

- Nutmeg Street and Clinton Keith Road (WBL, SBL)
- California Oaks Road and Clinton Keith Road (WBL)
- Greer Road/Murrieta Oaks Avenue and Clinton Keith Road (WBL)
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road (EBL, WBL)
- I-215 SB Ramps and Clinton Keith Road (EBR)
- Creighton Avenue and Clinton Keith Road (EBL)
- High School West Driveway/Warm Springs Road and Clinton Keith Road (EBL)

- Bronco Way and Clinton Keith Road (EBL)
- Whitewood Road and Clinton Keith Road (EBL, NBL, SBL)
- Whitewood Road and Baxter Road (NBL)

The alternative access plan would affect operations at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road intersection as well as at the Project Driveways along Warm Springs Parkway. As shown in Table 4.13-24, 95th percentile queues are projected to exceed storage capacity under 2021 cumulative conditions without Creighton access, for one or more movements at the following study locations:

- Creighton Avenue and Clinton Keith Road (EBL/U-turn)
- High School West Driveway/Warm Springs Parkway and Clinton Keith Road (EBL)

Table 4.13-24. Year 2021 Cumulative Conditions Queues – without Creighton Avenue Access

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue		Project Impact*	
				Weekday PM	Saturday Midday	Weekday PM	Saturday Midday
15	Creighton Ave and Clinton Keith Rd	EBL/U	250	223 479	319 494	Yes	Yes
		EBR	200	0 5	0 0	–	–
		WBL/U	235	36 60	7 26	–	–
		WBR	150	0 9	9 68	–	–
		NBL	100	49 96	53 99	–	–
		NBT/R	390 ¹	0 0	0 0	–	–
		SBL	230 ¹	193 331	220 364	No ²	No ²
16	High School West Dwy/ Warm Springs Rd and Clinton Keith Rd	EBL	205	418 513	336 690	Yes	Yes
		WBR	250	2 45	37 134	–	–
		NBL	100	0 0	0 0	–	–
		NBR	390 ¹	0 0	0 0	–	–
		SBL	350	158 286	184 396	–	–
		SBR	350	0 18	0 0	–	–
C	Warm Springs Rd/Project Driveway C	EBR	155	6 39	50 152	–	No ²
		WBL	100	78 210	162 337	–	No ²
		NBL	250 (x2)	60 157	132 275	–	–
		SBL	100	0	0	–	–
		SBR	100	0	0	–	–

Source: Appendix I.

Notes: EB = eastbound; L = left; U = U-turn; R = right; WB = westbound; NB = northbound; T = through; SB = southbound.

*Impacts determined using 95th percentile queues. A queuing impact is determined if the project causes the calculated 95th percentile queue length on public streets to exceed the existing or planned storage capacity by more than 25 feet. For storage lanes that are already deficient without the project, a significant queuing impact is determined if the project increases the calculated 95th percentile queue length by more than 25 feet. Average queues provided for information.

¹ Approximate distance to adjacent intersection.

² Queues onto private property, not on City streets.

Boldface type indicates the 95th percentile queue exceeds the available storage.

Italic type indicates the movement does not currently exist.

Roadway Segment Analysis

An assessment of ADT was conducted for the three roadway segments listed below for Year 2021 Cumulative Conditions:

- Clinton Keith Road, between I-215 Northbound Ramps and Warm Springs Parkway
- Whitewood Road, north of Clinton Keith Road
- Warm Springs Parkway, north of Clinton Keith Road

Average daily volumes were developed by adding the daily trips associated with the approved/proposed projects (developed by factoring up the peak hour volumes based on the ratio of daily to peak hour volumes observed in existing counts) to the year 2021 project completion volumes. This accounts for background growth and the project trips. As shown in the Table 4.13-25, with Creighton Avenue access, the segment of Clinton Keith Road between I-215 northbound ramps and Warm Spring Parkway is projected to operate at LOS D under year 2021 Cumulative Conditions on a Saturday, in excess of the City's LOS C standard. However, the City's General Plan indicates that LOS D is allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the project site and study area roadways.

Table 4.13-25. Year 2021 Cumulative Conditions Average Daily Traffic Analysis – with Creighton Avenue access

Segment	Metric	Weekday	Saturday
Clinton Keith Road, between I-215 Northbound Ramps and Warm Springs Parkway	Volume (Daily)	43,782	43,672
	Capacity (Daily, LOS E)	53,900	53,900
	LOS	D	D
	v/c Ratio	0.81	0.81
Warm Springs Parkway Road, north of Clinton Keith Road	Volume (Daily)	17,764	23,694
	Capacity (Daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c Ratio	0.52	0.69
Whitewood Road, north of Clinton Keith Road	Volume (Daily)	17,726	17,695
	Capacity (Daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c Ratio	0.52	0.52

Source: Appendix I.

Notes: I = Interstate; LOS = level of service; v/c = volume to capacity.

The capacities shown are based on roadway classification and taken from the City's General Plan (Reference 2) for roadways operating at an LOS E. The level of service is based on the City's General Plan maximum two-way ADT volume for each LOS grade. The table provides maximum ADT volumes for LOS C, D and E. Clinton Keith Road is an urban arterial, Warm Springs Parkway is a major roadway, and Whitewood Road a major roadway.

The resulting v/c ratios on each roadway without Creighton Avenue access are shown in Table 4.3-26. As shown in Table 4.3-26, the segment of Clinton Keith Road between I-215 Northbound Ramps and Warm Spring Parkways is projected to operate at LOS D under year 2021 Cumulative Conditions, in excess of the City’s LOS C standard. However, the City’s General Plan indicates that LOS D is allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the proposed site and study roadways.

Table 4.13-26. Year 2021 Cumulative Conditions Average Daily Traffic Analysis – without Creighton Avenue access

Segment	Metric	Weekday	Saturday
Clinton Keith Road, between I-215 Northbound Ramps and Warm Springs Parkway	Volume (Daily)	45,060	45,418
	Capacity (Daily, LOS E)	53,900	53,900
	LOS	D	D
	v/c Ratio	0.81	0.81
Warm Springs Parkway Road, north of Clinton Keith Road	Volume (Daily)	19,607	26,107
	Capacity (Daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c Ratio	0.57	0.77
Whitewood Road, north of Clinton Keith Road	Volume (Daily)	17,726	17,695
	Capacity (Daily, LOS E)	34,100	34,100
	LOS	C	C
	v/c Ratio	0.52	0.52

Source: Appendix I.

Notes: I = Interstate; LOS = level of service; v/c = volume to capacity.

The capacities shown are based on roadway classification and taken from the City’s General Plan (Reference 2) for roadways operating at an LOS E. The level of service is based on the City’s General Plan maximum two-way ADT volume for each LOS grade. The table provides maximum ADT volumes for LOS C, D and E. Clinton Keith Road is an urban arterial, Warm Springs Parkway is a major roadway, and Whitewood Road a major roadway.

2035 Build-Out Traffic Conditions

The year 2035 Build-Out Conditions analysis was conducted to assess operations along Warm Springs Parkway and the I-215 interchange. Traffic volumes were developed for the weekday PM peak hour under 2035 conditions at intersections along Warm Springs Parkway and the I-215 ramps on Clinton Keith Road. Per the City’s request, the analysis was conducted for the weekday PM peak hour to ensure that adequate capacity was provided along Warm Springs Parkway. Signal timing was assumed to be coordinated along Clinton Keith Road and was optimized based on projected volumes. In addition, roadway segment analysis is provided per the direction of City staff, and evaluation of the freeway corridor is provided per direction from Caltrans staff. The 2035 volumes include the project and anticipated background growth associated with other developments and planned roadway changes. The 2035 Build-Out Conditions traffic volumes for weekday PM traffic volumes are shown in Figure 4.13-21.

2035 Build-Out Traffic Analysis

Intersections

Table 4.13-27 shows the Year 2035 Build-Out Conditions delays and LOS for the study intersections during weekday PM peak hour. As shown in Table 4.13-27, all study locations operate at a satisfactory LOS D or better during the weekday PM peak hour. The proposed five lane cross-section of Warm Springs Parkway (with additional turn lanes at intersections) will provide adequate capacity through the 2035 General Plan build-out.

Table 4.13-27. 2035 Build-Out Conditions Intersection Level of Service Analysis

ID	Intersection	Traffic Control	Weekday PM Peak	
			Delay (sec)	LOS
13	I-215 SB Ramps and Clinton Keith Rd	Signal	18.0	B
14	I-215 NB Ramps and Clinton Keith Rd	Signal	22.6	C
15	Creighton Ave and Clinton Keith Rd	Signal	45.8	D
16	High School West Dwy/Warm Springs Road and Clinton Keith Rd	Signal	52.2	D
17	Bronco Way and Clinton Keith Rd	Signal	44.4	D
A	Warm Springs Rd/Project Driveway A	TWSC ¹	16.6 (EBR)	C
B	Warm Springs Rd/Project Driveway B	TWSC ¹	15.3 (WBR)	C
C	Warm Springs Rd/Project Driveway C	Signal	25.4	C
D	Warm Springs Rd/Project Driveway D	TWSC	10.9 (EBR)	B

Source: Appendix I.

Notes: sec = seconds; LOS = level of service; I = Interstate; SB = southbound; NB = northbound; HS = high school; TWCS = two-way stop control; EB = eastbound; R = right; WB = westbound.

TWSC: Two-way stop control - delay reported reflects the critical movement, shown in parentheses.

¹ The HCM methodology is designed to analyze TWSC intersections with up to three lanes. Therefore, this RIRO intersection was modeled assuming no more than three north/south through lanes.

Queuing Analysis

Table 4.13-28 illustrates the available queue storage and 95th percentile queue lengths at the turn-lanes for each study intersection. As shown in Table 4.13-28, queues are projected to exceed storage capacity under 2035 General Plan Build-Out for one or more movements at the following study locations:

- I-215 southbound ramps and Clinton Keith Road
- Creighton Avenue and Clinton Keith Road
- Warm Springs Road and Clinton Keith Road
- Bronco Way and Clinton Keith Road

Table 4.13-28. Year 2035 Project Completion 95th Percentile Queues

ID	Intersection	Movement	Available Storage (feet)	Average 95th Percentile Queue Weekday PM
13	I-215 SB Ramps and Clinton Keith Rd	EBR	385	701 1027
		WBR	380	131 130 ⁴
		SBR	1,100 ²	668 821
14	I-215 NB Ramps and Clinton Keith Rd	NBL/R	960 ²	660 925
		NBR	960 ²	668 957
15	Creighton Ave and Clinton Keith Rd	EBL/U	250	422 536
		EBR	200	3 4
		WBL/U	235	34 43
		WBR	150	9 11
		NBL	100	70 126
		NBT/R	390 ²	0 0
		SBL	230 ¹	150 326
16	Warm Springs Rd and Clinton Keith Rd	EBL	205	577 689
		WBR	250	2 9
		NBL	100	0 0
		NBR	390 ¹	0 0
		SBL	350	202 354
		SBR	350	315 275 ⁴
17	Bronco Way and Clinton Keith Rd	EBL/U	200	138 261
		WBL/U	315	208 116 ⁴
		WBR	85	0 0
		NBL	355 ¹	71 105
		NBT/R	355 ¹	0 0
		SBL	60 ¹	113 229
C	Warm Springs Rd/Project Driveway C	EBR	155	96 179 ³
		WBL	100	133 265³
		NBL	250	124 227
		SBL	100	3 13
		SBR	100	0 0

Source: Appendix I.

Notes: I = Interstate; SB = southbound; EB = eastbound; R = right; WB = westbound; NB = northbound; L = left; U = U-turn; T = through.

¹ Approximate distance to adjacent intersection.

² Distance to development of separate turn lanes from highway off-ramp.

³ Queues onto private property, not on City streets.

⁴ The 95th percentile queue is less than the 50th percentile queue due to how Synchro calculates each queue length. Upstream metering is only performed with the 95th percentile queue. When the 95th percentile volumes cause the corresponding approach of the upstream intersection to be over capacity, volumes are metered and the 95th percentile queue can be less than the 50th percentile queue.

Boldface type indicates the 95th percentile queue exceeds the available storage.

Italic type indicates the movement does not currently exist.

Roadway Segment Analysis

An assessment of ADT was conducted for 2035 Build-Out Conditions for the weekday. Average daily volumes were developed by assuming the same ratio between peak hour and daily counts observed under existing conditions. The resulting v/c ratios on each roadway are shown in Table 4.13-29.

Table 4.13-29. 2035 Build-Out Conditions Average Daily Traffic Analysis

Segment	Metric	Weekday
Clinton Keith Road, between I-215 Northbound Ramps and Warm Springs Parkway	Volume (Daily)	52,240
	Capacity (Daily, LOS E)	53,900
	LOS	E ¹
	v/c Ratio	0.97
Warm Springs Parkway Road, north of Clinton Keith Road	Volume (Daily)	26,468 ²
	Capacity (Daily, LOS E)	34,100
	LOS	C
	v/c Ratio	0.68
Whitewood Road, north of Clinton Keith Road	Volume (Daily)	26,764
	Capacity (Daily, LOS E)	34,100
	LOS	C
	v/c Ratio	0.78

Source: Appendix I.

Notes: I = Interstate; LOS = level of service; v/c = volume to capacity.

The capacities shown are based on roadway classification and taken from the City's General Plan (Reference 2) for roadways operating at an LOS E. The level of service is based on the City's General Plan maximum two-way ADT volume for each LOS grade. The table provides maximum ADT volumes for LOS C, D and E. Clinton Keith Road is an urban arterial, Warm Springs Parkway is a major roadway, and Whitewood Road a major roadway.

¹ See page 5-12 in Murrieta General Plan 2035.

² The volume projected on Whitewood Road is based on the City's General Plan (Reference 2) and Clinton Keith Road Extension Project Traffic Operations Analysis (Reference 11).

As shown in the table, the segment of Clinton Keith Road between the I-215 northbound ramps and Warm Spring Parkway is projected to operate at LOS E under year 2035 Build-Out conditions on a weekday, in excess of the City's LOS C standard. However, the City's General Plan acknowledges that certain corridors are projected to exceed the City's performance standard, including Clinton Keith Road (City of Murrieta 2011b).

Freeway Analysis

Tables 4.13-30 and 4.13-31 show the 2035 Build-Out Conditions analysis results for the freeway study segments during weekday AM and PM and the Saturday midday peak hours for the northbound and southbound lanes, respectively. As shown in Tables 4.13-30 and 4.13-31, multiple study segments operate with an unacceptable LOS E or F under 2035 Build-Out Conditions. Because the project does not change development assumptions made for the site, Build-Out Year 2035 traffic volumes would include project traffic.

Table 4.13-30. 2035 Build-Out Freeway Analysis – Northbound

Interstate 215 Northbound Segment			AM Peak Hour		PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS	Density ²	LOS	Density ²	LOS
NB-1	Basic	North of Scott Road	19.7	C	40.4	E	~3	~3
NB-2	Merge	Scott Road On Ramp	24.1	C	35.6	E	~3	~3
NB-3	Diverge	Scott Road Off Ramp	30.7	D	39.3	D	~3	~3

Table 4.13-30. 2035 Build-Out Freeway Analysis – Northbound

Interstate 215 Northbound Segment			AM Peak Hour		PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS	Density ²	LOS	Density ²	LOS
NB-4	Basic	Between Scott Road and Clinton Keith On Ramp	22.3	C	42.0	E	28.0	D
NB-5	Merge	Clinton Keith On Ramp	25.4	C	37.1	E	29.1	D
NB-6	Merge	Clinton Keith On Ramp Loop	25.3	C	35.3	E	28.4	D
NB-7	Diverge	Clinton Keith Off Ramp	28.9	D	42.0	F	34.1	D
NB-8	Basic	Between Clinton Keith Off Ramp and Los Alamos On Ramp	20.4	C	46.5	F	28.7	D
NB-9	Merge	Los Alamos On Ramp	24.8	C	38.6	F	30.3	D
NB-10	Diverge	Los Alamos Off Ramp	28.5	D	41.3	F	33.7	D
NB-11	Basic	Between Los Alamos Off Ramp and Murrieta Hot Springs Off Ramp	20.0	C	45.3	F	28.2	D
NB-12	Merge	Murrieta Hot Springs On Ramp	25.5	C	39.5	F	30.9	D
NB-13	Merge	Murrieta Hot Springs On Ramp (Loop)	15.4	B	28.5	D	22.3	C
NB-14	Diverge	Murrieta Hot Springs Off Ramp	19.0	B	37.8	F	29.6	D
NB-15	Basic	South of Murrieta Hot Springs Road	23.7	C	71.6	F	39.9	E

Source: Appendix I.

Notes: LOS = level of service. NB = northbound.

¹ HCM 2010 definition, Basic Freeway Segment, Weaving Segment, Merge Segment, or Diverge Segment

² Density expressed in pc/mi/ln, passenger cars per mile per lane

³ No data available for Saturday peak hour conditions

Table 4.13-31. 2035 Build-Out Conditions Freeway Analysis – Southbound

Interstate 215 Northbound Segment			AM Peak Hour		PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS	Density ²	LOS	Density ²	LOS
SB-1	Basic	North of Scott Road	29.0	D	31.4	D	.3	.3
SB-2	Diverge	Scott Road Off Ramp	33.8	D	35.1	D	.3	.3
SB-3	Merge	Scott Road On Ramp	36.2	E	33.0	D	.3	.3
SB-4	Basic	Between Scott Road and Clinton Keith Off Ramp	36.2	E	32.6	D	37.8	E
SB-5	Diverge	Clinton Keith Off Ramp	36.6	E	35.8	E	37.0	E
SB-6	Merge	Clinton Keith On Ramp Loop	29.8	D	26.9	C	30.3	D

Table 4.13-31. 2035 Build-Out Conditions Freeway Analysis – Southbound

Interstate 215 Northbound Segment			AM Peak Hour		PM Peak Hour		Saturday Midday Peak Hour	
Segment ID	Segment Type ¹	Segment Location	Density ²	LOS	Density ²	LOS	Density ²	LOS
SB-7	Merge	Clinton Keith On Ramp	34.0	D	30.8	D	34.2	D
SB-8	Basic	Between Clinton Keith Off Ramp and Los Alamos On Ramp	36.9	E	30.5	D	38.0	E
SB-9	Diverge	Los Alamos Off Ramp	38.2	E	36.4	E	39.0	E
SB-10	Weave	Between Los Alamos On Ramp and Murrieta Hot Springs	28.5	D	–	F	–	F
SB-11	Merge	Murrieta Hot Springs On Ramp (Loop)	41.9	F	33.1	D	40.0	F
SB-12	Merge	Murrieta Hot Springs On Ramp	43.8	F	35.1	E	42.1	F
SB-13	Basic	South of Murrieta Hot Springs Road	62.8	F	35.5	E	55.2	F

Source: Appendix I.

Notes: LOS = level of service; SB = southbound.

¹ HCM 2010 definition, Basic Freeway Segment, Weaving Segment, Merge Segment, or Diverge Segment

² Density expressed in pc/mi/ln, passenger cars per mile per lane

³ No data available for Saturday peak hour conditions

Summary and Conclusions

Intersection Level of Service

The previously discussed analysis indicates that nine intersections would not meet standards under 2021 Cumulative Conditions. Table 4.13-32 lists these locations and the operations under all scenarios studied. A discussion of each intersection is included below. Three intersections do not meet LOS standards during Existing Conditions. These and one additional intersection are projected to not meet LOS standards for Year 2021 Project Completion Conditions. Five additional intersections beyond that are projected to not meet LOS standards for Year 2021 Cumulative conditions. In addition, the intersections along Warm Springs Parkway and on Clinton Keith Road from the I-215 ramps to Warm Springs Parkway were also assessed under 2035 Build-Out Conditions. All intersections are projected to operate at an acceptable LOS with the planned lane configurations and traffic control devices under 2035 Build-Out Conditions.

Table 4.13-32. Intersections not Meeting LOS Standards

ID	Intersection	Traffic Control	Standard	Level of Service (Weekday PM Saturday Midday)			Impact Type
				Existing	Year 2021 Project Completion	Year 2021 Cumulative	
5	Salida Del Sol and Clinton Keith Road	TWSC	LOS D	F C (SBL/R)	E C (SBL/R)	F D (SBL/R)	Existing + Project + Cumulative

Table 4.13-32. Intersections not Meeting LOS Standards

ID	Intersection	Traffic Control	Standard	Level of Service (Weekday PM Saturday Midday)			Impact Type
				Existing	Year 2021 Project Completion	Year 2021 Cumulative	
6	Elizabeth Lane and Clinton Keith Road	TWSC	LOS D	F D (NBL/T/R)	F C (NBL/T/R)	F D (NBL/T/R)	Existing + Project + Cumulative
9	California Oaks Rd and Clinton Keith Rd	Signal	LOS D	D C	E C	E C	Project + Cumulative
11	Mitchell Road/Murrieta Oaks Ave and Clinton Keith Rd	Signal	LOS D	C B	D C	E E	Cumulative
15	Creighton Avenue and Clinton Keith Rd (with Creighton Access)	Signal	LOS D	A A	B A	F F	Cumulative
15	Creighton Avenue and Clinton Keith Rd (without Creighton Access)	Signal	LOS D	A A	B A	F F	Cumulative
17	Bronco Way and Clinton Keith Road	Signal	LOS D	B A	D B	F B	Cumulative
18	Whitewood Rd and Clinton Keith Rd	Signal	LOS D	D C	D C	E E	Cumulative
22	Max Gillis Blvd/Briggs Rd and Leon Rd	Signal	LOS D	D C	D D	F D	Cumulative
23	Max Gillis Blvd/Thompson Road and SR-79	Signal	LOS D	F E	E E	F F	Existing + Project + Cumulative

Source: Appendix I.

Notes: TWSC = two-way stop control; LOS = level of service; SB = southbound; L = left; R = right; NB = northbound; T = through; SR = State Route.

Boldface type indicates locations performing at LOS that does not meet standards.

Salida Del Sol and Clinton Keith Road

The southbound approach to this three-legged, stop-controlled intersection is projected to operate at LOS F during the weekday PM peak hour under existing, project, and cumulative conditions, and therefore is an existing, project, and Cumulative Conditions impact. The intersection is outside of the City's jurisdiction and is under the jurisdiction of the City of Wildomar. Project trips would not contribute to the critical movement where 26 vehicles make a southbound left or right turn under 2021 Cumulative Conditions during the weekday PM peak hour. Volume-based signal warrants from the Manual of Uniform Traffic Control Devices were completed for this location and can be found in the TIA, Appendix K. The City of Wildomar's Capital Improvement Program (CIP) includes a future

development impact fee traffic signal improvement at this intersection. If the intersection were signalized, it would operate at an LOS A during the weekday PM peak hour under 2021 Cumulative Conditions, within the City's standards. There are alternate routes available for vehicles to access a signal on Clinton Keith Road (George Avenue 0.5 miles to the west and Smith Ranch Road 0.5 miles to the east), so vehicles experiencing long delays or challenges turning onto Clinton Keith Road at Salida Del Sol during peak periods have other options available.

In addition, future widening of Clinton Keith Road to six lanes is identified in this area as part of the widening of Clinton Keith Road from the eastern Wildomar city limit to Inland Valley Drive beginning in the winter of 2020. Widening would improve operations to an LOS D during the weekday PM peak hour under 2021 Cumulative Conditions, therefore addressing the LOS deficiency. The project applicants will pay the TUMF required of all developments in participating jurisdictions. The Clinton Keith Road corridor widening and traffic signals are identified in the fund. As the implementation of this work is outside the lead agency's jurisdiction and full funding and implementation cannot be guaranteed by project opening, the project and cumulative intersection impacts are considered significant and unavoidable.

Elizabeth Lane and Clinton Keith Road

The northbound approach to this three-legged, stop-controlled intersection is projected to operate at LOS F during the weekday PM peak hour under existing conditions and future scenarios studied, and is, therefore, an existing, project, and Cumulative Conditions impact. Of the five vehicles projected to make a northbound movement under 2021 Cumulative Conditions during the weekday PM peak hour, all are existing vehicles (presumably associated with the storage facility southeast of the intersection). Volume-based signal warrants from the Manual of Uniform Traffic Control Devices were completed for this location as summarized in Appendix K of the TIA. The City of Wildomar's CIP includes a future development impact fee traffic signal improvement at this intersection. If the intersection were signalized, it would operate at an LOS A during the weekday PM peak hour under 2021 Cumulative Conditions, within the City's standards. Further, this intersection is located outside of the jurisdiction of the lead agency and is in the City of Wildomar.

The planned widening of Clinton Keith Road to six lanes improves operations at the intersection, but does not fully mitigate the LOS failure. With the widening, the intersection would continue to operate at an LOS F but with a delay of 53.8 seconds during the weekday PM peak hour under 2021 Cumulative Conditions as compared to a delay of 95.4 seconds without the additional lanes. The project applicants will be responsible for paying the TUMF required of all developments in participating jurisdictions, and the Clinton Keith Road corridor widening and traffic signals are identified in the fund. As the implementation of the this work is outside of the lead agency's jurisdiction and full funding and implementation cannot be guaranteed by project opening, the project and cumulative intersection impacts are considered significant and unavoidable.

California Oaks Road and Clinton Keith Road, and Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road

The City's General Plan shows a future cross-section across Clinton Keith Road at California Oaks Road and Murrieta Oaks Avenue (City of Murrieta 2011b). Based on discussions with the City, Clinton Keith Road was designed and constructed at its ultimate width, but striped as two lanes in each direction at some locations with the intent to restripe the roadway to add the additional lanes when traffic volumes warranted it. Currently there are two eastbound through lanes at all locations, and two westbound through lanes at all locations except at Mitchell Road/Murrieta Oaks Avenue, where there are three westbound lanes. Restriping the road to accommodate an additional eastbound through lane would significantly improve operations at all locations, as shown in Table 4.13-33.

Table 4.13-33. Year 2021 Cumulative Conditions Intersection LOS Analysis – Additional Eastbound Through Lane on Clinton Keith Road

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
9	California Oaks Rd and Clinton Keith Rd	Signal	40.7	D	19.5	B
11	Mitchell Road/Murrieta Oaks Ave and Clinton Keith Rd	Signal	31.8	C	33.0	C

Source: Appendix I.

Note: sec = seconds LOS = level of service.

The intersection of California Oaks Road and Clinton Keith Road meets LOS standards under existing conditions but is projected to operate at LOS E during the weekday PM peak hour under 2021 Project Completion Conditions and at LOS F during the weekday PM peak hour under 2021 Cumulative Conditions. With implementation of mitigation requiring striping of an additional eastbound through lane and signal detection modifications (**Mitigation Measure [MM] TRAF-1**), the project and cumulative LOS impact at the California Oaks Road and Clinton Keith Road intersection would be less than significant.

The intersection of Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road is projected to meet LOS standards under Year 2021 Project Completion Conditions, but not under Year 2021 Cumulative Conditions, and thus is a 2021 Cumulative Conditions impact. The City of Murrieta requires a proportionate share contribution at intersections that meet standards under Project Completion Conditions but not under Cumulative Conditions.

As such, the project applicants will pay a fair-share contribution to restripe the additional eastbound travel lane on Clinton Keith Road between California Oaks Road and Mitchell/Murrieta Oaks Avenue and to add signal detection (**MM-TRAF-6**).

Implementation of **MM-TRAF-6** would reduce cumulative LOS impacts at this location to less than significant. However, since overall funding for the impacts at Clinton Keith Road at Mitchell Road/Murrieta Oaks Avenue has not been identified and the mitigation cannot be guaranteed, the impact at this location remains significant and unavoidable.

Creighton Avenue and Clinton Keith Road

With Creighton Avenue Access

The intersection of Creighton Avenue and Clinton Keith Road meets standards under existing conditions and 2021 Project Completion Conditions but is projected to operate at LOS F during the weekday PM and Saturday midday peak hours under 2021 Cumulative Conditions. This is a Cumulative Conditions impact. As signal coordination was kept constant between the 2021 Project Completion and Cumulative Conditions, a revised coordination plan is needed to account for the additional traffic from approved and pending projects. Regulatory optimizing of signal timing and coordination by the City would reduce intersection operations to LOS C during the weekday PM peak hour and LOS D during Saturday midday peak hour. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change; no mitigation is required and the project would have a less-than-significant impact at this location.

Per the City, the Vineyard III project will be conditioned for dual eastbound left turn lanes at Creighton Avenue and Clinton Keith Road at 13,000 square feet of development (5,000-square-foot tire store, 3,000-square-foot high-turnover (sit-down) restaurant, and 5,000-square-foot drive-in bank). Project access to the Costco property from eastbound Clinton Keith Road would require travel across the privately owned Vineyard I property. The significant cumulative impact at this intersection would occur only if this access is provided and, in that case, construction of a dual westbound left turn lane would mitigate this intersection. Until that dual left turn lane is constructed, it is anticipated that connection to the Costco property from Creighton Avenue would be restricted and as such, the project would not contribute trips at the eastbound left turn lanes at Creighton Avenue and Clinton Keith Road. As access would only be provided if this cumulative impact is mitigated by construction of dual left turn lanes, cumulative impacts would be less than significant.

Without Creighton Avenue Access

The intersection of Creighton Avenue and Clinton Keith Road meets standards under existing conditions and 2021 Project Completion Conditions but is projected to operate at LOS F during the weekday PM and Saturday midday peak hours under 2021 Cumulative Conditions. This is a Cumulative Conditions impact. As signal coordination was kept constant between the 2021 Project Completion and Cumulative conditions, a revised coordination plan is needed to account for the additional traffic from approved and pending projects. Regular review and update of signal timing and coordination by the City would reduce intersection operations to LOS B during the weekday PM peak hour and LOS D during Saturday midday peak hour. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change; no mitigation is required and the project would have a less-than-significant impact at this location. As indicated above, if the project does not have Creighton Avenue access, the project would not cumulatively contribute to impacts at the eastbound left turn lane at this intersection.

Bronco Way and Clinton Keith Road

The intersection of Bronco Way and Clinton Keith Road meets standards under existing conditions and 2021 Project Completion Conditions but is projected to operate at LOS F during the weekday PM peak hour under 2021 Cumulative Conditions. This is a Cumulative Conditions impact. As signal coordination was kept constant between the 2021 Project Completion and Cumulative Conditions, a revised coordination plan is needed to account for the additional traffic from approved and pending projects. Regular review and update of signal timing and coordination by the City would reduce intersection operations to LOS C during the weekday PM peak hour. The City is currently implementing signal coordination along Clinton Keith Road and would routinely update timing plans as traffic volumes change. No mitigation is required and the project would have a less-than-significant impact at this location.

Whitewood Road and Clinton Keith Road

The signalized intersection of White Road and Clinton Keith Road is projected to operate at LOS E under 2021 Cumulative Conditions. The City's General Plan has identified the operational failure projected at the intersection of Whitewood Road and Clinton Keith Road and the City Council has adopted overriding considerations at this location in the current General Plan (per resolution 11-2768). Nonetheless, the project is calculated to have a cumulatively considerable impact at this intersection. The City currently has a project in the CIP (project #8389) to add dual northbound and southbound left turn lanes at this intersection and to restripe; the project applicants will pay a fair-share contribution to this CIP project (**MM-TRAF-5**). This CIP project would improve operations at this intersection; however, it is not guaranteed to be completed by project build-out. Therefore, the project would have a significant and unavoidable impact at this location until the CIP project is completed.

Max Gillis Boulevard/Briggs Road and Leon Road, Max Gillis Boulevard/Thompson Road and SR-79

The signalized intersection of Max Gillis Boulevard/Briggs Road and Leon Road is projected to meet the LOS standards under 2021 Project Completion Conditions. With the addition of traffic associated with approved/pending projects, operations would degrade during the weekday PM peak hour to LOS E, which does not meet the County’s LOS D standard. This is a Cumulative Conditions impact.

The signalized intersection of Max Gillis Boulevard/Thompson Road and SR-79 does not meet standards under existing conditions or the year 2021 project or cumulative scenarios. Under all scenarios, the intersection is projected to operate at an LOS E or F during both the weekday PM peak hour and Saturday midday peak hour (See Table 4.13-32). This is an existing impact.

Both intersections currently serve to provide a connection between I-215 and SR-79. A planned extension of Clinton Keith Road (shown in Figure 16 in the TIA) will provide an alternative route for traffic using Max Gillis Boulevard. Without the final piece of the Clinton Keith Road extension between Leon Road and SR-79, eastbound right turn and northbound left turn volumes at both the Max Gillis Boulevard/Briggs Road and Leon Road and Max Gillis Boulevard/Thompson Road and SR-79 intersections are high, as vehicles use the intersections to connect between Clinton Keith Road and SR-79. The Clinton Keith Road extension will be completed in the future between Leon Road and SR-79, which will provide an additional route for traffic currently using Leon Road and Max Gillis Boulevard. Additional improvements at the intersections (such as provision of an overlap for the eastbound right turn) could improve operations in the interim. In order to estimate operations at the intersections with the extension in place, volumes were adjusted to account for anticipated changes in traffic patterns. Based on the Clinton Keith Road Extension Project Traffic Operations Analysis, approximately 51% of traffic volumes on Clinton Keith Road northwest of Leon Road would use the Clinton Keith Road extension and 49% would use Leon Road. Therefore, eastbound right turns and northbound left turns at Max Gillis Boulevard/Briggs Road and Leon Road were reduced by 51% to account for rerouting to Clinton Keith Road with the extension in place. The reduced traffic volumes from Max Gillis Boulevard/Briggs Road and Leon Road were also carried forward to the affected movements at Max Gillis Boulevard/Thompson Road and SR-79. The extension of Clinton Keith Road to SR-79 would significantly improve operations at both locations, as shown in Table 4.13-34. The Clinton Keith Road extension is identified in the TUMF fund, and the project would pay its fair share of the TUMF. Since implementation of the TUMF is outside of the lead agency’s jurisdiction and full funding for the extension has not been identified, the implementation of the improvement cannot be guaranteed to be implemented by project opening and the impact would be significant and unavoidable.

Table 4.13-34. Year 2021 Cumulative Conditions Intersection LOS Analysis – Clinton Keith Road Extension

ID	Intersection	Traffic Control	Weekday PM Peak		Saturday Midday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS
22	Max Gillis Blvd/Briggs and Leon Road	Signal	25.6	C	21.6	C
23	Max Gillis Blvd/Thompson Road and Hwy 79	Signal	51.9	D	54.6	D

Source: Appendix I.

Note: sec = seconds LOS = level of service.

Roadway Segments

Based on TIA, all study area roadway segments are projected to operate with an acceptable LOS for the 2021 Project Completion conditions. Under 2021 Cumulative conditions, the segment of Clinton Keith Road between I-215 northbound ramps and Warm Spring Parkways is projected to operate at LOS D on a Saturday, in excess of the City’s LOS C standard. The City’s General Plan indicates that LOS D is allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the project site and study area roadways. Under 2035 General Plan Build-Out Conditions, the segment of Clinton Keith Road between I-215 northbound ramps and Warm Spring Parkways is projected to operate at LOS E on a weekday, in excess of the City’s LOS C standard. However, the City’s General Plan acknowledges that certain corridors are projected to exceed the City’s performance standard, including Clinton Keith Road. Therefore, the LOS failure on this roadway is not considered to be unacceptable. Project impacts to roadway segments would be less than significant.

Freeway

Under 2035 General Plan Build-Out Conditions, the I-215 corridor is projected to generally operate below the target LOS D threshold. The future projections indicate that additional capacity is required along the six-lane mainline corridor. The poor performance at ramp merge/diverge areas can also be attributed to overcapacity operations along the mainline. The I-215 Transportation Concept Report recommends expansion of the mainline segment to eight lanes to accommodate the increased demand. The project would contribute minimal traffic to the mainline corridor: less than 1% during the weekday AM peak hour, 2% or less during the weekday PM peak hour, and 4% or less during the Saturday peak hour. Based on the significance criteria, the mainline corridor baseline operations of LOS E or F would be maintained with the minimal addition of project traffic. Therefore, project impacts to the freeway mainline facilities would be less than significant.

Queuing Analysis

Based on the operational analysis, 10 intersections are projected to not meet standards under Year 2021 Cumulative Conditions (see Table 4.13-35).

Table 4.13-35. Intersections with Queues Exceeding Determined Threshold

ID	Intersection	Movement	Available Storage	95th Percentile Queues (Weekday PM Saturday Midday)			Impact Type*
				Existing	Year 2021 Project Completion	Year 2021 Cumulative	
8	Nutmeg Street and Clinton Keith Road	WBL	225	532 198	506 274	602 332	Existing + Project + Cumulative
		SBL	50	110 65	148 106	166 132	Existing + Project + Cumulative

Table 4.13-35. Intersections with Queues Exceeding Determined Threshold

ID	Intersection	Movement	Available Storage	95th Percentile Queues (Weekday PM Saturday Midday)			Impact Type*
				Existing	Year 2021 Project Completion	Year 2021 Cumulative	
9	California Oaks Rd and Clinton Keith Rd	WBL	220	797 301	959 412	1047 472	Existing + Project + Cumulative
		NBL	100 ¹	227 81	279 102	294 113	Existing + Project
10	Greer Road/Murrieta Oaks Avenue and Clinton Keith Road	WBL	150	59 46	107 95	179 173	Cumulative
		SBL	150	134 118	167 198	188 217	Project
11	Mitchell Road/Murrieta Oaks Ave and Clinton Keith Rd	EBL	150	37 38	45 26	170 180	Cumulative
		WBL	150	199 162	406 297	533 423	Existing + Project + Cumulative
13	I-215 SB Ramps and Clinton Keith Road	EBR	385	212 155	108 127	369 631	Cumulative
15	Creighton Avenue and Clinton Keith Rd (with Creighton Access)	EBL	250	16 13	62 112	564 627	Cumulative
15	Creighton Avenue and Clinton Keith Rd (without Creighton Access)	EBL	250	16 13	12 21	479 494	Cumulative
16	High School West Driveway/Warms Springs Parkway and Clinton Keith Road (with Creighton Access)	EBL	205 (x2)	Does Not Exist	415 535	473 625	Project + Cumulative

Table 4.13-35. Intersections with Queues Exceeding Determined Threshold

ID	Intersection	Movement	Available Storage	95th Percentile Queues (Weekday PM Saturday Midday)			Impact Type*
				Existing	Year 2021 Project Completion	Year 2021 Cumulative	
16	High School West Driveway/ Warms Springs Parkway and Clinton Keith Road (without Creighton Access)	EBL	205 (x2)	Does Not Exist	464 602	513 690	Project + Cumulative
17	Bronco Way and Clinton Keith Road	EBL	200	30 4	44 42	258 306	Cumulative
18	Whitewood Rd and Clinton Keith Road	EBL	250 (x2)	359 164	423 218	576 344	Cumulative
		NBL	300	304 147	477 265	624 408	Project + Cumulative
		SBL	100	147 84	178 100	217 165	Existing + Project + Cumulative
20	Whitewood Road and Baxter Road	NBL	215	232 80	255 113	469 263	Project + Cumulative

Source: Appendix I.

Notes: *Impacts determined using 95th percentile queues. A queuing impact is determined if the project causes the calculated 95th percentile queue length on public streets to exceed the existing or planned storage capacity by more than 25 feet. For storage lanes that are already deficient without the project, a significant queuing impact is determined if the project increases the calculated 95th percentile queue length by more than 25 feet. Average queues provided for information.

¹ The City recently completed a project to extend this left turn storage to 250 feet.

Boldface type indicates the 95th percentile queue on public streets exceeds the available storage by 25 feet or more or by more than 25 feet beyond previous queues for locations that already exceed available storage.

A mitigation approach was developed for queuing impacts given their potential to influence traffic operations. Queuing impacts were determined to be significant and mitigation was identified for queues where the 95th-percentile queue length exceeds the storage length by more than 25 feet. For storage lanes that are already deficient without the project, a queuing impact was determined to be significant and mitigation was identified if the project increases the calculated 95th-percentile queue length by at least 25 feet. Therefore, a project impact is considered mitigated if the queues are reduced to within 25 feet of the storage available or within 25 feet of the already deficient queue occurring under existing conditions. Each of these impacted intersections are discussed below.

Nutmeg Street and Clinton Keith Road

This is an existing, project, and Cumulative Condition impact. The westbound and southbound left turn queues do not meet standards under existing conditions during the weekday PM peak hour. The project impact occurs during the Saturday midday peak hour for the westbound left turn and in both the weekday PM peak hour and Saturday midday peak hour for the southbound left turn. The cumulative queuing conditions impact occurs during both the weekday PM peak hour and the Saturday midday peak hour for the westbound and southbound left turns. As signal coordination was kept constant between the existing and 2021 Project Completion conditions, optimizing signal timing at the intersection would reduce queues to within 25 feet of existing conditions for the project condition and would reduce impacts to less than significant. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change; no mitigation is required and the project would have a less-than-significant impact at this location.

The cumulative impact would require optimizing signal timing and restriping the westbound and southbound left turns to provide additional storage. Queues for the weekday PM peak hour can be reduced to 524 feet for the westbound left and 161 feet for the southbound left with optimized signal timing. The existing weekday PM peak hour queue is 532 feet; therefore, the queue of 524 feet is less than significant. Queues for the Saturday midday peak hour would be 315 feet for the westbound left and 116 feet for the southbound left with optimized signal timing. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change. After optimization of signal timing, the westbound left turn lane would need to be extended by 75 feet to 300 feet and the southbound left turn lane would be extended by 100 feet to 150 feet to accommodate the remaining queues. The project applicants will pay a fair-share contribution toward this work (**MM-TRAF-8**) with the project fair share calculated for each turn movement per the fair-share methodology discussed earlier. While this is feasible, timing of the implementation cannot be guaranteed by project build-out. As such, this impact is significant and unavoidable.

California Oaks Road and Clinton Keith Road

There are existing, project, and Cumulative Condition queuing impacts at this location. The westbound and northbound left turn queues do not meet the thresholds under existing conditions during the weekday PM peak hour. The westbound left turn also does not meet thresholds under existing conditions during the Saturday midday peak hour. The project queuing impact occurs during the weekday PM peak hour for the westbound and northbound left turns and during the Saturday midday peak hour for the westbound left turn. Mitigation for LOS impacts requires striping a third eastbound through/right turn lane and optimizing signal detection by installing signal detection loops (**MM-TRAF-1**). With implementation of **MM-TRAF-1**, queues for the weekday PM peak hour can be reduced to 810 feet for the westbound left and 205 feet for the northbound left turn lane. With implementation of **MM-TRAF-1** and implementation of signal optimization, the westbound left queue is reduced to within 25 feet of the base condition (797 feet under existing conditions), and the impact is less than significant. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change. A current City CIP project has recently extended the northbound left turn lane storage to 250 feet, reducing these impacts to less than significant. Therefore, project impacts are less than significant.

Under Cumulative Conditions, queuing impacts occur for the westbound left turn and the westbound left turn queues continue to increase during both peak hours. Providing 200 feet of additional storage (**MM-TRAF-9**) along with signal timing optimization will accommodate the westbound left turn queues during the critical weekday PM peak. With implementation of **MM-TRAF-9**, the project applicants will contribute a proportional share to extend the available westbound left turn storage by an additional 200 feet (for a total of 420 feet of storage), which, together

with the regulatory signal timing optimization, would mitigate this impact to less than significant. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change. However, as complete funding for the mitigation cannot be guaranteed by project build-out, the impact is considered significant and unavoidable.

Greer Road/Murrieta Oaks Avenue and Clinton Keith Road

Project and Cumulative Conditions queuing impacts occur at this location. The project queuing impact occurs during the Saturday midday peak hour for the southbound left turn. Providing an additional 50 feet of storage for a total storage capacity of 200 feet would accommodate project queues (**MM-TRAF-2**). With this mitigation in place, the project impact is considered mitigated and less than significant.

The cumulative impact occurs during the weekday PM and Saturday midday peak hours for the westbound left turn. As part of improvements at adjacent intersections, signal coordination was applied at this intersection. The signal timing optimization and signal coordination reduces westbound left turn queues to less than significant (156 feet). The City is currently implementing signal coordination and timing along Clinton Keith Road and would routinely update timing plans as traffic volumes change; no mitigation is required and the project would have a less-than-significant impact at this westbound left turn location. Providing additional storage for the southbound left turn to mitigate project impacts at the southbound left turn lane (**MM-TRAF-2**) results in the cumulative impact being mitigated and less than significant.

Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road

This is a cumulative impact for the eastbound left turn and an existing, project, and cumulative impact for the westbound left turn. The project queuing impact occurs during the weekday PM and Saturday midday peak hours for the westbound left turn. With signal timing optimization, westbound queues can be reduced to 221 feet for the weekday PM peak hour and 226 feet for the Saturday midday peak hour. Providing an additional 100 feet of storage for a total storage capacity of 250 feet would accommodate project queues (**MM-TRAF-3**). This mitigation is feasible. With standard City signal optimization and implementation of **MM-TRAF-3**, the project level queuing impact at this intersection is mitigated and less than significant.

Under cumulative conditions, the westbound left turn queues continue to increase during the weekday PM and Saturday midday peak hours. With signal timing optimization and coordination, westbound queues can be reduced to 363 feet for the weekday PM peak hour and 332 feet for Saturday midday peak hour. Providing an additional 200 feet of storage for a total storage capacity of 350 feet would accommodate cumulative queues (**MM-TRAF-6**) and reduce westbound left turn queue impacts to less than significant. With implementation of **MM-TRAF-6**, the project would have a less-than-significant impact at this location.

While implementation of **MM-TRAF-6** is feasible, timing of implementation cannot be guaranteed by project build-out. As such, the impacts at the westbound left turn queue are considered significant and unavoidable impacts. The City will create a CIP project for this improvement and the project applicants will contribute a proportional fair-share contribution as described in **MM-TRAF-6**. As this is a cumulative impact, the project fair share is calculated for each turn movement per the fair-share methodology discussed earlier.

The eastbound left turn is also impacted under cumulative conditions. However, optimizing signal timing and coordination at the intersection by the City would reduce eastbound left turn queues to 100 feet, which can be accommodated in the existing 150-foot pocket, so no impact would occur. The City is currently implementing signal coordination and optimization along Clinton Keith Road and would routinely update timing plans as traffic volumes change; no mitigation is required and this impact would be less than significant.

I-215 SB Ramps and Clinton Keith Road

This is a Cumulative Conditions impact. The cumulative impact occurs during the Saturday midday peak hour for the eastbound right turn. As part of LOS mitigation measures at adjacent intersections, signal coordination was applied at this intersection. The signal timing optimization and signal coordination reduces the eastbound right turn queue to 449 feet. A potential mitigation measure would provide additional storage by extending the right turn pocket; however, space is not available to extend the turn lane given the spacing with the adjacent intersection. Therefore, the cumulative impact is considered significant and unavoidable.

Creighton Avenue and Clinton Keith Road***With Creighton Avenue Access***

This is a Cumulative Conditions impact. The cumulative impact occurs during the weekday PM and Saturday midday peak hours for the eastbound left turn. Construction of a second eastbound left turn lane would provide an additional storage and throughput at the signal, reducing the weekday PM peak hour queue to 202 feet and the Saturday midday peak hour queue to 247 feet; this would result in a less-than-significant impact. However, as indicated above, access to the project site from the eastbound left turn lane at this intersection would be restricted in the absence of construction of this second left turn lane. Therefore, in the absence of this left turn lane, which would reduce impacts to less than significant, the project would not contribute trips at this intersection.

Without Creighton Avenue Access

This is a Cumulative Conditions impact. Without the Creighton Avenue access to the project, queues are lower at this intersection; however, queues are expected to continue to exceed storage capacity beyond the threshold of significance. A second eastbound left turn lane would provide additional storage and throughput, reducing the weekday PM peak hour queue to 186 feet and the Saturday midday peak hour queue to 165 feet. The cumulative impact is therefore considered mitigated and less than significant. As this is a cumulative impact, the project fair share is calculated for each turn movement per the fair-share methodology discussed earlier. However, as the project does not contribute trips to the movement in the “without Creighton Avenue access” scenario, the project would not be required to contribute to this improvement.

High School West Driveway/Warm Springs Parkway and Clinton Keith Road***With Creighton Avenue Access***

This is a project and a Cumulative Conditions impact. The project queuing impact occurs during the Saturday midday peak hour for the eastbound left turn. Providing an additional 70 feet of storage for a total storage capacity of 275 feet per lane would accommodate project queues (**MM-TRAF-4**). As this intersection is not yet built, the City CIP project for this intersection has accommodated this additional storage and will be completed by 2021. The project impact is therefore considered mitigated and less than significant.

Under Cumulative Conditions, the eastbound left turn queues continue to increase during the weekday PM and Saturday midday peak hours. Providing an additional 30 feet of storage for a total storage capacity of 305 feet in each left turn lane would accommodate cumulative queues (**MM-TRAF-7**) and would mitigate this impact to less than significant. As indicated in **MM-TRAF-7**, the project applicants will contribute a proportional share to fund implementation of this mitigation measure. As this intersection is not yet built, the City CIP project for this

intersection can accommodate this additional storage and will be completed by 2021. The cumulative impact is therefore considered mitigated and less than significant.

Without Creighton Avenue Access

This is a project and Cumulative Conditions impact. Without the Creighton Avenue access, the project contributes additional trips to the eastbound left turn and queues increase with project impacts during the weekday PM and Saturday midday peak hours. Providing an additional 90 feet of storage for a total storage capacity of 295 feet per lane would accommodate project queues (**MM-TRAF-4**). As this intersection is not yet built, the City CIP project for this intersection has accommodated this additional storage and will be completed by 2021. The project impact is therefore considered mitigated and is less than significant.

Under Cumulative Conditions without the Creighton Avenue access, the project contributes additional trips to eastbound left turn and queues increase with project impacts during the weekday PM and Saturday midday peak hours. Providing an additional 45 feet of storage for a total storage capacity of 340 feet per lane (**MM-TRAF-7**) would accommodate cumulative queues. As indicated in **MM-TRAF-7**, the project applicants will contribute a proportional share to fund implementation of this mitigation measure. As this intersection is not yet built, the City CIP project for this intersection can accommodate this additional storage and will be completed in 2021. The cumulative impact is therefore considered mitigated and less than significant.

Bronco Way and Clinton Keith Road

This is a Cumulative Conditions impact. The cumulative queuing impact occurs during the weekday PM and Saturday midday peak hours for the eastbound left turn. With signal timing optimization and coordination, eastbound queues can be reduced to 164 feet for the weekday PM peak hour and 271 feet for the Saturday midday peak hour. The Saturday midday peak hour queues would continue to exceed storage capacity by 71 feet. Mitigation would provide additional storage by extending the right turn pocket. The project applicants will contribute a proportional fair share to extending the turn lane by 71 feet (**MM-TRAF-10**). However, the full funding and implementation of this mitigation cannot be guaranteed by project build-out so the impact is significant and unavoidable.

Whitewood Road and Clinton Keith Road

There are existing, project, and Cumulative Conditions queuing impacts at this intersection. The southbound left turn queue does not meet the threshold under existing conditions. The project queuing impact occurs during the weekday PM peak hour for the northbound left turn and southbound left turn. As indicated in **MM-TRAF-5**, the project applicants will extend the existing northbound and southbound left turn lanes at the Whitewood Road and Clinton Keith Road intersection to the maximum extent feasible within the available right-of-way and available spacing between the next intersections; however, this will not fully mitigate the project impact. The City has an existing CIP project to provide dual northbound and southbound left turn lanes at this intersection, which would improve intersection operations and accommodate the projected queues; however, this project will require additional right-of-way and cannot be guaranteed to be completed by the project build-out year. Therefore, the impact is considered significant and unavoidable even with implementation of **MM-TRAF-5**.

In addition, there is a Cumulative Conditions impact for the eastbound left turn lane. Providing an additional 35 feet of storage for each eastbound left turn lane for a total storage capacity of 570 feet (285 feet in each turn lane) would accommodate the cumulative condition queues (**MM-TRAF-11**). As this is a cumulative impact, the project fair share is calculated for each turn movement per the fair share methodology discussed earlier.

Whitewood Road and Baxter Road

This is a Cumulative Conditions impact. Under cumulative conditions, the northbound left turn queue continues to increase during the weekday PM and Saturday midday peak hours. Restriping the existing northbound turn lane with an additional 285 feet of storage (for a total of 500 feet) (**MM-TRAF-12**) would accommodate cumulative queues. The project applicants will pay a fair-share contribution with respect to the mitigation described in **MM-TRAF-12**. Although implementation of **MM-TRAF-12** would reduce cumulative impacts to less than significant, the cumulative impact is considered significant and unavoidable as full funding and implementation of the restriping cannot be guaranteed by project build-out.

Transit, Pedestrian and Bicycle Facilities

Riverside Transit Routes 61 and 23 provide service on Clinton Keith Road via a bus stop at the intersection of Clinton Keith Road and the main entrance to the Vista Murrieta High School. The services would not be affected by the project. The existing bus stop is located with access considerations to Vista Murrieta High School and is being relocated by the shopping center south of the project in conjunction with the construction of the initial segment of Warm Springs Parkway. The project would not further alter the existing route. In addition, the addition of the Warm Springs Road signal would minimally affect operations along the corridor, since the Clinton Keith Road corridor would operate with coordinated signals, with priority given to east/west travel. Thus, the project site would be served by the existing bus system, allowing patrons the option of accessing the project site through public transit. The availability of alternative transportation options to access the project site aids in maintaining an acceptable LOS in the study area. Overall, the project would not create a significant impact to Riverside Transit Route 61 or 23.

The City's General Plan Circulation Element identifies existing and proposed bikeways and trails. Currently, the closest existing bikeway to the project site is a Class II bike lane along Whitewood Road, south of Clinton Keith Road. Proposed bikeways near the project site include proposed Class II bike lanes along Clinton Keith Road, Whitewood Road (north of Clinton Keith Road), and Linnel Lane, as well as a proposed Class II bike lane that crosses through the project site. The proposed bike lane is located along the same route as the proposed Warm Springs Parkway that would be constructed in association with the project. A Class II bike lane would be included in the design of Warm Springs Parkway, and there would be no impact to existing or proposed bikeways. The retail center will install bike racks at each building.

Pedestrian circulation would continue to be provided via existing public sidewalks and walkways. The project would provide sidewalks on Warm Springs Parkway along the project site, consistent with City guidelines. The project would not affect existing sidewalks or crosswalks along Clinton Keith Road, and would provide additional crosswalk facilities across Clinton Keith Road at the signalized Warm Springs Road intersection and at the Vista Murrieta High School entrance. The project would also provide pedestrian connections onto the site at the south right-in/right-out driveway and at the signalized primary access point. The pedestrian facilities provided on site are consistent with City guidelines.

The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycles, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Impacts related to transit, bicycle, and pedestrian facilities would be less than significant.

Riverside County Congestion Management Program

The RCTC is designated as the congestion management agency to oversee the Congestion Management Program. Recently, the RCTC approved modification of the Congestion Management Program Land Use Coordination Element, which included elimination of the TIA process and replacement with an Enhanced Traffic Monitoring System.

Therefore, a TIA is no longer required, but local jurisdictions are required to report deficient facilities (locations that cannot be mitigated to LOS E or better) along the Congestion Management Program network, which are identified in traffic impact studies prepared for local agencies. The only Congestion Management Program facility in the study area is I-215. As previously discussed, the I-215 corridor generally operates below the target LOS standards under the 2035 Build-Out Conditions. However, project impacts to this facility were found to be less than significant because the project would contribute minimal traffic to the mainline corridor. The mainline corridor would operate at an unsatisfactory LOS E or F regardless of project traffic, and project traffic would not significantly worsen LOS. Therefore, the project would not conflict with the Riverside County Congestion Management Program and impacts would be less than significant.

Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)?

Significant and Unavoidable Impact. CEQA Guidelines Section 15064.3(b) focuses on newly adopted criteria (vehicle miles traveled [VMT]) for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology.

Section 15064.3(b)(1) for land use projects would apply to the proposed project; however, as indicated above, this section does not become operative until the earlier of July 1, 2020, or the adoption by the jurisdiction of VMT standards. The County of Riverside and City of Murrieta have not yet adopted local VMT criteria; therefore, a VMT analysis for the proposed project has not been prepared at this time.

Vehicle Miles Traveled (Informational Only)

As described in Section 4.2, Air Quality, of this EIR, the proposed project is consistent with the applicable regional transportation plan/sustainable communities strategy (RTP/SCS). Specifically, the proposed project is consistent with the City's existing General Plan Commercial designation and with the existing Regional Commercial zoning for the project site. As such, the project is also consistent with the RTP/SCS for the region.⁹ Thus, the project would not be considered to have a significant impact with respect to consistency with the RTP/SCS for the region.

The proposed project includes both local serving retail and regional serving retail uses. The Costco portion of the project is considered regional serving, while portions of the Vineyard II project would generally be considered local serving retail in that they provide goods and services of a local nature. As indicated in the OPR Technical Advisory and WRCOG Analysis, local serving retail is generally presumed to have less than significant impact. Nonetheless, as the project as a whole and the Costco and Vineyard II project individually each exceeds the 50,000 square-foot threshold identified for regional serving retail, the project is considered to be a regional serving retail project.

The proposed Costco warehouse will operate on a members-only basis. There are currently existing warehouses in Lake Elsinore and Temecula within the trade area of the proposed Costco. It is anticipated that up to eighty percent (80%) of Costco members who will shop at the new warehouse are currently shopping at existing Costco warehouses. As the proposed Costco has been purposely sited to be closer to the homes of those members in the trade area, it is expected the trip lengths, and VMT, of these members will decrease as compared to existing conditions. Nonetheless, to provide a more conservative analysis, the air quality and GHG analyses assumed that all trips to the Costco would be new and did not reflect any VMT reduction. The project is projected to result in annual operational VMT of 36,481,323 for Costco and 16,309,077 for Vineyard II. As this is a net increase in VMT

⁹ The City General Plan Land Use Map designates the project site as Commercial (City of Murrieta 2011). The City's Zoning Map shows the site as being zoned Regional Commercial (City of Murrieta 2014). The project would be consistent with the current zoning and land use designation. The RTP/SCS incorporates existing zoning and land use designations of the city. As the project is consistent with existing General Plan and zoning it is considered consistent with SCS/RTP.

as compared with existing conditions, the project would be conservatively be considered for informational purposes to have a significant impact with respect to operational VMT related to net increase in VMT.

Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. Project driveways and internal circulation elements have been designed to reduce vehicular and pedestrian conflicts, enhance safety, and increase line of sight. All intersections, circulation improvements, and access to the site would be designed consistent with City roadway standards and would not create a hazard for vehicles, bicycles, or pedestrians entering or exiting the site. Specifically, Creighton Avenue would be designed with one lane northbound from Clinton Keith Road for vehicles turning left onto Creighton Avenue.

Access to the site would be designed according to City standards and would not create sharp curves or dangerous intersections. Based on review of the preliminary site plan, the overall layout would not create any unsafe vehicle-pedestrian conflict points. Turning radii and drive aisles widths are designed for passenger cars, ambulances, shuttles, service/delivery trucks and trash trucks. The alignment, spacing and throating of the project driveways is adequate and the circulation around the building is adequate with sufficient sight distance along the drive aisles. The proposed site plan is subject to approval by the City and the City Fire Department to ensure City roadway standards are met and no hazards are created or increased by the project.

Since the project would be consistent with City roadway standards, and for the reasons described above, the project would not increase hazards due to a design feature or incompatible uses.

Would the project result in inadequate emergency access?

Less-Than-Significant Impact. The project would result in the development of a currently undeveloped area, including the development of site access. The project would involve the construction of new structures, roadways, and intersections and would generate new trips to and from the project site. The project would be required to comply with the City's development review process, including review for compliance with the City's Development Code and compliance with applicable emergency access standards that would facilitate emergency vehicle access during project construction and operation. The project applicants would be required to design, construct, and maintain structures, roadways, and facilities to comply with applicable local, regional, state, and federal requirements related to emergency access. Drive aisles, turning radii, and all four access points would be designed with adequate emergency access. The proposed site plan is subject to approval by the City and the City's Fire Department. Further, the City and the City's Fire Department would review any modifications to existing roadways to ensure that adequate emergency access or emergency response would be maintained. Additionally, emergency response procedures would be coordinated through the City in coordination with the police and fire departments. Adherence to these requirements would ensure that potential impacts related to this issue remain below a level of significance, and no mitigation is required.

4.13.5 Mitigation Measures

Project Impacts

MM-TRAF-1 California Oaks Road and Clinton Keith Road: The project applicants shall improve the intersection of California Oaks Road and Clinton Keith Road to add a third eastbound through lane between California Oaks Road and Nutmeg Street with a receiving lane east of California Oaks Road and signal detection loops at California Oaks Road.

- MM-TRAF-2 Greer Road/Murrieta Oaks Avenue and Clinton Keith Road:** The project applicants shall restripe an additional 50 feet of storage for the existing southbound left turn lane for a total of 200 feet of storage at the intersection of Greer Road/Murrieta Oaks Avenue and Clinton Keith Road.
- MM-TRAF-3 Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road:** The project applicants shall provide an additional 100 feet of storage for the westbound turn lane for a total of 250 feet of storage at the intersection of Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road.
- MM-TRAF-4 High School West Driveway/Warm Springs Parkway and Clinton Keith Road:** If Creighton Avenue access is provided at project buildout (2021), an additional 70 feet of storage shall be added to each existing eastbound left hand turn lane at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road (with Creighton Avenue access) for a total of 275 feet of storage. If Creighton Avenue access is not provided at project buildout (2021), an additional 90 feet of storage in each eastbound left hand turn lane (without Creighton Avenue access) shall be added for a total of 295 feet of storage at this intersection. The City has updated the intersection design plans to add this additional storage.
- MM-TRAF-5 Whitewood Road and Clinton Keith Road:** The project applicants shall extend the existing northbound and southbound left turn lanes at the Whitewood Road and Clinton Keith Road intersection to the maximum extent feasible within the available right of way and available spacing between the intersections and per the City of Murrieta requirements, and pay a fair share contribution to existing City CIP 8389 to add a second northbound and southbound left turn lane (to provide dual left turn lanes).

Cumulative Impacts

- MM-TRAF-6 Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road:** Per the City of Murrieta requirements, the project applicants shall pay a fair share contribution (1) to restripe an additional eastbound travel lane on Clinton Keith Road between California Oaks Road and for approximately 1,100 linear feet to create an additional eastbound travel lane, (2) add signal detection, and (3) provide an additional 200 feet of storage for the existing westbound left turn land for a total of 350 feet of storage (and removal of the raised median as required for that extension) at the intersection of Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road.
- MM-TRA-7 High School West Driveway/Warm Springs Parkway and Clinton Keith Road:** If Creighton Avenue access is provided at project buildout (2021), the project applicants shall, per the City of Murrieta requirements, pay a fair share contribution to the City to extend the existing left hand turn lane pocket at the High School Driveway/Warm Springs Parkway and Clinton Keith Road intersection for a total of 315 feet of storage. If Creighton Avenue access is not provided at project buildout (2021), the project applicants shall, per the City of Murrieta requirements, pay a fair share contribution to the City to extend the existing left hand turn lane pocket at the High School West Driveway/Warm Springs Parkway and Clinton Keith Road intersection for a total of 345 feet of storage. The City has updated the intersection design plans to add this additional storage.

- MM-TRAF-8 Nutmeg Street and Clinton Keith Road:** Per the City of Murrieta requirements, the project applicants shall pay a fair share contribution for improvements to Nutmeg Street and Clinton Keith Road to add 75 feet of storage to the existing westbound left turn lane for a total of 300 feet of storage, and an additional 100 feet of storage to the existing southbound left turn lane for a total of 150 feet of storage.
- MM-TRAF-9 California Oaks Road and Clinton Keith Road:** Per the City of Murrieta requirements, the project applicants shall pay a fair share contribution to extend the existing westbound left turn lane by 200 feet for a total of 420 feet of storage.
- MM-TRAF-10 Bronco Way and Clinton Keith Road:** Per the City of Murrieta requirements, the project applicants shall pay a fair share contribution to extend the eastbound left turn lane by 71 feet at the intersection of Bronco Way and Clinton Keith Road for a total storage of 271 feet.
- MM-TRAF-11 Whitewood Road and Clinton Keith Road:** Per the City of Murrieta requirements, the project applicants shall pay a fair share contribution to extend the dual left turn lanes by 35 feet each for a total of 285 feet in each eastbound left turn lane.
- MM-TRAF-12 Whitewood and Baxter Road:** Per the City of Murrieta requirements, the project applicants shall pay a fair share contribution to provide 285 feet of additional storage for the northbound left turn lane for a total of 500 feet of storage at the intersection of Whitewood Road and Baxter Road.

4.13.6 Level of Significance After Mitigation

Salida Del Sol and Clinton Keith Road: The project and cumulative LOS impacts remain significant and unavoidable because full funding for the improvements cannot be guaranteed by project build-out and the roadway project is outside the City's control to implement. The project applicants will contribute to the TUMF, which funds countywide improvements, including the Clinton Keith Road corridor.

Elizabeth Lane and Clinton Keith Road: The project and cumulative LOS impacts remain significant and unavoidable because full funding for the improvements cannot be guaranteed by project build-out and the roadway project is outside the City's control to implement. The project applicants will contribute to the TUMF, which funds countywide improvements, including the Clinton Keith Road corridor.

California Oaks Road and Clinton Keith Road: With the implementation of the proposed **MM-TRAF-1**, the project LOS and queuing impacts at California Oaks Road and Clinton Keith Road would be less than significant. Despite implementation of **MM-TRAF-9**, this cumulative queuing impact remains significant and avoidable because timing for implementation cannot be guaranteed by project build-out.

Max Gillis Boulevard/Thompson Road and SR-79: The project and cumulative LOS impacts remain significant and unavoidable at this location. Although the project applicants will contribute to the TUMF for future extension, the full funding and implementation is not guaranteed by project build-out and the County is the lead agency so the project is outside the City's control to implement.

Max Gillis Boulevard/Briggs Road/Leon Road: The cumulative LOS impact remains significant and unavoidable at this location. Although the project applicants will contribute to the TUMF for future extension, the full funding and implementation is not guaranteed by project build-out and the County is the lead agency so the project is outside the City's control to implement.

Greer Road/Murrieta Oaks Avenue and Clinton Keith Road: With implementation of **MM-TRAF-2**, the project and cumulative queuing impacts are less than significant.

Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road: With implementation of the proposed **MM-TRAF-3**, the project queuing impact is less than significant. Despite implementation of **MM-TRAF-6**, the cumulative LOS impact to this intersection is significant and unavoidable because the timing of the mitigation cannot be guaranteed by project build-out. Despite implementation of **MM-TRAF-6**, the cumulative queuing impact to this intersection is significant and unavoidable because timing of the mitigation cannot be guaranteed by project build-out.

High School Driveway West/Warm Springs Parkway and Clinton Keith Road: Under both the with Creighton Avenue access and without Creighton Avenue access scenarios, with the implementation of the proposed **MM-TRAF-4** and **MM-TRAF-7**, the project and cumulative impacts at High School West Driveway/Warm Springs Parkway and Clinton Keith Road would be less than significant.

Whitewood Road and Clinton Keith Road: Implementation of **MM-TRAF-11** would mitigate the cumulative queuing impact at the eastbound left turn lane. While the project applicants would implement **MM-TRA-5** to enhance the northbound and southbound left turn lanes at this intersection, right-of-way restrictions prohibit extending the turn lanes to the total length needed and full funding to acquire additional right-of-way and to provide dual turn lanes is not guaranteed by project build-out. Accordingly, the cumulative LOS impact and the project and cumulative queuing impacts remain significant and unavoidable.

Nutmeg Street and Clinton Keith Road: Despite implementation of the proposed **MM-TRAF-8**, full funding for implementation is not guaranteed by project build-out. This cumulative queuing impact remains significant and unavoidable.

I-215 Southbound Ramps and Clinton Keith Road: Cumulative queuing impacts remain significant and unavoidable because it is not possible to extend storage due to right-of-way restrictions and spacing to the adjacent traffic signal.

Bronco Way and Clinton Keith Road: The cumulative condition queuing impact is significant and unavoidable because funding and implementation of **MM-TRAF-10** cannot be guaranteed by project opening.

Whitewood Road and Baxter Road: The cumulative condition queuing impact is significant and unavoidable because the implementation of **MM-TRAF-12** cannot be guaranteed by project build-out.

All project impacts associated with design features, emergency access, and conflicts with adopted policies, plans, or programs regarding public transit, bicycles, or pedestrian facilities would be less than significant, and no mitigation measures would be required.

4.13.7 Cumulative Impacts

Cumulative impacts were considered by analyzing 2021 Cumulative Conditions and 2035 Build-Out Conditions. The related projects in Table 4.13-20 were used to analyze cumulative impacts. As previously discussed, project impacts related to geometric design features; incompatible uses; emergency access; public transportation; bicycle and pedestrian policies; and plans, programs, and facilities would be less than significant, and it is not anticipated that the proposed project, combined with other related projects, would result in a cumulatively considerable impact to these areas.

Intersections

Based on the operational analysis previously discussed, the following intersections are projected to operate at an unacceptable LOS under 2021 Cumulative Conditions:

- Salida del Sol and Clinton Keith Road (intersection operates at LOS E or F under existing conditions; intersection outside of the City's jurisdiction)
- Elizabeth Lane and Clinton Keith Road (intersection operates at LOS E or F under existing conditions; intersection outside of the City's jurisdiction)
- California Oaks Road and Clinton Keith Road
- Bronco Way and Clinton Keith Road
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road
- Creighton Avenue and Clinton Keith Road (with Creighton Avenue access)
- Whitewood Road and Clinton Keith Road
- Max Gillis Boulevard/Briggs Road and Leon Road (intersection outside of the City's jurisdiction)
- Max Gillis Boulevard/Thompson Road and SR-79 (intersection operates at LOS E or F under existing conditions; intersection outside of the City's jurisdiction)

Three of these intersections operate at an LOS E or F under existing conditions: Salida del Sol and Clinton Keith Road, Elizabeth Lane and Clinton Keith Road, and Max Gillis Boulevard/Thompson Road and SR-79. Further, the following intersections are located outside of the City of Murrieta's jurisdiction: Salida Del Sol and Clinton Keith Road, Elizabeth Lane and Clinton Keith Road, Max Gills Boulevard/Briggs Road and Leon Road, and Max Gillis Boulevard/Thompson Road and SR-79 (which is partially in the City). At one of these intersections, Bronco Way and Clinton Keith Road, the impact is resolved with signal timing and coordination. In addition, under 2035 Build-Out Conditions, all intersections analyzed along Warm Springs Parkway and at the I-215 interchange are projected to operate an acceptable LOS with the planned roadway improvements, including lane configurations and traffic control devices.

In the interim, mitigation measures (**MM-TRAF-6** through **MM-TRAF-12**) have been proposed in the form of fair-share payment toward roadway improvements that would help to reduce impacts. However, as discussed in Section 4.13.6, with respect to intersections with significant impacts, since implementation of some of the mitigation measures is outside of the lead agency's jurisdiction or implementation of the roadway improvements cannot be guaranteed by project opening or project build-out, the impacts would be cumulatively considerable and would remain significant and unavoidable even with implementation of mitigation measures.

Queuing

Based on the queuing analysis previously discussed, with Creighton Avenue access the following movements are projected to have significant queuing impacts under 2021 Cumulative Conditions:

- Nutmeg Street and Clinton Keith Road (WBL, SBL)
- California Oaks Road and Clinton Keith Road (WBL)
- Greer Road/Murrieta Oaks Avenue and Clinton Keith Road (WBL)
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road (EBL, WBL)
- I-215 SB Ramps and Clinton Keith Road (EBR)
- Creighton Avenue and Clinton Keith Road (EBL)
- High School West Driveway/Warm Springs Parkway and Clinton Keith Road (EBL)
- Bronco Way and Clinton Keith Road (EBL)
- Whitewood Road and Clinton Keith Road (EBL, NBL, SBL)
- Whitewood Road and Baxter Road (NBL)

Without Creighton Avenue access, the following additional movements are projected to have significant queuing impacts under 2021 Cumulative Conditions:

- Creighton Avenue and Clinton Keith Road (EBL/U)
- High School West Driveway/Warm Springs Parkway and Clinton Keith Road (EBL)

Mitigation measures (**MM-TRAF-6** through **MM-TRAF-12**) have been proposed in the form of fair-share payments toward roadway improvements that would help to reduce cumulative queuing impacts. However, as discussed above, since implementation of some of the mitigation cannot be guaranteed by project opening or project build-out, certain impacts would be cumulatively considerable and would remain significant and unavoidable even with implementation of mitigation measures.

Roadway Segments

All study area roadway segments are projected to operate with acceptable LOS for the 2021 Cumulative Conditions and 2035 Build-Out Conditions, with the exception of the segment of Clinton Keith Road between I-215 northbound ramps and Warm Springs Parkway. Under 2021 Cumulative Conditions, this segment is anticipated to operate at LOS D during Saturday peak hours. The City's General Plan indicates that LOS D is allowed in certain areas, including the North Murrieta Business Corridor and Multiple Use 3 Focus Area, which encompass the project site and study area roadways. Under 2035 General Plan Build-Out Conditions, the same segment of Clinton Keith Road is projected to operate at LOS E on a weekday. However, the City's General Plan acknowledges that certain corridors are projected to exceed the City's performance standard, including Clinton Keith Road. Therefore, the LOS failure on this roadway would not be a cumulatively considerable impact.

Freeway

Under 2035 Build-Out Conditions, the I-215 corridor generally operates below the target LOS D threshold. The future projections indicate that additional capacity is required along the six-lane mainline corridor. The poor performance at ramp merge/diverge areas can also be attributed to overcapacity operations along the mainline. The I-215

Transportation Concept Report recommends expansion of the mainline segment to eight lanes to accommodate the increased demand. The project would contribute minimal traffic to the mainline corridor, and based on the significance criteria, the mainline corridor baseline case operations of LOS E or F would be maintained with the addition of project traffic and traffic associated with related projects.

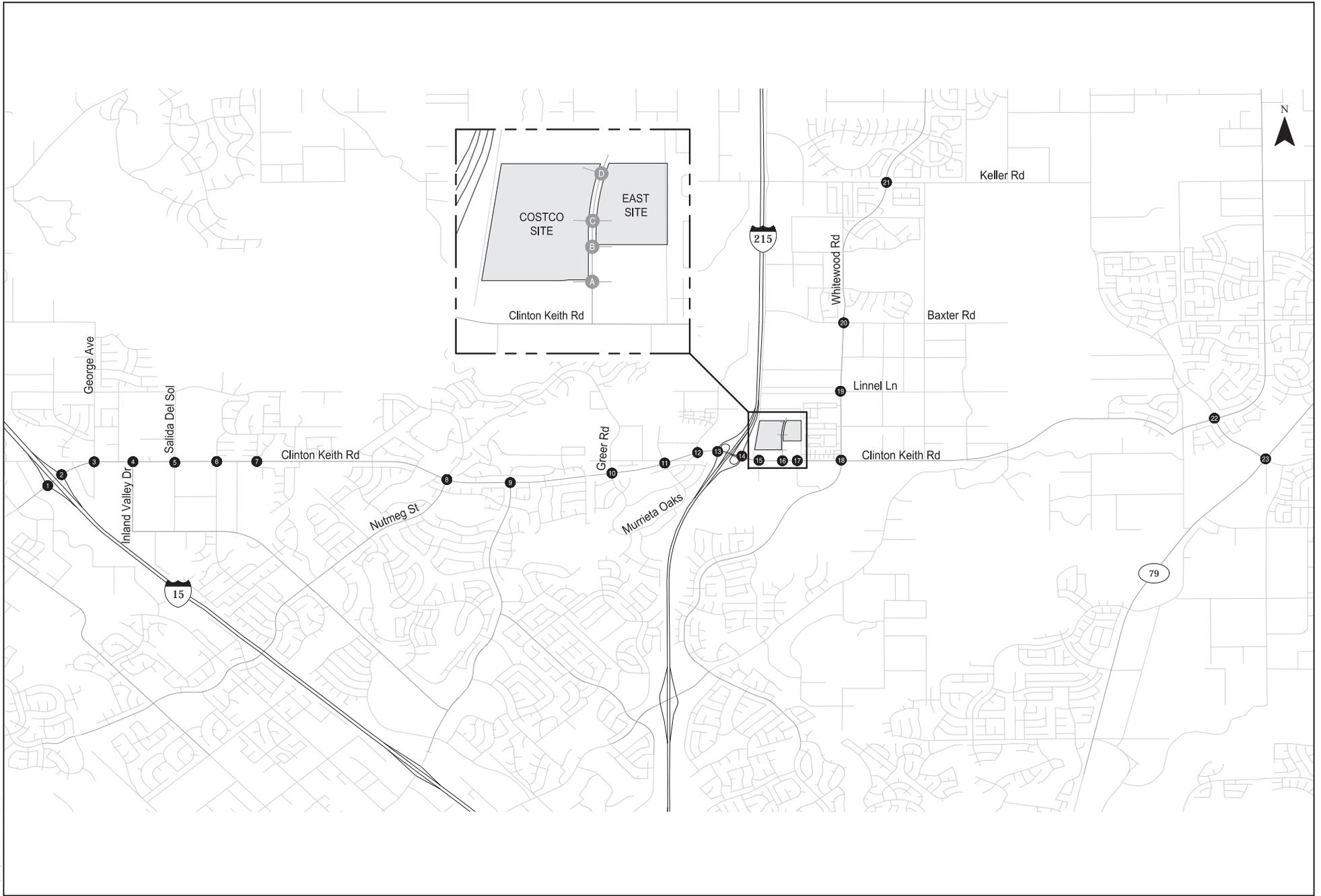
It is assumed that related cumulative projects in the study area would be subject to the same federal, state, and local standards, regulations, and requirements that the project must comply with, which would further reduce the opportunity for cumulative impacts in the broader project area. However, due to the significant and unavoidable impacts to study intersections, the project, in combination with related projects, would result in significant and unavoidable impacts.

Vehicle Miles Traveled Cumulative Impacts (Informational Only)

The VMT of cumulative projects is currently unknown. As indicated above, for purposes of this analysis (and in the absence of a City adopted methodology to determine the cumulative impacts of VMT) the project would have a significant cumulative impact on VMT if it has a significant project-level impact or is not consistent with the 2016-2040 RTP/SCS in terms of development location, density, and intensity. Based on the conclusion above (provided for informational purposes) that the project is presumed to result in a significant impact with respect to VMT due to an increase in net VMT as compared with existing conditions, the project's VMT impact would be considered to be cumulatively considerable.

4.13.8 References Cited

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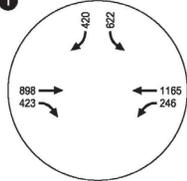


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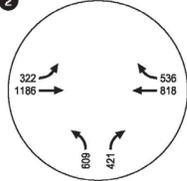
FIGURE 4.13-1
Study Intersections

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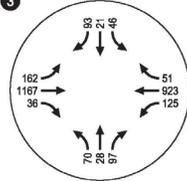
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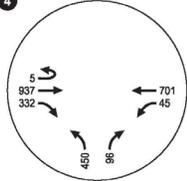
2 I-15 NB Ramps & Clinton Keith Rd



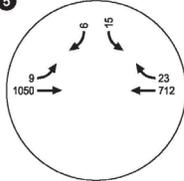
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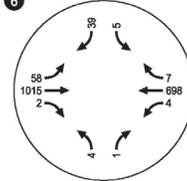
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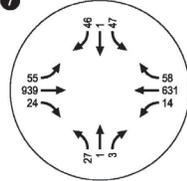
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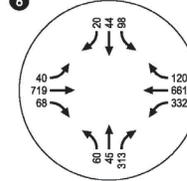
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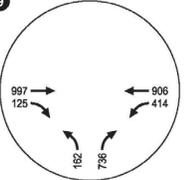
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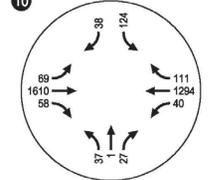
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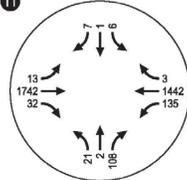
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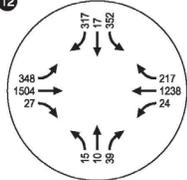
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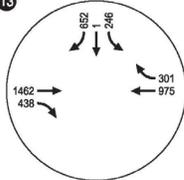
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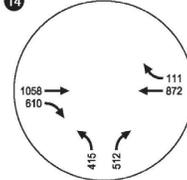
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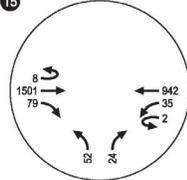
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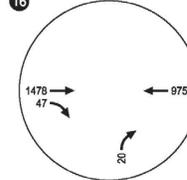
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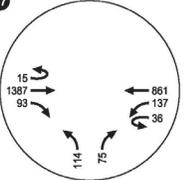
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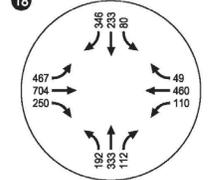
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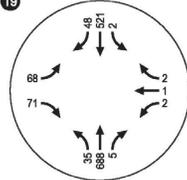
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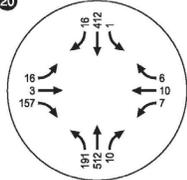
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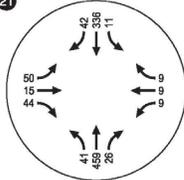
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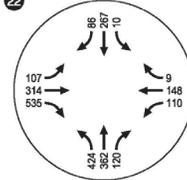
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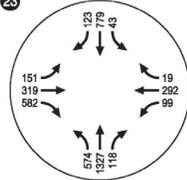
21 Whitewood Rd & Keller Rd



22 Max Gillis Blvd/Briggs Rd & Leon Rd



23 Max Gillis Blvd/Thompson Rd & SR-79



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SOURCE: Kittelson & Associates

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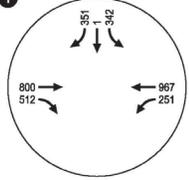
FIGURE 4.13-2

Existing Traffic Volumes Weekday PM Peak Hour

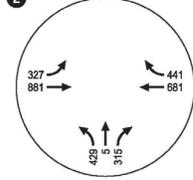
Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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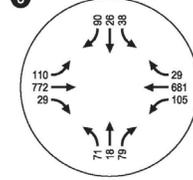
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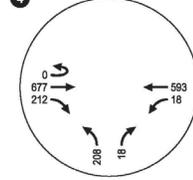
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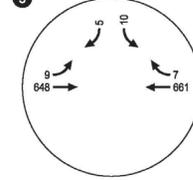
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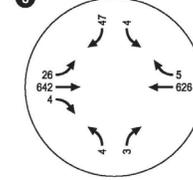
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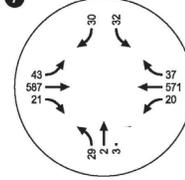
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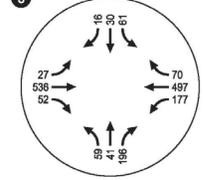
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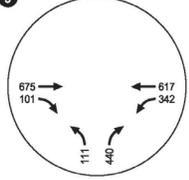
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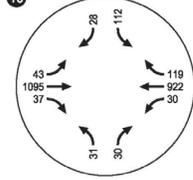
8 Nutmeg St & Clinton Keith Rd



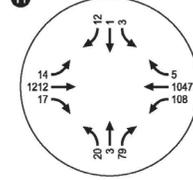
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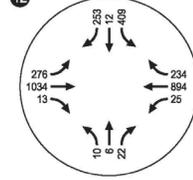
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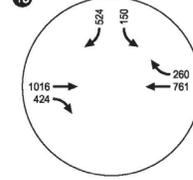
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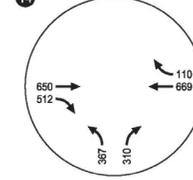
12 McElwain Rd & Clinton Keith Rd



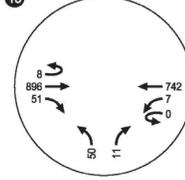
13 I-215 SB Ramps & Clinton Keith Rd



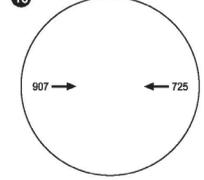
14 I-215 NB Ramps & Clinton Keith Rd



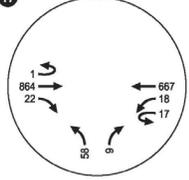
15 Creighton Ave & Clinton Keith Rd



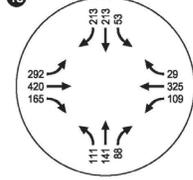
16 High School West Dwy & Clinton Keith Rd



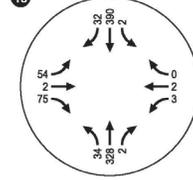
17 Vista Murrieta HS & Clinton Keith Rd



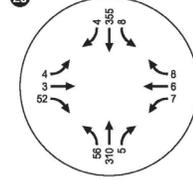
18 Whitewood Rd & Clinton Keith Rd



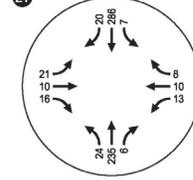
19 Whitewood Rd & Linnel Ln



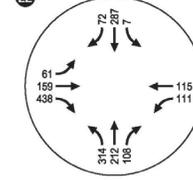
20 Whitewood Rd & Baxter Rd



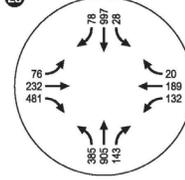
21 Whitewood Rd & Keller Rd



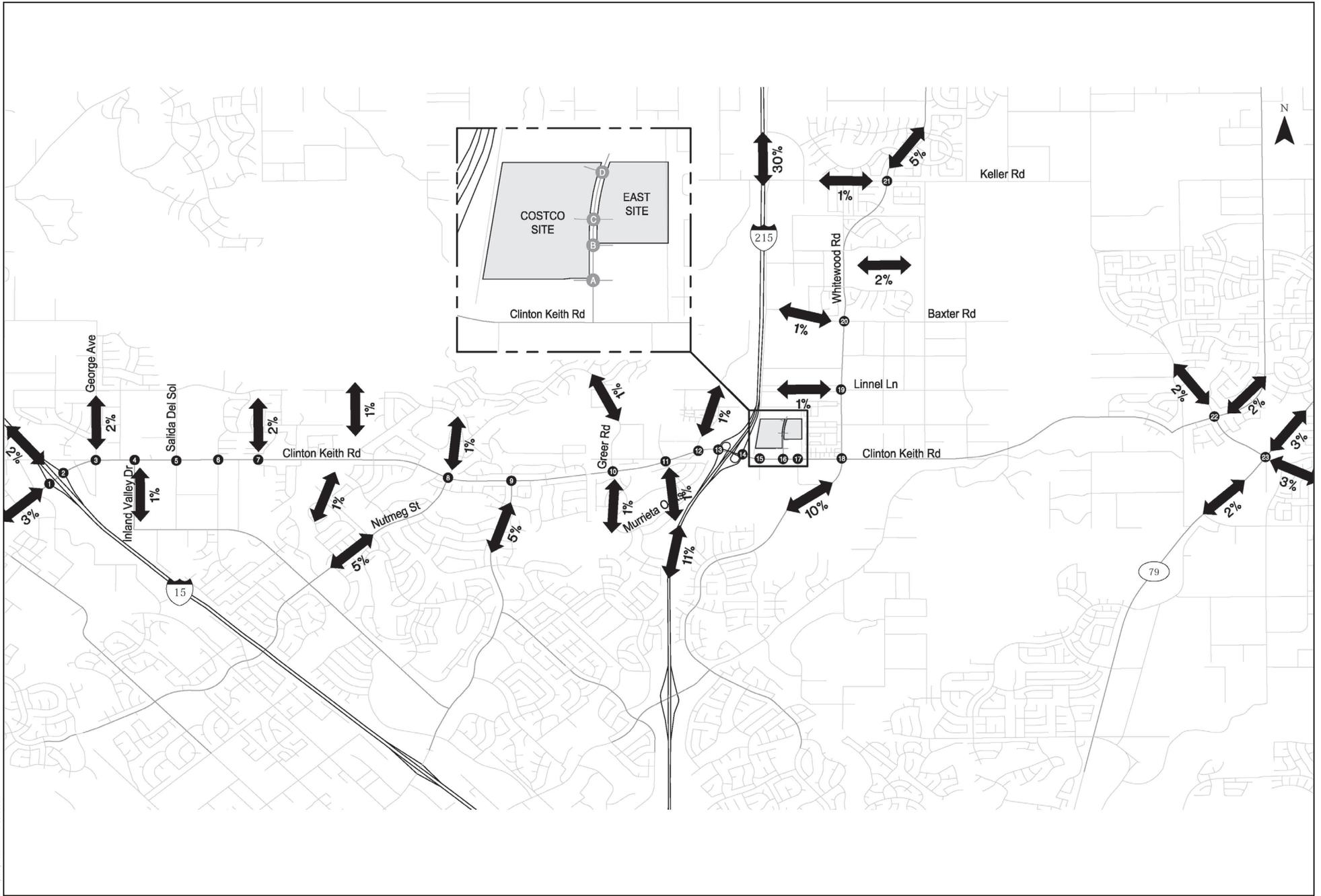
22 Max Gillis Blvd/Briggs Rd & Leon Rd



23 Max Gillis Blvd/Thompson Rd & SR-79



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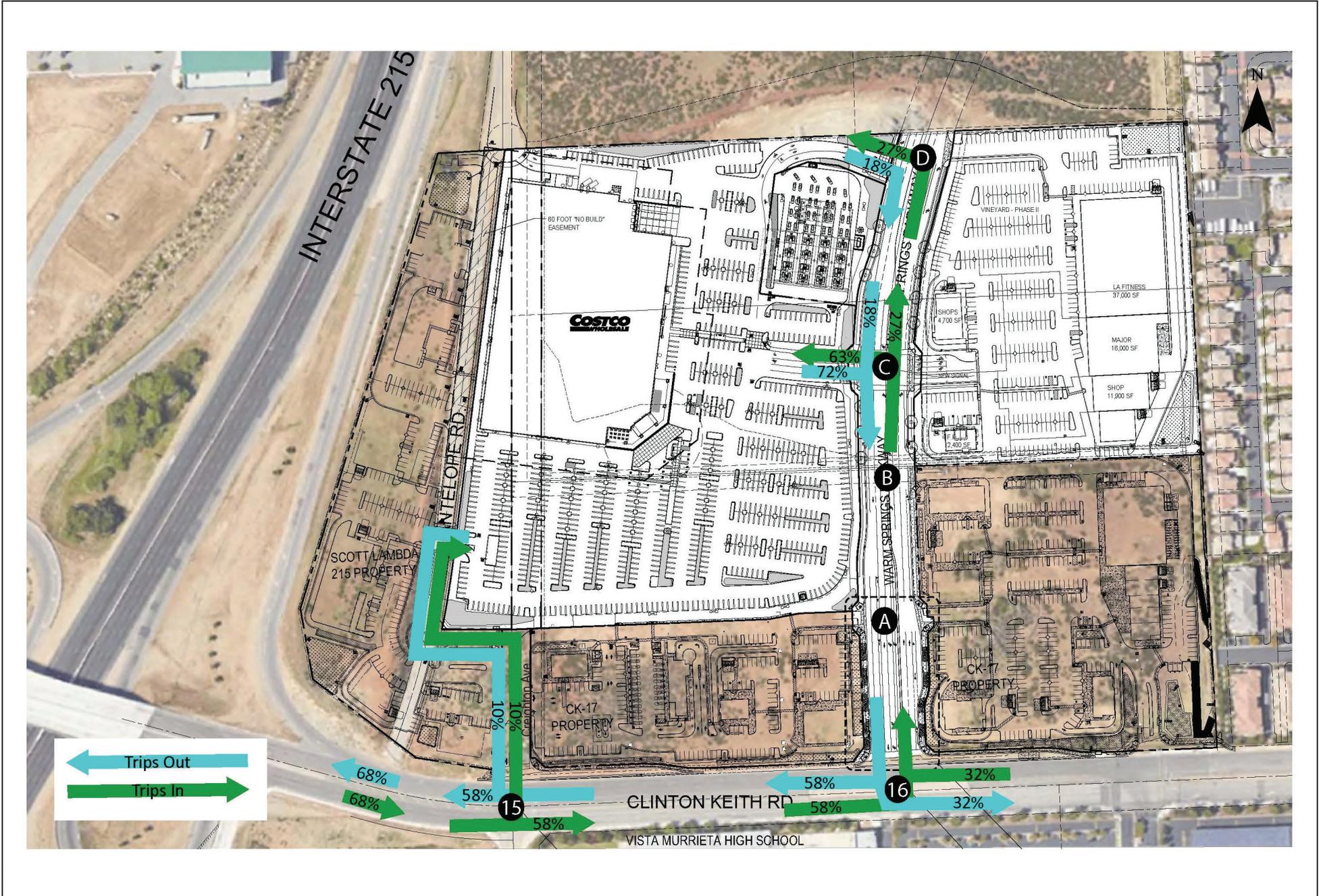
SOURCE: Kittelson & Associates

FIGURE 4.13-4

Trip Distribution Costco Project

Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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SOURCE: Kittelson & Associates

FIGURE 4.13-5

Costco Trip Distribution at Site Accesses with Creighton Avenue Access

Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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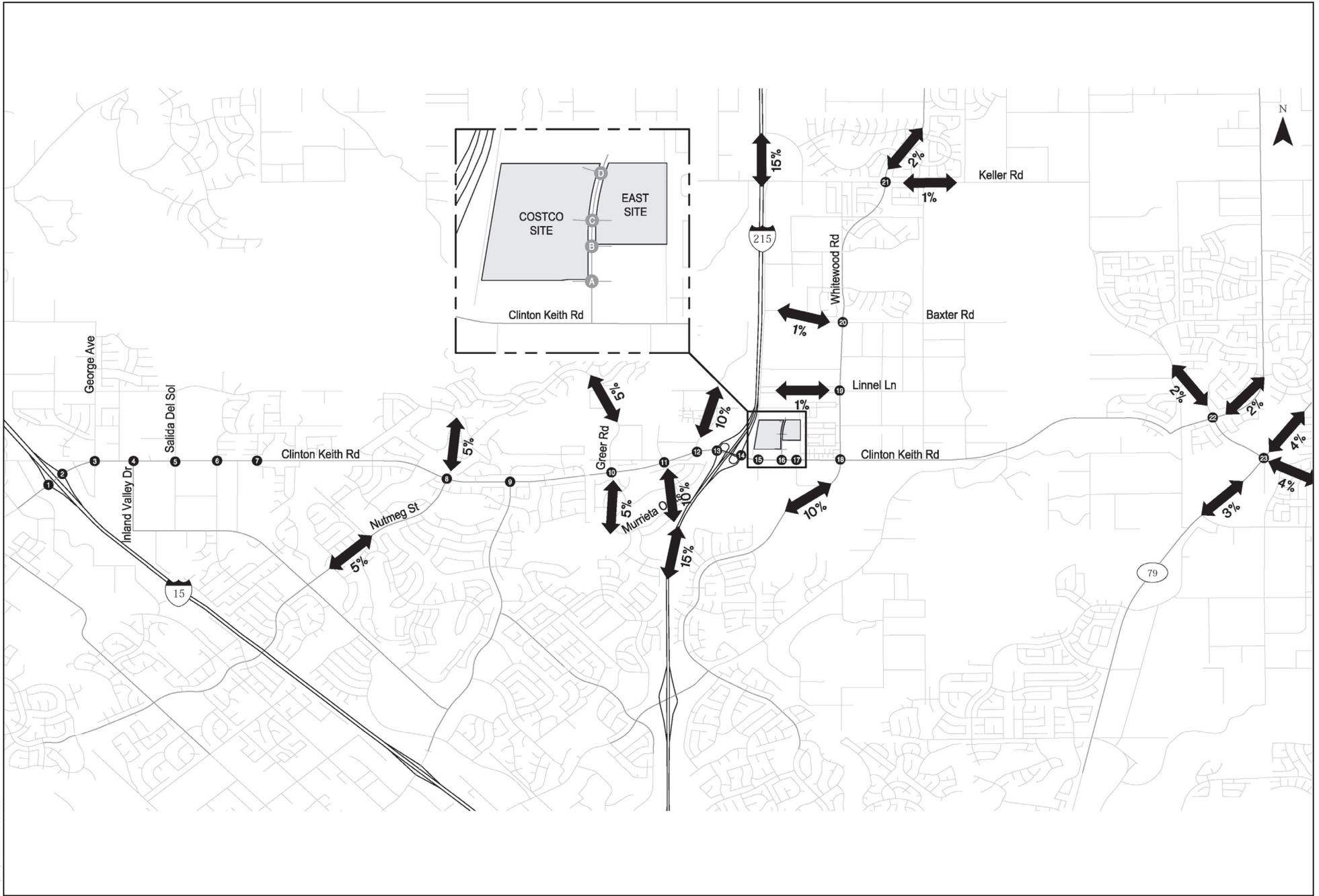
SOURCE: Kittelson & Associates

FIGURE 4.13-6

Costco Trip Distribution at Site Accesses without Creighton Avenue Access

Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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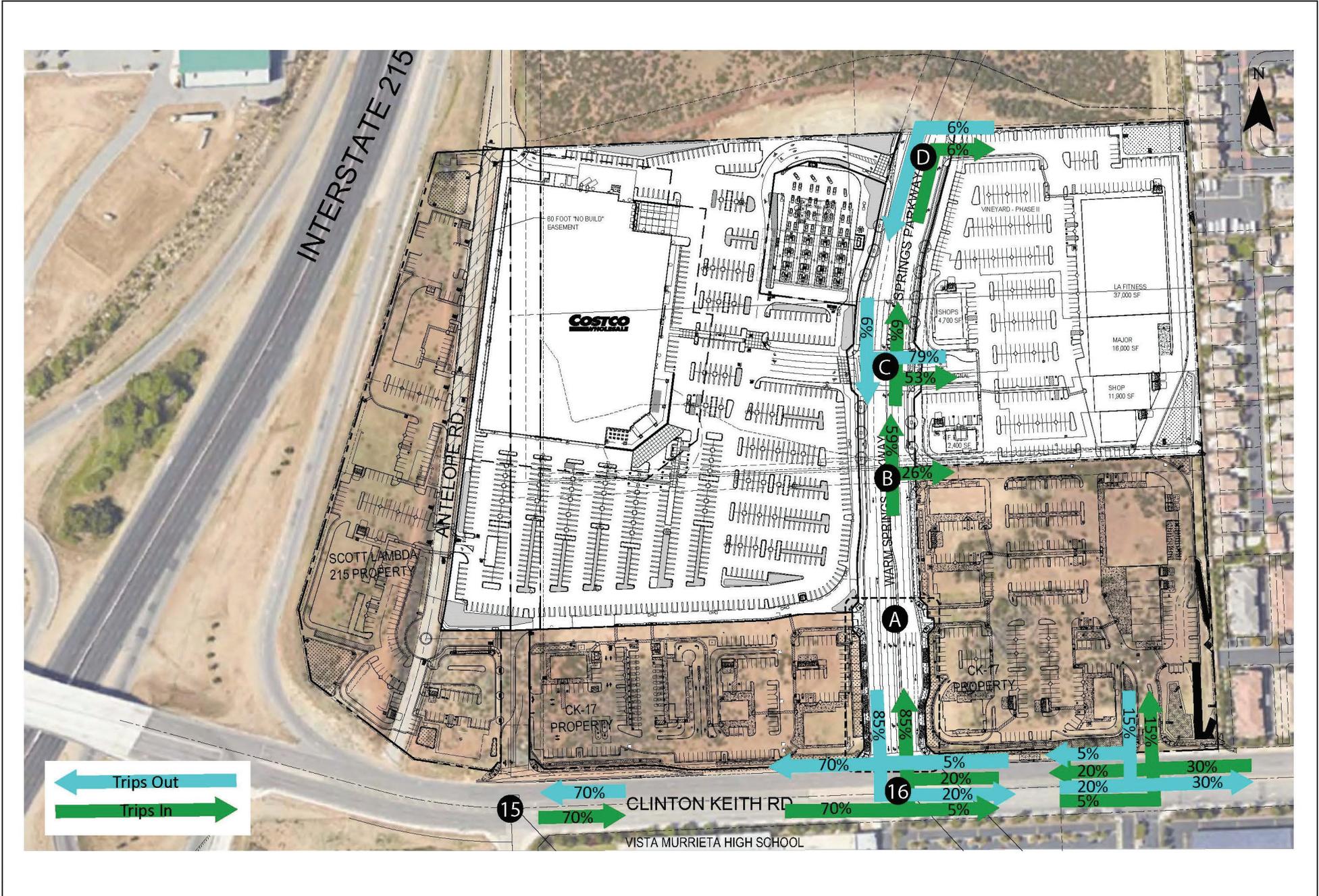
SOURCE: Kittelson & Associates

FIGURE 4.13-7

Trip Distribution Vineyard II Project

Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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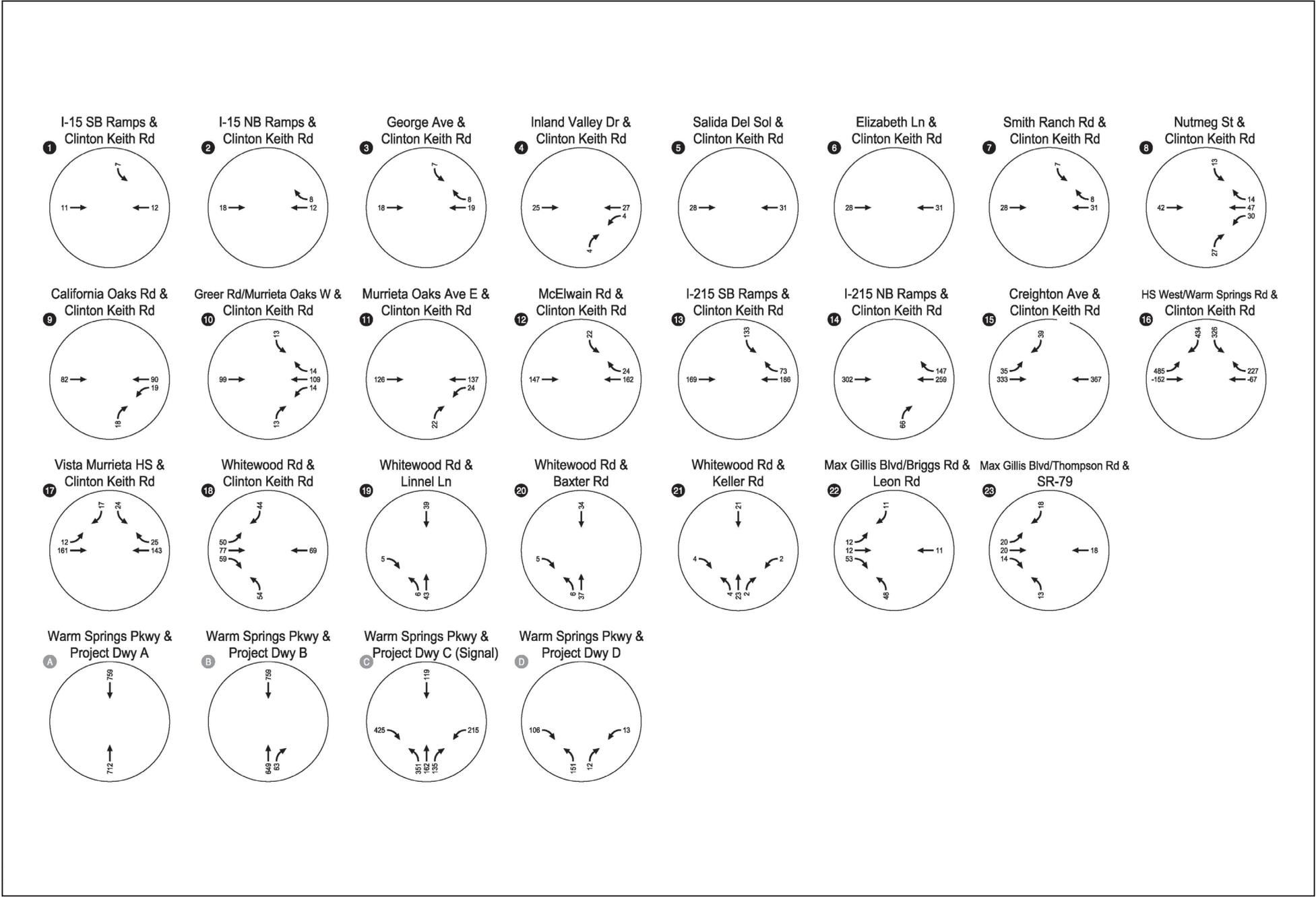


SOURCE: Kittelson & Associates

FIGURE 4.13-8

Trip Distribution at Site Accesses Vineyard II Project
Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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SOURCE: Kittelson & Associates

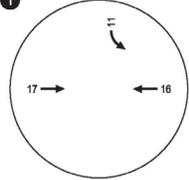


FIGURE 4.13-9
Total Project Trip Assignment Weekday PM Peak Hour with Creighton Avenue Access

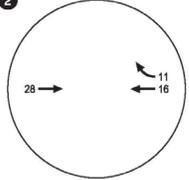
Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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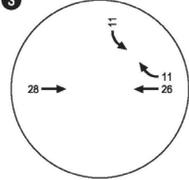
1 I-15 SB Ramps & Clinton Keith Rd



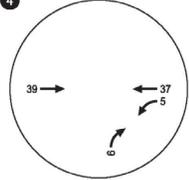
2 I-15 NB Ramps & Clinton Keith Rd



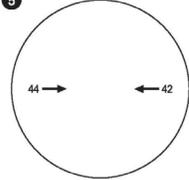
3 George Ave & Clinton Keith Rd



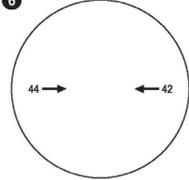
4 Inland Valley Dr & Clinton Keith Rd



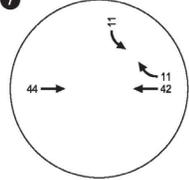
5 Salida Del Sol & Clinton Keith Rd



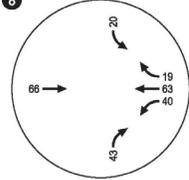
6 Elizabeth Ln & Clinton Keith Rd



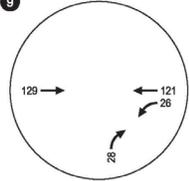
7 Smith Ranch Rd & Clinton Keith Rd



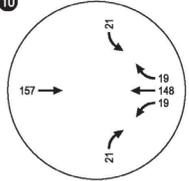
8 Nutmeg St & Clinton Keith Rd



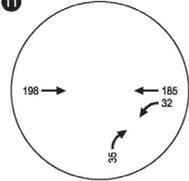
9 California Oaks Rd & Clinton Keith Rd



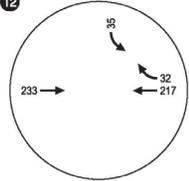
10 Greer Rd/Murrieta Oaks W & Clinton Keith Rd



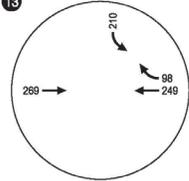
11 Murrieta Oaks Ave E & Clinton Keith Rd



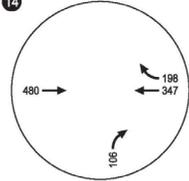
12 McElwain Rd & Clinton Keith Rd



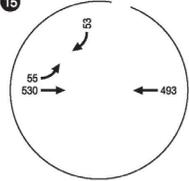
13 I-215 SB Ramps & Clinton Keith Rd



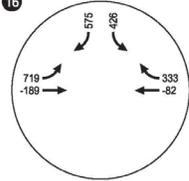
14 I-215 NB Ramps & Clinton Keith Rd



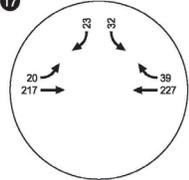
15 Creighton Ave & Clinton Keith Rd



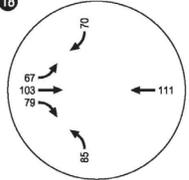
16 HS West/Warm Springs Rd & Clinton Keith Rd



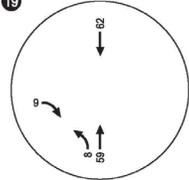
17 Vista Murrieta HS & Clinton Keith Rd



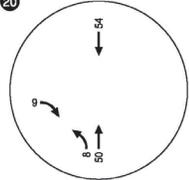
18 Whitewood Rd & Clinton Keith Rd



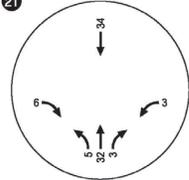
19 Whitewood Rd & Linnel Ln



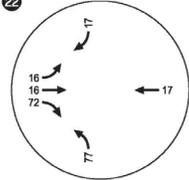
20 Whitewood Rd & Baxter Rd



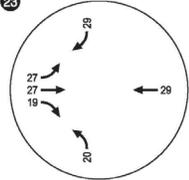
21 Whitewood Rd & Keller Rd



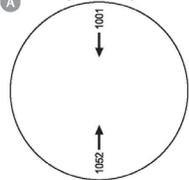
22 Max Gillis Blvd/Briggs Rd & Leon Rd



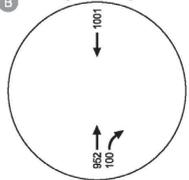
23 Max Gillis Blvd/Thompson Rd & SR-79



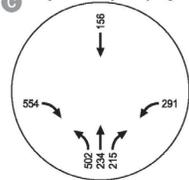
A Warm Springs Pkwy & Project Dwy A



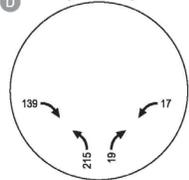
B Warm Springs Pkwy & Project Dwy B



C Warm Springs Pkwy & Project Dwy C (Signal)

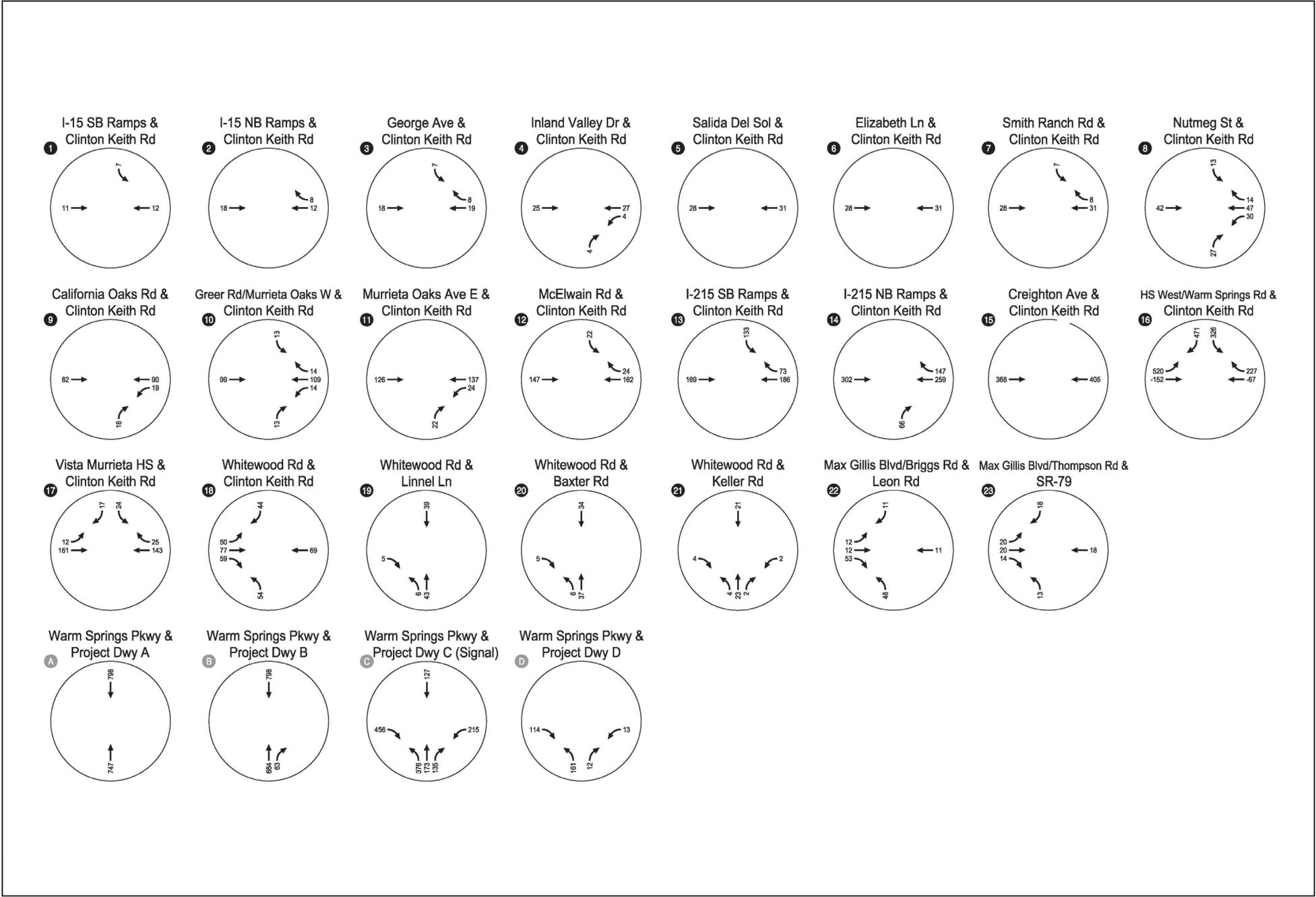


D Warm Springs Pkwy & Project Dwy D



SOURCE: Kittelson & Associates

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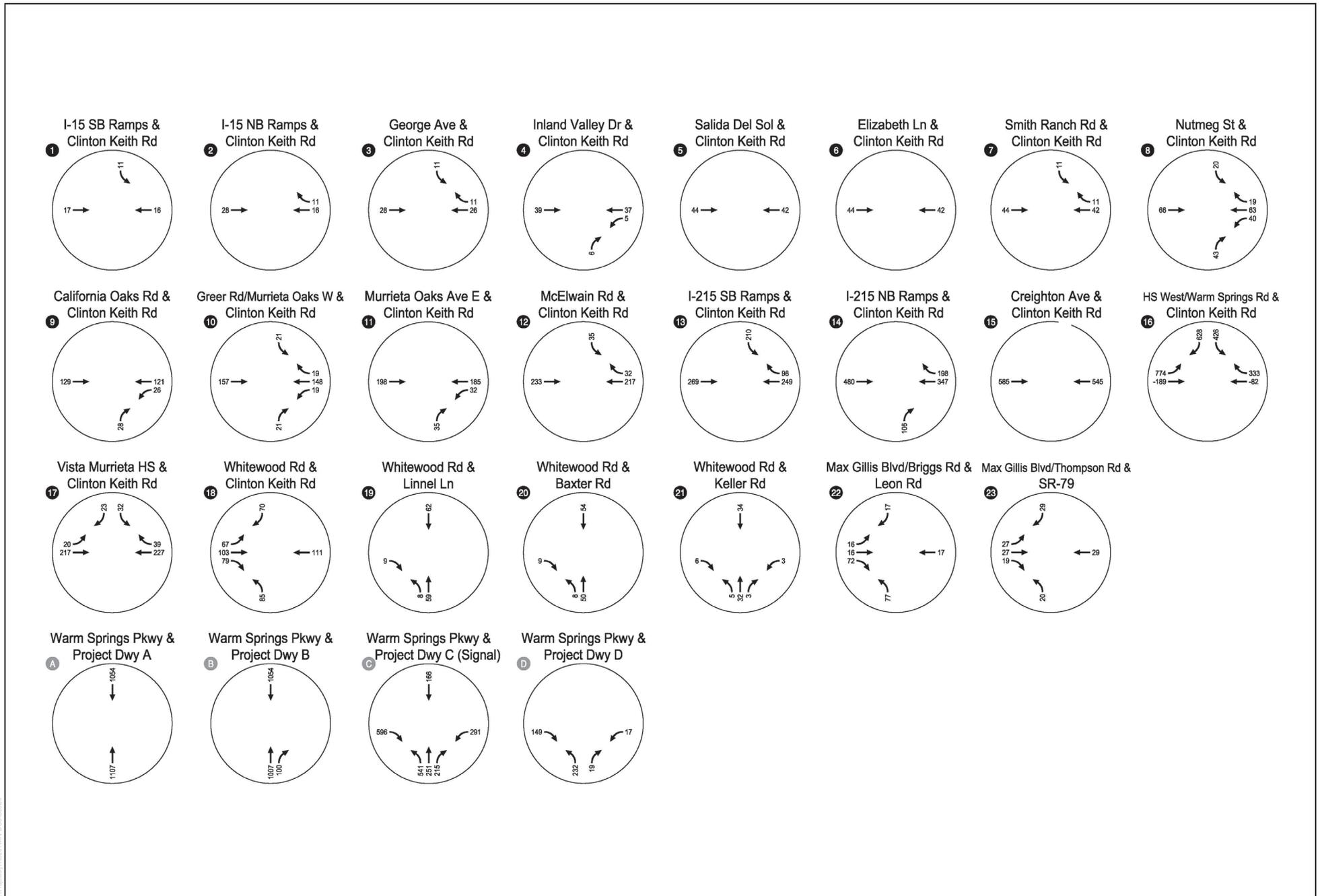


SOURCE: Kittelson & Associates

FIGURE 4.13-11

Total Project Trip Assignment Weekday PM Peak Hour without Creighton Avenue Access

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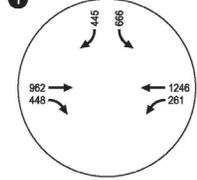
SOURCE: Kittelson & Associates

FIGURE 4.13-12

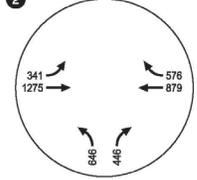
Total Project Trip Assignment Saturday Peak Hour without Creighton Avenue Access

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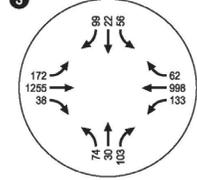
1 I-15 SB Ramps & Clinton Keith Rd



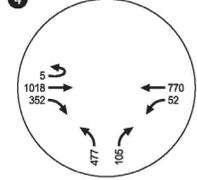
2 I-15 NB Ramps & Clinton Keith Rd



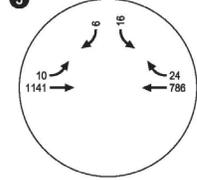
3 George Ave & Clinton Keith Rd



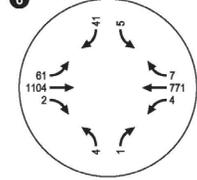
4 Inland Valley Dr & Clinton Keith Rd



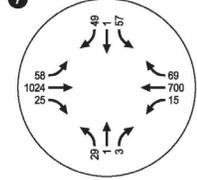
5 Salida Del Sol & Clinton Keith Rd



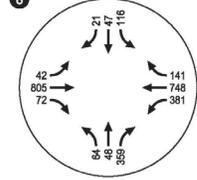
6 Elizabeth Ln & Clinton Keith Rd



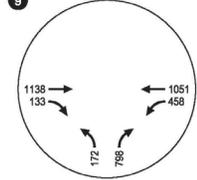
7 Smith Ranch Rd & Clinton Keith Rd



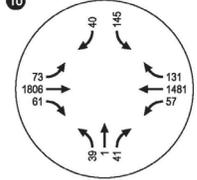
8 Nutmeg St & Clinton Keith Rd



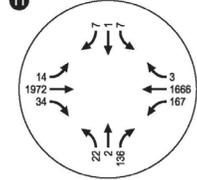
9 California Oaks Rd & Clinton Keith Rd



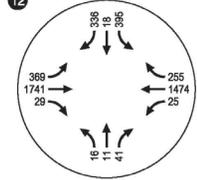
10 Greer Rd/Murrieta Oaks W & Clinton Keith Rd



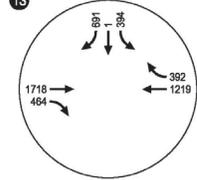
11 Murrieta Oaks Ave E & Clinton Keith Rd



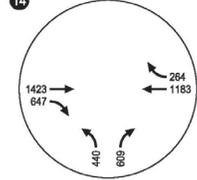
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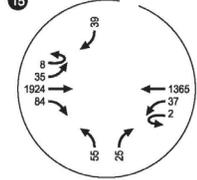
13 I-215 SB Ramps & Clinton Keith Rd



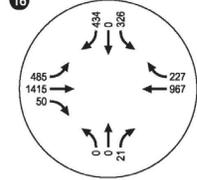
14 I-215 NB Ramps & Clinton Keith Rd



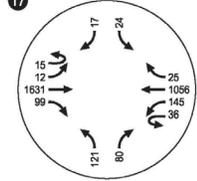
15 Creighton Ave & Clinton Keith Rd



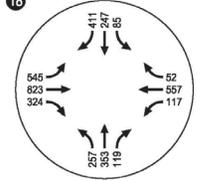
16 HS West/Warm Springs Rd & Clinton Keith Rd



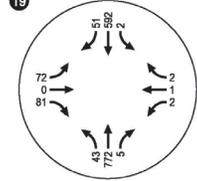
17 Vista Murrieta HS & Clinton Keith Rd



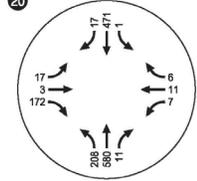
18 Whitewood Rd & Clinton Keith Rd



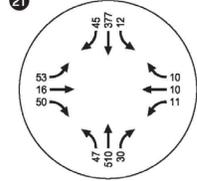
19 Whitewood Rd & Linnel Ln



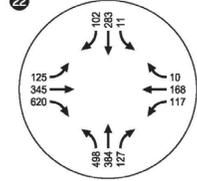
20 Whitewood Rd & Baxter Rd



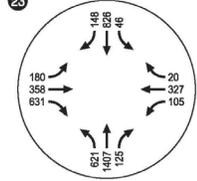
21 Whitewood Rd & Keller Rd



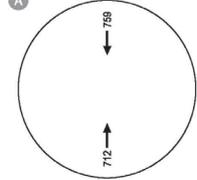
22 Max Gillis Blvd/Briggs Rd & Leon Rd



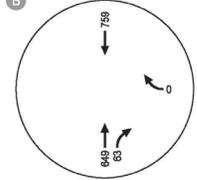
23 Max Gillis Blvd/Thompson Rd & SR-79



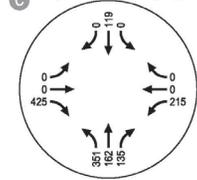
A Warm Springs Pkwy & Project Dwy A



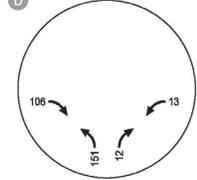
B Warm Springs Pkwy & Project Dwy B



C Warm Springs Pkwy & Project Dwy C (Signal)



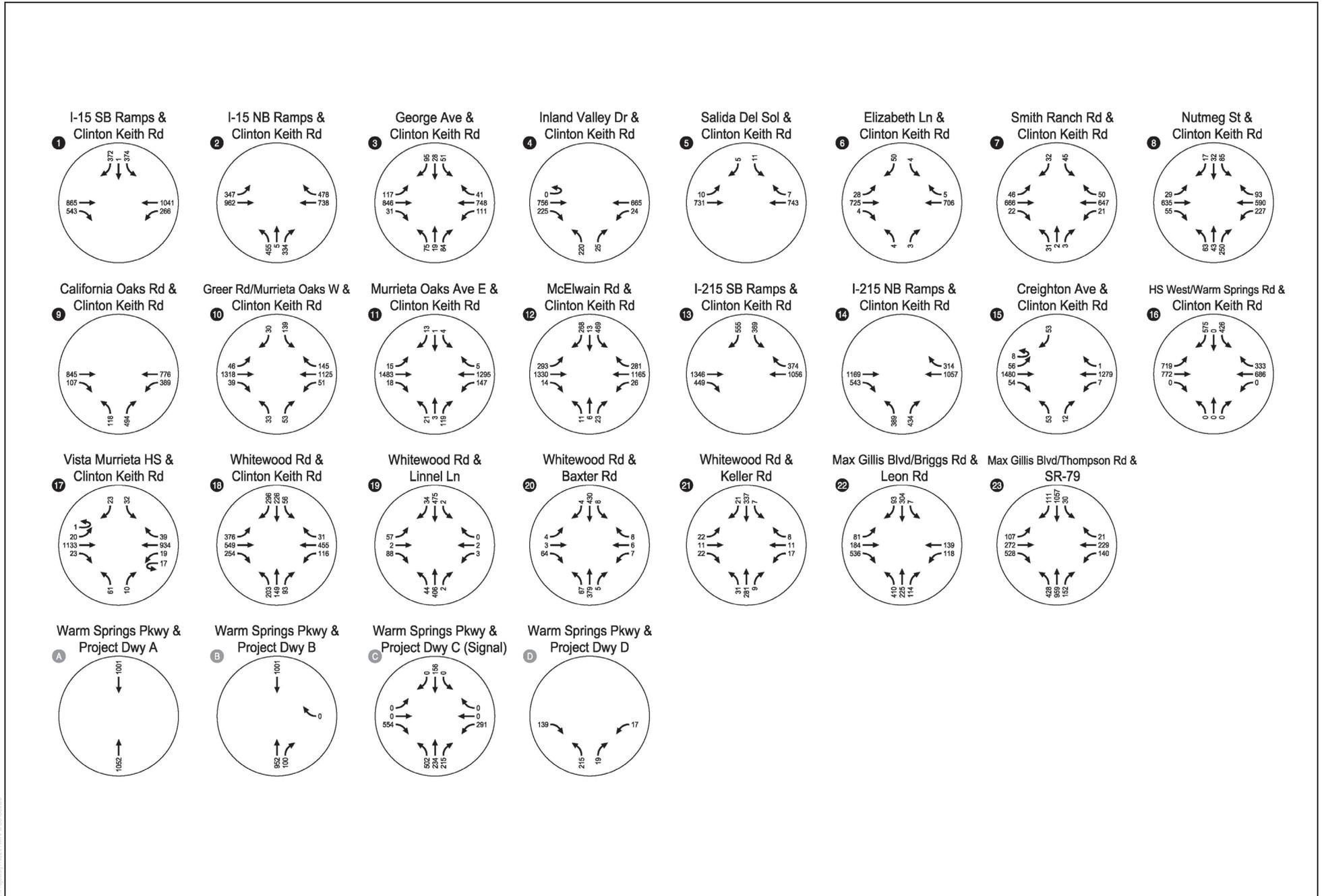
D Warm Springs Pkwy & Project Dwy D



SOURCE: Kittelson & Associates

FIGURE 4.13-13

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SOURCE: Kittelson & Associates

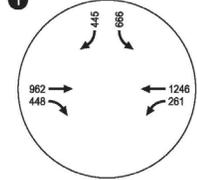
FIGURE 4.13-14

Year 2021 Project Completion Traffic Volumes with Creighton Avenue Access, Saturday Midday Peak Hour

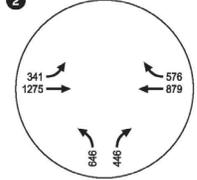
Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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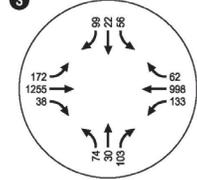
1 I-15 SB Ramps & Clinton Keith Rd



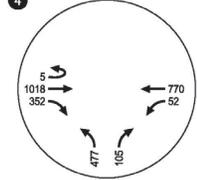
2 I-15 NB Ramps & Clinton Keith Rd



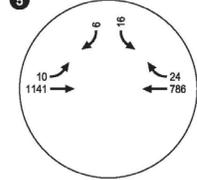
3 George Ave & Clinton Keith Rd



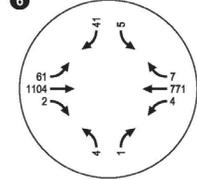
4 Inland Valley Dr & Clinton Keith Rd



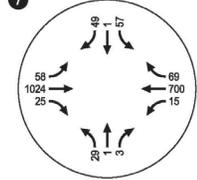
5 Salida Del Sol & Clinton Keith Rd



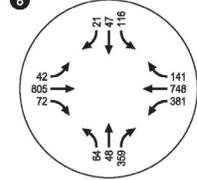
6 Elizabeth Ln & Clinton Keith Rd



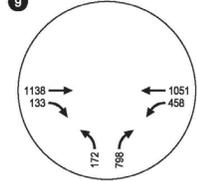
7 Smith Ranch Rd & Clinton Keith Rd



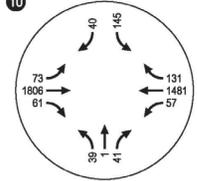
8 Nutmeg St & Clinton Keith Rd



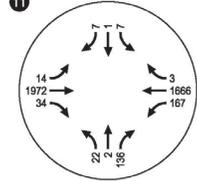
9 California Oaks Rd & Clinton Keith Rd



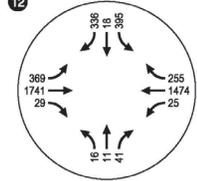
10 Greer Rd/Murrieta Oaks W & Clinton Keith Rd



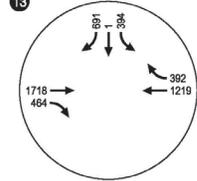
11 Murrieta Oaks Ave E & Clinton Keith Rd



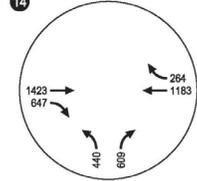
12 McElwain Rd & Clinton Keith Rd



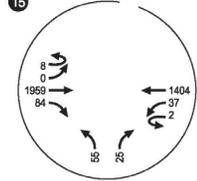
13 I-215 SB Ramps & Clinton Keith Rd



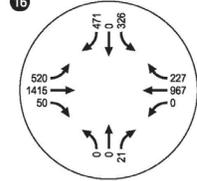
14 I-215 NB Ramps & Clinton Keith Rd



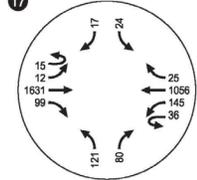
15 Creighton Ave & Clinton Keith Rd



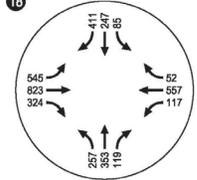
16 HS West/Warm Springs Rd & Clinton Keith Rd



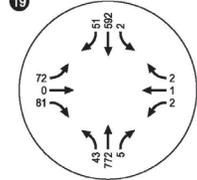
17 Vista Murrieta HS & Clinton Keith Rd



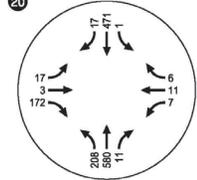
18 Whitewood Rd & Clinton Keith Rd



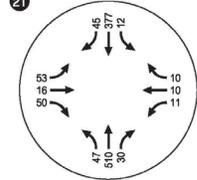
19 Whitewood Rd & Linnel Ln



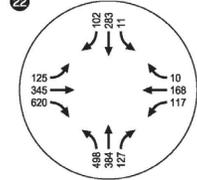
20 Whitewood Rd & Baxter Rd



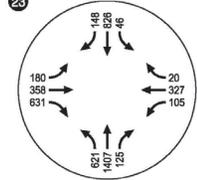
21 Whitewood Rd & Keller Rd



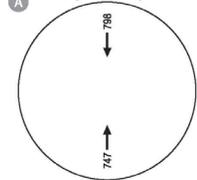
22 Max Gillis Blvd/Briggs Rd & Leon Rd



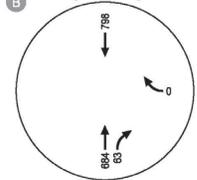
23 Max Gillis Blvd/Thompson Rd & SR-79



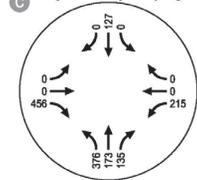
A Warm Springs Pkwy & Project Dwy A



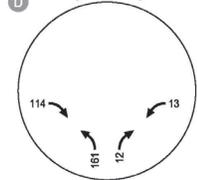
B Warm Springs Pkwy & Project Dwy B



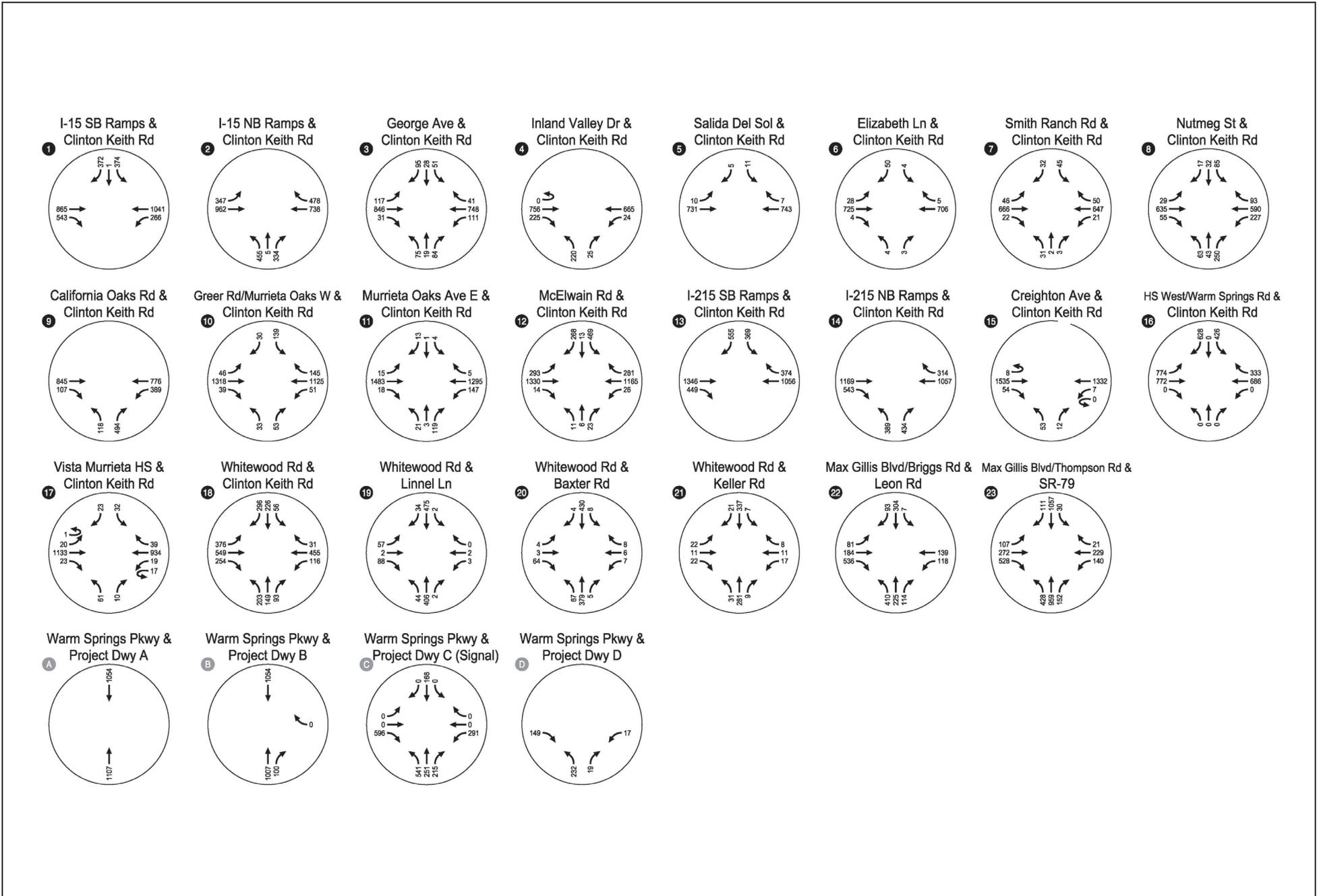
C Warm Springs Pkwy & Project Dwy C (Signal)



D Warm Springs Pkwy & Project Dwy D



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SOURCE: Kittelson & Associates

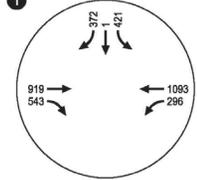
FIGURE 4.13-16

Year 2021 Project Completion Traffic Volumes without Creighton Avenue Access, Saturday Midday Peak Hour

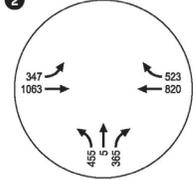
Costco/Vineyard Phase II Retail Development Project, City of Murrieta, California

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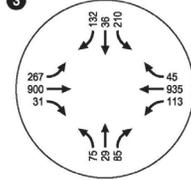
1 I-15 SB Ramps & Clinton Keith Rd



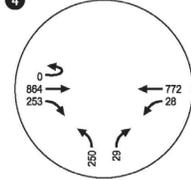
2 I-15 NB Ramps & Clinton Keith Rd



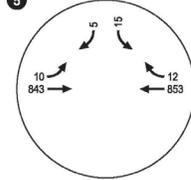
3 George Ave & Clinton Keith Rd



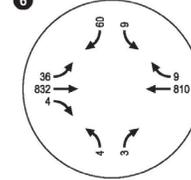
4 Inland Valley Dr & Clinton Keith Rd



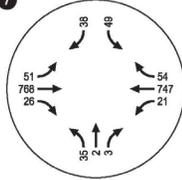
5 Salida Del Sol & Clinton Keith Rd



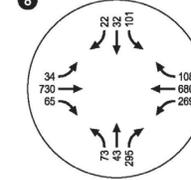
6 Elizabeth Ln & Clinton Keith Rd



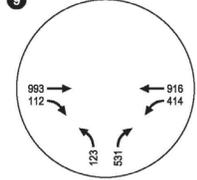
7 Smith Ranch Rd & Clinton Keith Rd



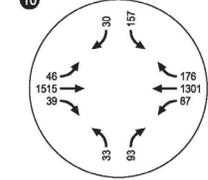
8 Nutmeg St & Clinton Keith Rd



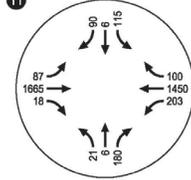
9 California Oaks Rd & Clinton Keith Rd



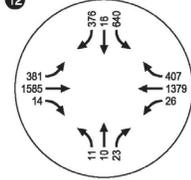
10 Greer Rd/Murrieta Oaks W & Clinton Keith Rd



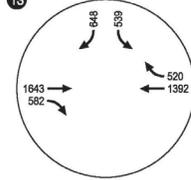
11 Murrieta Oaks Ave E & Clinton Keith Rd



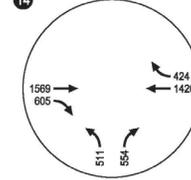
12 McElwain Rd & Clinton Keith Rd



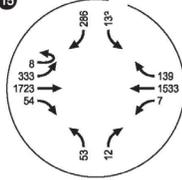
13 I-215 SB Ramps & Clinton Keith Rd



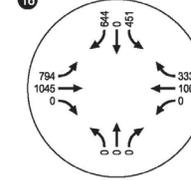
14 I-215 NB Ramps & Clinton Keith Rd



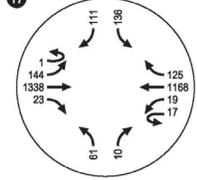
15 Creighton Ave & Clinton Keith Rd



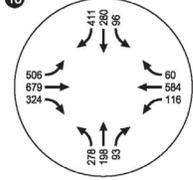
16 HS West/Warm Springs Rd & Clinton Keith Rd



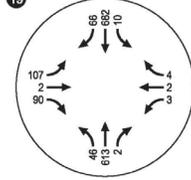
17 Vista Murrieta HS & Clinton Keith Rd



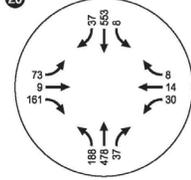
18 Whitewood Rd & Clinton Keith Rd



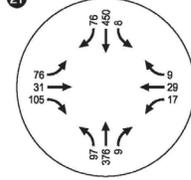
19 Whitewood Rd & Linnel Ln



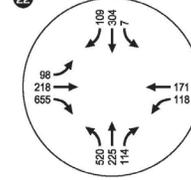
20 Whitewood Rd & Baxter Rd



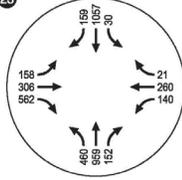
21 Whitewood Rd & Keller Rd



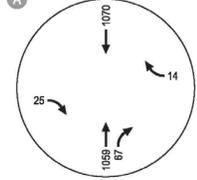
22 Max Gillis Blvd/Briggs Rd & Leon Rd



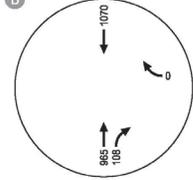
23 Max Gillis Blvd/Thompson Rd & SR-79



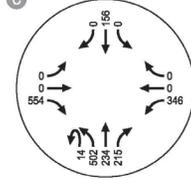
A Warm Springs Pkwy & Project Dwy A



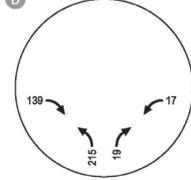
B Warm Springs Pkwy & Project Dwy B



C Warm Springs Pkwy & Project Dwy C (Signal)

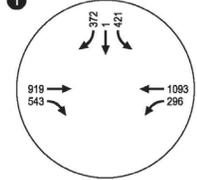


D Warm Springs Pkwy & Project Dwy D

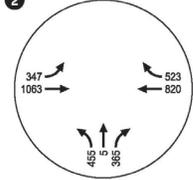


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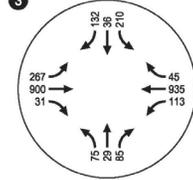
1 I-15 SB Ramps & Clinton Keith Rd



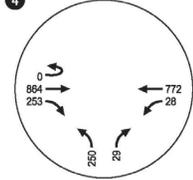
2 I-15 NB Ramps & Clinton Keith Rd



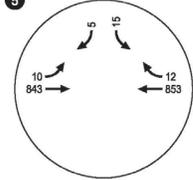
3 George Ave & Clinton Keith Rd



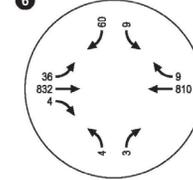
4 Inland Valley Dr & Clinton Keith Rd



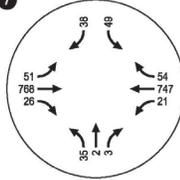
5 Salida Del Sol & Clinton Keith Rd



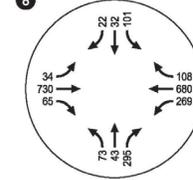
6 Elizabeth Ln & Clinton Keith Rd



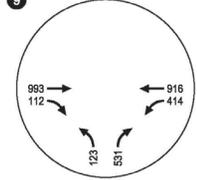
7 Smith Ranch Rd & Clinton Keith Rd



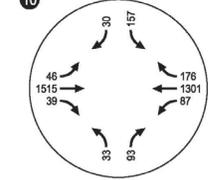
8 Nutmeg St & Clinton Keith Rd



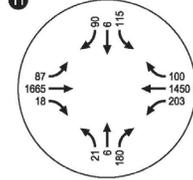
9 California Oaks Rd & Clinton Keith Rd



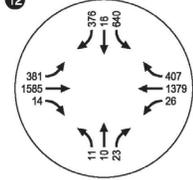
10 Greer Rd/Murrieta Oaks W & Clinton Keith Rd



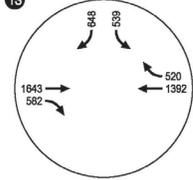
11 Murrieta Oaks Ave E & Clinton Keith Rd



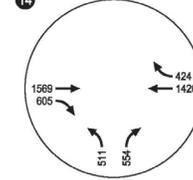
12 McElwain Rd & Clinton Keith Rd



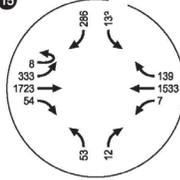
13 I-215 SB Ramps & Clinton Keith Rd



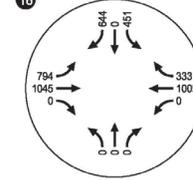
14 I-215 NB Ramps & Clinton Keith Rd



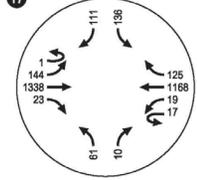
15 Creighton Ave & Clinton Keith Rd



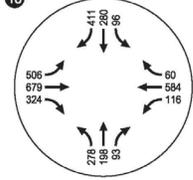
16 HS West/Warm Springs Rd & Clinton Keith Rd



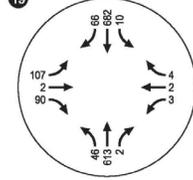
17 Vista Murrieta HS & Clinton Keith Rd



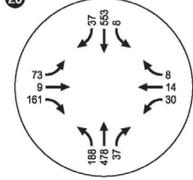
18 Whitewood Rd & Clinton Keith Rd



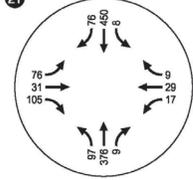
19 Whitewood Rd & Linnel Ln



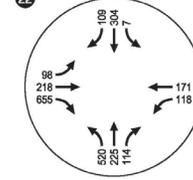
20 Whitewood Rd & Baxter Rd



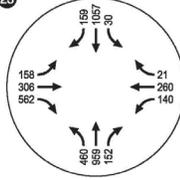
21 Whitewood Rd & Keller Rd



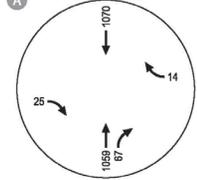
22 Max Gillis Blvd/Briggs Rd & Leon Rd



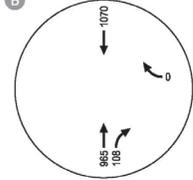
23 Max Gillis Blvd/Thompson Rd & SR-79



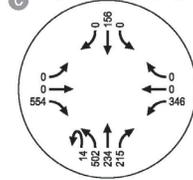
A Warm Springs Pkwy & Project Dwy A



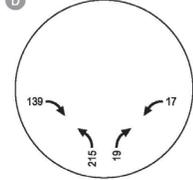
B Warm Springs Pkwy & Project Dwy B



C Warm Springs Pkwy & Project Dwy C (Signal)

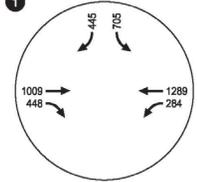


D Warm Springs Pkwy & Project Dwy D

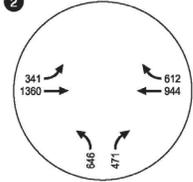


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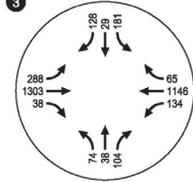
1 I-15 SB Ramps & Clinton Keith Rd



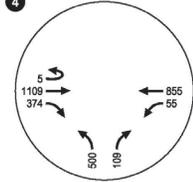
2 I-15 NB Ramps & Clinton Keith Rd



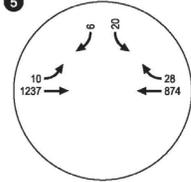
3 George Ave & Clinton Keith Rd



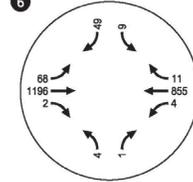
4 Inland Valley Dr & Clinton Keith Rd



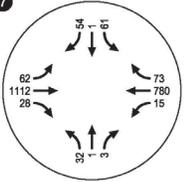
5 Salida Del Sol & Clinton Keith Rd



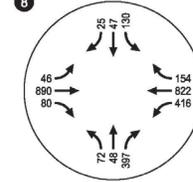
6 Elizabeth Ln & Clinton Keith Rd



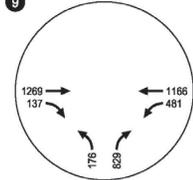
7 Smith Ranch Rd & Clinton Keith Rd



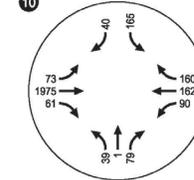
8 Nutmeg St & Clinton Keith Rd



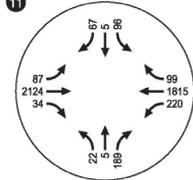
9 California Oaks Rd & Clinton Keith Rd



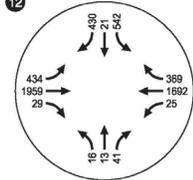
10 Greer Rd/Murrieta Oaks W & Clinton Keith Rd



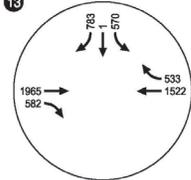
11 Murrieta Oaks Ave E & Clinton Keith Rd



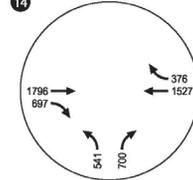
12 McElwain Rd & Clinton Keith Rd



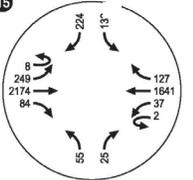
13 I-215 SB Ramps & Clinton Keith Rd



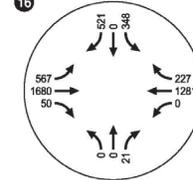
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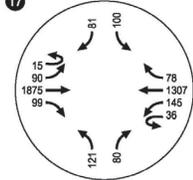
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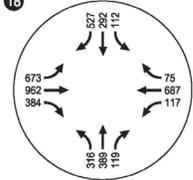
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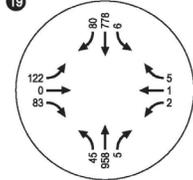
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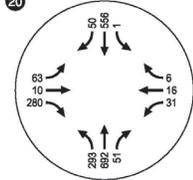
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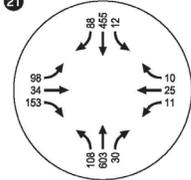
19 Whitewood Rd & Linnel Ln



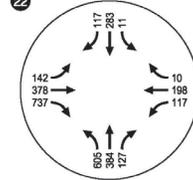
20 Whitewood Rd & Baxter Rd



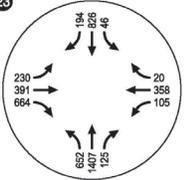
21 Whitewood Rd & Keller Rd



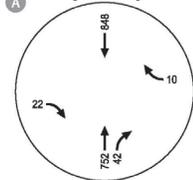
22 Max Gillis Blvd/Briggs Rd & Leon Rd



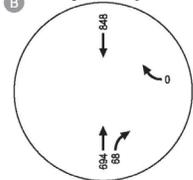
23 Max Gillis Blvd/Thompson Rd & SR-79



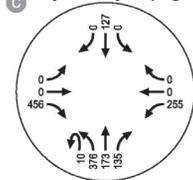
A Warm Springs Pkwy & Project Dwy A



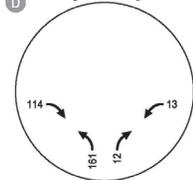
B Warm Springs Pkwy & Project Dwy B



C Warm Springs Pkwy & Project Dwy C (Signal)



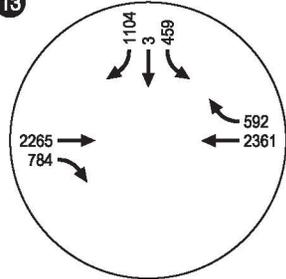
D Warm Springs Pkwy & Project Dwy D



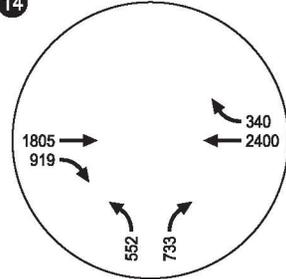
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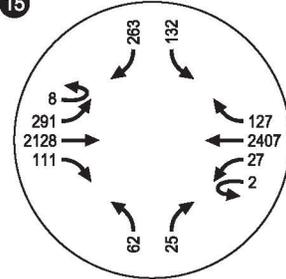
13 I-215 SB Ramps & Clinton Keith Rd



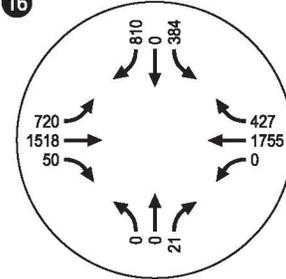
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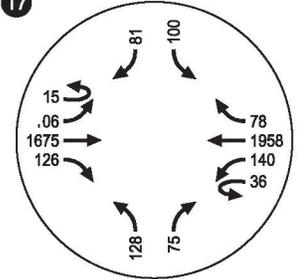
15 Creighton Ave & Clinton Keith Rd



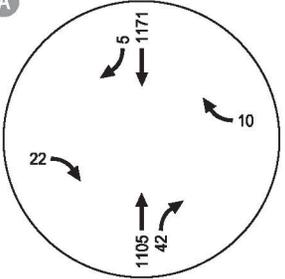
16 HS West/Warm Springs Rd & Clinton Keith Rd



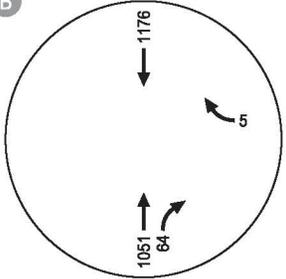
17 Vista Murrieta HS & Clinton Keith Rd



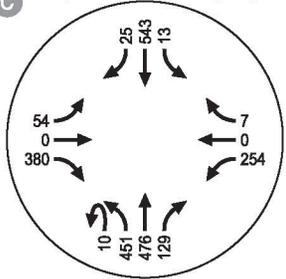
A Warm Springs Pkwy & Project Dwy A



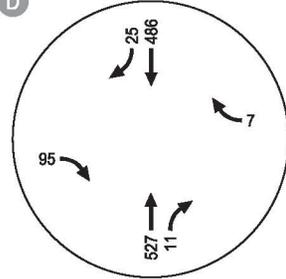
B Warm Springs Pkwy & Project Dwy B



C Warm Springs Pkwy & Project Dwy C (Signal)



D Warm Springs Pkwy & Project Dwy D



SOURCE: Kittelson & Associates

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4.14 Tribal Cultural Resources

This section describes the existing tribal cultural resources of the Costco/Vineyard II Retail Development Project (project) site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the project. The following analysis is based in part on the Cultural Resources Inventory Report, included as Appendix D of this Environmental Impact Report.

4.14.1 Existing Conditions

As discussed in Section 4.4, Cultural Resources, a Cultural Resources Inventory Report (Appendix D) was completed for the project to identify all previously recorded cultural resources within the project site and within a 1-mile (1,608-meter) buffer area (study area). The report (Appendix D) documents the results of a California Historical Resources Information System (CHRIS) records search, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, informal tribal outreach, and an intensive-level pedestrian survey.

The records search identified 65 previous cultural resources technical investigations that have been conducted within the study area, and 57 previously recorded resources within the study area; none of these resources were identified within or overlapping with the project site. As further discussed below, an NAHC SLF search returned positive results for the presence of Native American cultural resources in the study area.

Native American Heritage Commission Sacred Lands File Search and Tribal Correspondence

On June 5, 2018, Dudek contacted the NAHC to request a review of the SLF. The NAHC replied through email on June 6, 2018, stating that the SLF search was completed with positive results and indicated that Native American cultural resources or sacred sites may be located within the 1-mile record search area. The NAHC provided a list of 37 Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the project site (see Appendix D, Table 3). Subsequent outreach letters were sent to all 37 Native American individuals and/or tribal organizations. This outreach was conducted for informational purposes only, and does not constitute formal government-to-government consultation.

Assembly Bill 52 Consultation

Under Assembly Bill (AB) 52, a tribal cultural resource must have tangible, geographically defined properties that can be impacted by project implementation. The proposed project is subject to compliance with AB 52.

On September 4, 2018, the City of Murrieta (City) sent notification of the proposed project to all California Native American tribal representatives that have requested project notifications from the City pursuant to AB 52 and that are on file with the NAHC as being traditionally or culturally affiliated with the geographic area. Specifically, notification letters were sent to five tribes: the Soboba Band of Luiseño Indians, the Agua Caliente Band of Cahuilla Indians, the Rincon Band of Mission Indians, the Pechanga Band of Luiseño Indians, and the Morongo Band of Mission Indians. The letters included a project map, a project description, and a statement informing the tribes that the notification letter was provided to initiate AB 52 consultation. AB 52 allows tribes 30 days after receiving notification to request consultation. If a response is not received within the allotted 30 days, it is assumed that consultation is declined. To date, government-to-government consultation initiated by the City has occurred with the three tribes that requested consultation in accordance with the AB 52 consultation process: the Rincon Band of Mission Indians, the Pechanga Band of Luiseño Indians, and the Soboba Band of Luiseño Indians. Table 4.14-1 summarizes the results of the AB 52 consultation for the proposed project.

Table 4.14-1. Assembly Bill 52 Native American Tribal Outreach Results

Native American Tribal Representatives	Method of Consultation	Results
Destiny Colocho, Rincon Band	Certified Mail sent September 4, 2018; conference call on November 2, 2018; follow-up emails.	Response received via email from tribal representative Destiny Colocho indicating that the project site is within the tribe's area of historic interest and requesting formal consultation. The City sent a copy of the Cultural Resources Report, an aerial photo of the project site, and a copy of the Geotechnical Report for their review. Upon review of the information provided and the number of recorded cultural sites within 1 mile of the project site, the tribe recommended archaeological and tribal monitoring for ground-breaking activities that take place below the currently disturbed/graded areas. Consultation concluded on November 19, 2018.
Ebru Ozdil, Pechanga Band	Certified Mail sent September 4, 2018; conference call on November 1, 2018; follow-up emails	Response received via email and U.S. Postal Service from tribal representative Ebru Ozdil indicating that the project is within the tribe's historic territory and requesting formal consultation. The tribe requested to review the archaeological, geotechnical, and conceptual grading plans. The City sent a copy of the Cultural Resources Report, an aerial photo of the project site, and a copy of the Geotechnical Report for their review. After multiple attempts to contact the Pechanga Band of Luiseño Indians, the City did not receive a response to emails/phone calls/letters requesting to meet. A final letter requesting to contact the City to consult was sent on January 11, 2019, with an end date of January 31, 2019. The City did not receive any response and consultation was concluded.
Joseph Ontiveros, Soboba Band	Certified Mail; sent September 4, 2018; conference call on October 25, 2018; follow-up emails	Response received via U.S. Postal Service on October 8, 2018, from tribal representative Joseph Ontiveros requesting formal consultation. The City sent a copy of the Cultural Resources Report, an aerial photo of the project site, and a copy of the Geotechnical Report for their review. Upon review of the information provided, the tribe recommended tribal monitoring of grading activities. Draft mitigation measures were provided for the tribe's review. Consultation concluded on August 27, 2019, with consensus regarding mitigation measures as identified in Section 4.14.5.
Lacy Padilla, Agua Caliente Band of Cahuilla Indians	Email response, November 21, 2018	No consultation requested.
Travis Armstrong, Morongo Band of Mission Indians	Email response, November 19, 2018	No consultation requested.

4.14.2 Relevant Plans, Policies, and Ordinances

State

California Public Resources Code

California Public Resources Code (PRC), Sections 5097–5097.6, provide that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. These sections prohibit the knowing destruction of objects of antiquity without a permit (express permission) on public lands, and provide for criminal sanctions. This section was amended in 1987 to require consultation with the NAHC whenever Native American graves are found. Violations that involve taking or possessing remains or artifacts are felonies.

PRC Section 5097.5(a) states that “A person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.”

California Register of Historical Resources

In California, the term “historical resource” includes, but is not limited to, “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California” (PRC Section 5020.1[j]). In 1992, the California legislature established the California Register of Historical Resources (CRHR) “to be used by state and local agencies, private groups, and citizens to identify the state’s historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1[a]). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to PRC Section 5024.1(c)(1–4) and 14 CCR 4852(c), a resource may be listed as a historical resource in the California Register if it (i) retains “sufficient integrity,” and (ii) meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

The following California Environmental Quality Act (CEQA) Statute (PRC Section 21000 et seq.) and Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines “unique archaeological resource.”
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define “historical resources.” In addition, CEQA Guidelines Section 15064.5(b) defines the phrase “substantial adverse change in the significance of an historical resource;” it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines “tribal cultural resources.”
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated cemetery.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause “a substantial adverse change in the significance of an historical resource” (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[g]), it is a “historical resource” and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5[a]).

A “substantial adverse change in the significance of an historical resource” reflecting a significant effect under CEQA means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (14 CCR 15064.5[b][1]; see also PRC Section 5020.1[q]). In turn, the significance of a historical resource is materially impaired when a project does any of the following (14 CCR 15064.5[b][2]):

- (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
- (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g)

of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

- (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any “historical resources,” then evaluates whether that project would cause a substantial adverse change in the significance of a historical resource such that the resource’s historical significance is materially impaired.

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a]–[c]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts on non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2[a]; 14 CCR 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as a tribal cultural resource (PRC Sections 21074[c], 21083.2[h]), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described in this section, these procedures are detailed in PRC Section 5097.98.

California State Assembly Bill 52

AB 52 (2014) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a tribal cultural resource as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and that is either:

- On or determined to be eligible for the CRHR or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in CEQA Guidelines Section 5024.1(c).

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1(a)(9) of AB 52 establishes that “a substantial adverse change to a tribal cultural resource has a significant effect on the environment.” Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures “capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource.” Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Section 7050.5 of the California Health and Safety Code requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5[b]). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact NAHC within 24 hours (Section 7050.5[c]). NAHC will notify the “most likely descendant.” With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

City of Murrieta General Plan

The City’s General Plan Conservation Element provides direction regarding the conservation, development, and utilization of natural and cultural resources. The following goal and policies from the Conservation Element related to cultural resources may be applicable to the project with regard to tribal cultural resources (City of Murrieta 2011).

Goal CSV-11 Murrieta protects, enhances, and celebrates archaeological, cultural, and historic resources as a way to foster community identity.

Policy CSV-11.1 Promote the protection and preservation of archaeological, cultural, historical, and architecturally significant sites, structures, districts, Native American resources, and natural features throughout the community, consistent with the Cultural Resource Preservation Ordinance. Preferred methods of protection include avoidance of impacts, placing resources in

designated open space and allocation of local resources and/or tax credits as feasible.

- Policy CSV-11.2** Encourage appropriate adaptive reuse of historic structures and sites.
- Policy CSV-11.3** Promote the designation of eligible resources to the City Register of Cultural Resources, the County Landmarks Program, or other regional, state, or federal programs.
- Policy CSV-11.4** Encourage the development of programs to educate the community about Murrieta’s historic resources and involve the community in historic preservation.
- Policy CSV-11.5** Comply with state and federal law regarding the identification and protection of archaeological and Native American resources, and consult early with the appropriate tribal governments.
- Policy CSV-11.6** Investigate the feasibility of establishing a museum or other repository to archive and display Murrieta’s archaeological resources.
- Policy CSV-11.7** Maintain the position of archivist/historian at the Murrieta Public Library, and promote the Library’s Heritage Room as a repository for historical information about the Murrieta area.
- Policy CSV-11.8** Promote the use of historic elements in City parks and public places.
- Policy CSV-11.9** Exercise sensitivity and respect for all human remains, including cremations, and comply with all applicable state and federal laws regulating human remains.

4.14.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to tribal cultural resources are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to tribal cultural resources would occur if the project would:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
 - a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
 - b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.14.4 Impacts Analysis

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?*

Less than Significant Impact. A Cultural Resources Inventory Report (Appendix D) was prepared for the proposed project, documenting the results of a CHRIS records search conducted at the EIC for the project site and a 1-mile (1,608 meters) buffer, an NAHC SLF search, informal tribal consultation, and an intensive-level pedestrian survey. The CHRIS records search identified 57 previously recorded cultural resources within the 1-mile search radius; none of these resources were identified within the project site. No historical resources listed or eligible for listing in the CRHR or in a local register of historic resources were identified during this search.

In an SLF results letter dated June 6, 2018, the NAHC stated that the SLF search was completed with positive results for the presence of Native American cultural resources and suggested contacting the Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the project site (see Appendix D, Table 3). Informal outreach letters were sent to the 37 Native American individuals and/or tribal organizations suggested by the NAHC. Further, the City conducted formal AB 52 consultation (see response to 4.14.4[b] below for further details on this process). No specific tribal cultural resources were identified by California Native American tribes as part of the City's AB 52 notification and consultation process.

Therefore, no historical resources listed or eligible for listing in the CRHR or in a local register of historic resources were identified during informal or formal consultation with the tribes by the City as a result of the CHRIS records search, the NAHC SLF search, or the intensive-level pedestrian survey. The project would result in a less-than-significant impact to tribal cultural resources listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

- b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?*

Less than Significant with Mitigation Incorporated. There are no resources in the project area that have been determined by the City to be significant pursuant to the criteria set forth in PRC Section 5024.1. Further, no specific tribal cultural resources were identified in the project area by the NAHC through the SLF search or by the City as part of the AB 52 notification and consultation process. Informal outreach letters were sent to the Native American individuals and/or tribal organizations suggested by the NAHC, and in September 2018, the City sent notification of the proposed project to all California Native American tribal representatives that requested project notifications pursuant to AB 52. As indicated in Table 4.14-1, five California Native American tribal representatives requested to receive notifications from the City pursuant to AB 52: the Soboba Band of Luiseño Indians, the Agua Caliente Band of Cahuilla

Indians, Rincon Band of Mission Indians, the Pechanga Band of Luiseño Indians, and the Morongo Band of Mission Indians. Three responses were received by the City and government-to-government consultation initiated by the City has occurred with these three tribes, which include the Rincon Band of Mission Indians, the Pechanga Band of Luiseño Indians, and the Soboba Band of Luiseño Indians. The results of the AB 52 consultation for the proposed project are summarized below and in Table 4.14-1.

- Rincon Band of Luiseño Indians – On October 5, 2018, the City received a response letter from tribal representative Destiny Colocho requesting formal consultation. The City sent the Cultural Resources Report, the Geotechnical Report, and an aerial showing the project site and boundaries. On November 2, 2018, the City consulted with the tribe via a conference call with Destiny Colocho. Upon review of project materials and recorded cultural sites in the project vicinity, the tribe recommended archaeological and tribal monitoring for all ground-breaking activities below the currently disturbed or graded areas. Consultation concluded on November 19, 2018.
- Pechanga Band of Luiseño Indians – On September 20, 2018, the City received a response letter from tribal representative Ebru Ozdil requesting formal consultation. The City followed up with a conference call on November 1, 2018, with tribal representative Ebru Ozdil, and sent the Cultural Resources Report, the Geotechnical Report, and an aerial showing the project site and boundaries. The City did not receive further response after multiple attempts to contact the tribe. A final letter requesting that the tribe contact the City was sent on January 11, 2019, with an end date of January 31, 2019. The City did not receive a response and consultation was concluded.
- Soboba Band of Luiseño Indians – On October 8, 2018, the City received a response letter from tribal representative Joseph Ontiveros requesting formal consultation. The City sent the Cultural Resources Report, the Geotechnical Report, and an aerial showing the project site and boundaries. On October 25, 2018, the City consulted with the tribe via a conference call with Joseph Ontiveros. Upon review of the information provided, the tribe recommended tribal monitoring of grading activities. Through consultation, agreement on proposed draft mitigation measures was reached, and consultation was concluded on August 27, 2019.

It is possible that items of tribal significance could be uncovered during earthwork activities; thus, mitigation measures were developed in consultation with the consulting tribes. Adherence to **Mitigation Measure (MM) TCR-1** through **MM-TCR-5** would reduce impacts to tribal cultural resources to less than significant.

4.14.5 Mitigation Measures

The project would be required to comply with the following mitigation measures:

- MM-TCR-1** The project permittee/owner shall retain a Riverside County-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown cultural resources. Prior to grading, the project permittee/owner shall provide to the City of Murrieta verification that a certified archaeological monitor has been retained. Any newly discovered cultural resource deposits shall be subject to a cultural resources evaluation.

MM-TCR-2 *Archaeological Monitoring:* At least 30 days prior to grading permit issuance and before any grading, excavation, and/or ground-disturbing activities on the site take place, the project permittee/owner shall retain a Riverside County-certified archaeological monitor to monitor all ground-disturbing activities in an effort to identify any unknown archaeological resources.

The Project Archaeologist, in consultation with consulting tribes, the permittee/owner, and the City of Murrieta, shall develop an Archaeological Monitoring Plan to address the details, timing, and responsibility of all archaeological and cultural monitoring activities that will occur on the project site during construction. Details in the plan shall include:

- a) Project grading and development scheduling;

The development of a schedule in coordination with the permittee/owner and the Project Archaeologist for designated Native American Tribal Monitors from the consulting tribes during grading, excavation and ground-disturbing activities on the site: including the scheduling, safety requirements, duties, scope of work, and Native American Tribal Monitors' authority to stop and redirect grading activities in coordination with all project archaeologists; and,

The protocols and stipulations that the permittee/owner, City of Murrieta, tribes, and Project Archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

A final report documenting the monitoring activity and disposition of any recovered cultural resources shall be submitted to the City of Murrieta, Eastern Information Center and the consulting tribe within 60 days of completion of monitoring.

MM-TCR-3 *Native American Monitoring:* Native American Tribal monitors shall also participate in monitoring of ground-disturbing activity. At least 30 days prior to issuance of grading permits, agreement(s) between the permittee/owner and the consulting tribe(s) shall be developed regarding tribal monitoring requirements and treatment of Tribal Cultural Resources so as to meet the requirements of the California Environmental Quality Act. The monitoring agreement shall address the treatment of known Tribal Cultural Resources; the designation, responsibilities, and participation of designated Tribal monitors during grading, excavation, and ground-disturbing activities; project grading and development scheduling.

MM-TCR-4 *Disposition of Cultural Resources:* In the event that tribal cultural resources are discovered during the course of grading for this project, one or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be submitted to the City of Murrieta Planning Department:

1. Preservation in place means avoiding the resources, leaving them in the place where they were found with no development affecting the integrity of the resource.
2. On-site reburial of the discovered items as detailed in the Monitoring Plan required pursuant to MM-TCR-2. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments.

3. The permittee/owner shall relinquish ownership of all cultural resources, including sacred items, burial goods, and all archaeological artifacts and non-human remains as part of the required mitigation for impacts to cultural resources, and adhere to the following:

A curation agreement with an appropriate qualified repository within Riverside County that meets federal standards per Title 36 Code of Federal Regulations 800 Part 79 and therefore would be curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate curation facility within Riverside County, to be accompanied by payment of the fees necessary for permanent curation.

At the completion of grading, excavation, and ground-disturbing activities on site, a Phase IV Monitoring Report shall be submitted to the City of Murrieta documenting monitoring activities conducted by the Project Archaeologist and Native American Tribal Monitors within 60 days of completion of grading. This report shall document the impacts to the known resources on the property; describe how each mitigation measure was fulfilled; document the type of cultural resources recovered and the disposition of such resources; provide evidence of the required cultural sensitivity training for the construction staff held during the required pre-grade meeting; and, in a confidential appendix, include the daily/weekly monitoring notes from the archaeologist. All reports produced will be submitted to the City of Murrieta, Eastern Information Center and Consulting Tribes.

MM-TCR-5 *Human remains:* If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Riverside County Coroner has made the necessary findings as to origin. Further, pursuant to California Public Resources Code, Section 5097.98(b), remains shall be left in place and free from disturbance until a final decision as to the treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the Native American Heritage Commission must be contacted within 24 hours. The Native American Heritage Commission must then immediately identify the "most likely descendants(s)" for purposes of receiving notification of discovery. The most likely descendant(s) shall then make recommendations within 48 hours and engage in consultation concerning the treatment of the remains as provided in California Public Resources Code, Section 5097.98.

4.14.6 Level of Significance After Mitigation

MM-TCR-1 through **MM-TCR-5** listed in Section 4.14.5, Mitigation Measures, would reduce potential impacts to tribal cultural resources to a less-than-significant level.

4.14.7 Cumulative Impacts

Cumulative impacts on tribal cultural resources evaluate whether impacts of the project and related projects, when taken as a whole, substantially diminish the number of tribal cultural resources within the same or similar context or property type. As discussed throughout this section, the project could have potentially significant impacts to unknown tribal cultural resources, and mitigation would be required to reduce adverse impacts to less than significant. It is anticipated that tribal cultural resources that are potentially affected by related projects would be subject to the same requirements of CEQA as the project, and that the project applicants would mitigate for their impacts, if applicable. These determinations would be made on a case-by-case basis, and the effects of cumulative

development on cultural resources would be mitigated to the extent feasible in accordance with CEQA and other applicable legal requirements. Therefore, the proposed project would not contribute to a cumulatively considerable impact associated with tribal cultural resources and cumulative impacts would be less than significant.

4.14.8 References Cited

City of Murrieta. 2011. *Murrieta General Plan 2035*. Accessed August 2018. <https://www.murrietaca.gov/departments/planning/general.asp>.

4.15 Utilities and Service Systems

This section describes the existing utilities setting of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Costco/Vineyard II Retail Development Project (project). This analysis was completed, in part, based on a Master Water Study (Appendix J-1) and a Master Sewer Study (Appendix J-2), which were prepared to assist Eastern Municipal Water District (EMWD) in its evaluation of impacts of the proposed project and the immediately adjacent projects (i.e., Vineyard I and Vineyard III [also referred to as the “related projects” for the purposes of this analysis]) on water and sewer infrastructure in the vicinity of the project site. Additionally, this analysis is in part based on a Design Conditions Plan (formerly referred to as a Plan of Service) (EMWD 2019a) prepared by EMWD for the proposed project and related projects, which incorporates the Master Water Study and Master Sewer Study. Lastly, this analysis references two project-specific water quality management plans (Appendices G-3 and G-4).

4.15.1 Existing Conditions

Wastewater

Sewer System

Eastern Municipal Water District

The proposed project would be in EMWD’s service area for sewer services. EMWD wastewater collection systems include 1,534 miles of gravity sewer, 53 lift stations, and 4 regional water reclamation facilities (RWRFs) that treat municipal sewage and produce water for recycling, with interconnections between local collection systems serving each treatment plant. The four RWRFs—San Jacinto Valley, Moreno Valley, Temecula Valley, and Perris Valley—are spread throughout EMWD’s service area. While the majority of the project’s wastewater would be treated at the Perris Valley RWRf, interconnections between the local collections systems serving each treatment plant allow system operators to route wastewater to other RWRFs for operational flexibility and improved reliability. As presented in Table 4.15-1, in fiscal year 2018/2019, the Perris Valley RWRf treated 15,468 acre-feet of wastewater and has a current capacity of 24,600 acre-feet per year (AFY) (EMWD 2020). In total, the four RWRFs treated 50,439 acre-feet of wastewater flows in fiscal year 2018/2019 and have a combined capacity to treat up to 84,100 acre-feet of wastewater flows per year (EMWD 2020).

Table 4.15-1. EMWD Treatment Facilities – Capacity and Flow

Treatment Plant	Level of Treatment	Flow in Fiscal Year 2018/2019 (AFY)	Capacity (AFY)	Ultimate Capacity (AFY)
San Jacinto Valley RWRf	Secondary	6,725	15,700	30,300
Moreno Valley RWRf	Tertiary	12,554	17,900	46,000
Perris Valley RWRf	Tertiary	15,468	24,700	112,000
Temecula Valley RWRf	Tertiary	15,692	25,800	31,400
Total		50,439	84,100	219,700

Source: EMWD 2020.

Notes: AFY = acre-feet per year; RWRf = regional water reclamation facility.

Project Vicinity

Within the immediate project vicinity, there is an existing 12-inch gravity sewer line located within Clinton Keith Road. As part of the Vineyard I project, an 8-inch gravity sewer line would be constructed within the future Warm Springs Parkway, which would be extended further within Warm Springs Parkway as part of the project. Upon final build-out, wastewater from the project site would be conveyed by the future 8-inch gravity sewer line into the existing 12-inch gravity sewer line in Clinton Keith Road. The 12-inch gravity sewer line within Clinton Keith Road eventually flows to a 15-inch gravity sewer line in Whitewood Road, which in turn eventually flows to the Perris Valley RWRf.

Water

Eastern Municipal Water District

Water connection services within the City of Murrieta (City) are provided by four water districts: Rancho California Water District, Elsinore Valley Municipal Water District, Western Municipal Water District, and EMWD. The project site is within the service boundary of EMWD. EMWD serves a 555-square-mile service area in western Riverside County (County) and in most areas provides retail water and sewer service. EMWD also provides wholesale and retail water service to multiple subagencies including the Rancho California Water District.

As stated in EMWD's 2015 UWMP (revised 2016) (EMWD UWMP), EMWD has four sources of water supply: imported water from Metropolitan Water District of Southern California (MWD), local groundwater, desalinated groundwater, and recycled water. Delivery points for each source of water are located throughout the EMWD service area. Potable imported water is treated and delivered to EMWD directly from MWD's two large filtration plants. The Henry J. Mills (Mills) Water Treatment Plant treats water from Northern California and provides it to EMWD through two connection points located in the northeast portion of EMWD's service area. The Robert F. Skinner (Skinner) Water Treatment Plant treats a blend of Colorado River water and water from Northern California and provides it to EMWD through a connection point in the southwest portion of EMWD's service area. EMWD owns and operates two microfiltration plants that filter raw imported water delivered through MWD, removing particulate contaminants to achieve potable water standards. The two treatment plants—the Perris Water Filtration Plant and the Hemet Water Filtration Plant—are located in Perris and Hemet, respectively. Raw water from MWD is also used for groundwater replenishment in the eastern part of EMWD. EMWD and others can extract this water at a later date for beneficial uses. Untreated water from MWD used for agricultural purposes is delivered in the northeast for use by EMWD retail and wholesale accounts and in the south for Rancho California Water District agricultural accounts. EMWD produces potable and brackish groundwater from the San Jacinto Groundwater Basin that underlies the EMWD service area. Groundwater wells are mostly located within the San Jacinto Watershed and serve the northern portion of EMWD, with the largest amount of production taking place around the cities of Hemet and San Jacinto. EMWD owns and operates two desalination plants in Sun City—the Menifee Desalter and the Perris I Desalter—which treat brackish groundwater through reverse osmosis to achieve potable water standards. In addition to the potable system, EMWD maintains a regional recycled water system that provides tertiary-treated recycled water to customers for agricultural, landscape irrigation, environmental, and industrial use. EMWD's recycled water system consists of four regional RWRfS that treat municipal sewage and produce water for recycling. As stated in the EMWD UWMP, EMWD's recycled water distribution system includes 135 miles of large diameter transmission pipelines, 6,000 acre-feet of surface storage reservoirs (10 separate sites), and 4 regional pumping plants.

EMWD's UWMP includes plans for provision of water (including drought scenarios) for EMWD's service area. The plan uses regional population, land use plans, and projections of future growth as the basis of planning for future water supply and demonstrating compliance with state water conservation goals and policies. To track new developments, EMWD

updates a geographic information system database that tracks proposed development quarterly. While EMWD is constantly updating its water supply portfolio and developing local resources to meet future demand, it comprehensively updates its UWMP on a 5-year basis to include all new land use patterns and development.

According to the EMWD UWMP, EMWD has the supply needed to meet current and projected water demands through 2040 during normal, historic single-dry, and historic multiple-dry year periods. The conclusion is based on the assurances of MWD that it would be able to supply member agency demands; the reliability of local groundwater supplies achieved through groundwater management plans; and the development of recycled water resources. Therefore, according to the MWD UWMP and the EMWD UWMP, there is available water to meet all of the region's anticipated demand, even in historic single-dry, and historic multiple-dry years, as shown in Table 4.15-2.

Table 4.15-2. Supply and Demand Comparison (Acre-Feet per Year)

Supply and Demand		2020	2025	2030	2035	2040
<i>Average Year (Retail and Wholesale Combined)</i>						
Supply totals		197,901	218,700	235,800	252,600	268,200
Demand totals		197,901	218,700	235,800	252,600	268,200
Difference		0	0	0	0	0
<i>Historic Single-Dry Year (Retail and Wholesale Combined)</i>						
Supply totals		224,800	248,600	268,100	287,200	305,000
Demand totals		224,800	248,600	268,100	287,200	305,000
Difference		0	0	0	0	0
<i>Historic Multiple-Dry Years Scenario (Retail and Wholesale Combined)</i>						
First Year	Supply totals	224,800	248,600	268,100	287,200	305,000
	Demand totals	224,800	248,600	268,100	287,200	305,000
	Difference	0	0	0	0	0
Second Year	Supply totals	191,000	210,100	225,600		244000
	Demand totals	191,000	210,100	225,600		244000
	Difference	0	0	0	0	0
Third Year	Supply totals	201,500	220,100	236,200	251,500	266600
	Demand totals	201,500	220,100	236,200	251,500	266600
	Difference	0	0	0	0	0

Source: EMWD 2016.

Recycled water production and sales reduce the demand for imported water and provide a sustainable supply. EMWD's continued investment in improved facilities will continue to grow the market for recycled water, and innovative planning and recycled water management will allow EMWD's recycled water supply to bring an even greater benefit to the service area. In addition to the development of local resources, EMWD promotes the efficient use of water. Through the implementation of local ordinances, conservation programs, and an innovative tiered pricing structure, EMWD is reducing demand by retail accounts. Reducing demand allows existing and proposed water supplies to stretch farther and reduces the potential for water supply shortage (EMWD 2016).

While Policy INF-2.3 of the Murrieta General Plan 2035 states that it is a policy of the City to require installation of recycled water systems for landscaping unless there is an exemption from the applicable water district, EMWD has determined that the project is not a candidate for recycled water due to the absence of recycled water infrastructure within the project area (EMWD 2019a).

Project Vicinity

Within the immediate project vicinity, there is an existing 18-inch water line located within Clinton Keith Road. As part of the Vineyard I project, a 12-inch water line would be constructed within the future Warm Springs Parkway, which would be extended further within Warm Springs Parkway as part of the project. Upon final build-out, the project site would receive water from this future 12-inch water line within Warm Springs Parkway by way of the 18-inch wastewater line within Clinton Keith Road.

Stormwater

Surface runoff from the project site flows toward a network of improved and natural streams, storm channels, storm drains, and catch basins. These facilities are maintained by the Riverside County Flood Control and Water Conservation District and the City. Regional master-planned facilities are owned and maintained by the Riverside County Flood Control and Water Conservation District, and all non-master-planned facilities are maintained by the City. The drainage facilities in the vicinity of the project site flow to Warm Springs Creek through tributary creeks, including south-trending Stone Creek, approximately 1,200 feet west of the site, and a southeast-trending creek approximately 1,500 feet northeast of the project site. Warm Springs Creek in turn flows into Murrieta Creek approximately 5 miles south of the project site. Murrieta Creek extends approximately 14 miles to the Santa Margarita River, which eventually drains to the Pacific Ocean. Both Warm Springs and Murrieta Creeks remain in a semi-natural state, with areas of substantial native vegetation occurring along portions of each.

To minimize detrimental effects of stormwater pollution, the City implements a Stormwater Management Plan that identifies methods to reduce potential stormwater runoff and the contribution of pollutants to the storm drain system from industrial, commercial, residential, and municipal sources (City of Murrieta 2011a).

Project Vicinity

Within the immediate project vicinity, there are three existing off-site storm drains that currently receive stormwater runoff from the project site. The points at which these storm drains begin (i.e., where runoff from the project site is collected) are individually marked as Point of Compliance (POC) A, POC-B, and POC-C on Figure 3-5, Proposed Storm Drain System. POC-A marks the beginning of a 24-inch storm drain located within the intersection of Clinton Keith Road and the vacated Antelope Road, southwest of the project site. Stormwater flows are collected via catch basins and conveyed west into a storm drain line within Interstate 215. POC-B marks the beginning of a 48-inch storm drain located southeast of the project site, along the eastern border of the Vineyard I site. Stormwater flows are collected via a culvert and conveyed east through the adjacent residential development. POC-C marks the beginning of a 36-inch storm drain line located at the eastern terminus of Cape Aire Way. Stormwater flows are collected via a catch basin with grates and are conveyed east through the adjacent residential development.

As part of the project, an 18-inch off-site storm drain line would be installed underground from the project site's southwestern terminus towards POC-A, and a 24-inch off-site storm drain line would be installed underground from the project site's northeastern terminus towards POC-C. As part of the Vineyard I development, drainage improvements would be made along the Vineyard I site's eastern boundary such that stormwater flows discharged from the project site's southwestern bio-retention basin could be conveyed south towards POC-C without the need for additional off-site improvements.

Solid Waste

Solid Waste Collection and Disposal Systems

The collection, transport, and disposal of solid waste and recyclables from business uses in the City are provided by Waste Management Incorporated. The majority of solid waste generated within the City for construction and operation is disposed of at El Sobrante Landfill (Ramaiya, pers. comm. 2019). The El Sobrante Landfill is located midway between Lake Elsinore and Corona along Interstate 15. Badlands Sanitary Landfill and Lamb Canyon Landfill also dispose of a portion of the City’s solid waste. These three landfills have a combined remaining capacity of 161 million tons, as detailed in Table 4.15-3.

Table 4.15-3. Existing Landfills

Landfill	Location	Estimated Close Date	Maximum Permitted Daily Load (tons/day)	Maximum Permitted Capacity (cubic yards)	Current Remaining Capacity (cubic yards)
El Sobrante Landfill	10910 Dawson Canyon Road Corona, California	2051	16,054	209.9 million	143.9 million as of April 2018
Badlands Landfill	31125 Ironwood Avenue Moreno Valley, California	2022 ¹	4,800	34.4 million	15.7 million as of January 2015
Lamb Canyon Landfill	16411 Lamb Canyon Road (SR-79) San Jacinto, California	2029	5,000	38.9 million	19.2 million as of January 2015
Total			25,854	283.2 million	178.8 million

Sources: CalRecycle 2019a, 2019b, 2019c.

Note: The Riverside County Department of Waste Resources is currently in the planning process of expanding the disposal footprint from 150 acres to 396 acres (in multiple stages), thereby providing an additional 50 years of landfill capacity (RCDWR 2019).

Electric Power

Southern California Edison (SCE) provides electricity to the project. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across central and Southern California. According to the California Public Utilities Commission (CPUC), approximately 84 billion kilowatt-hours of electricity were used in SCE’s service area in 2017. Demand forecasts anticipate that approximately 75 billion kilowatt-hours of electricity will be used in SCE’s service area in 2020 (CPUC 2018). In 2017, the non-residential electricity demand was 8,346,000 megawatt-hours for the County (ECDMS 2019).

SCE receives electric power from a variety of sources. According to CPUC’s 2018 California Renewables Portfolio Standard Annual Report, 32% of SCE’s power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018). The California Energy Commission estimates that about 29% of the state’s electricity retail sales in 2017 came from renewable energy (ECDMS 2019). The California Renewables Portfolio Standard (RPS) Program establishes a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010, and to 33% by 2020. Recent legislation revised the current RPS target for California to obtain 50% of total retail electricity sales from renewable sources by 2030, with interim targets of 40% by 2024, and 45% by 2027 (CPUC 2016).

The City is served by a total of three existing substations, with the substation serving the project site being the Auld Substation, located east of the project site at the southwest intersection of Clinton Keith Road (SCE 2020a). The Auld Substation transforms an incoming 115-kilovolt (kV) electrical current into a 12 kV current, which is distributed to the substation's end users via a network of underground and aboveground electrical lines. The Auld Substation has a total generation capacity of 35.19 megawatts (MW), and currently generates 31.77 MW.

In order to ensure to ensure projected supply meets demand, SCE tracks planned development and coordinates with the California Independent System Operator. The California Independent System Operator is an independent grid operator that manages the flow of electricity across 80% of California (including the project site). Every 5 minutes, the California Independent System Operator forecasts electrical demand and dispatches the lowest cost generator to meet demand while ensuring enough transmission capacity for delivery of power.

Project Vicinity

Within the immediate vicinity of the project site, existing 12 kV electrical lines are located within Clinton Keith Road and the portion of Antelope Road south of Linnel Lane to the project's northern boundary.

SCE has determined that portions of its existing infrastructure serving the project area are near or at their operating limits, and SCE is in the planning process to construct improvements in the area to maintain sufficient capacity for system reliability (SCE 2020b). SCE has initiated the process to expand transmission in the general project area. Notably, the Valley South Subtransmission Line Project, which will serve the project area, has been approved and is under construction.

The Valley South Subtransmission Project will upgrade the existing electrical infrastructure in the project area and improve overall electrical reliability. Construction of this transmission project is anticipated to be completed in late 2020. Upon completion, the Valley South Subtransmission Project would add electric capacity to serve long-term forecasted electrical demand requirements in the "electrical needs area" of Menifee, Murrieta (including the project site), Temecula, Wildomar, and portions of unincorporated communities of southwestern Riverside County.

The Valley Ivyglen Subtransmission Line Project and the Fogarty Substation Project are other approved SCE projects under construction that will increase the capacity of SCE's system in the greater project area. SCE will continue to monitor development in the greater project area, and will plan for other expanded transmission projects as needed. Any potential impacts associated with construction of other additional future transmission facilities (if needed) will be analyzed in accordance with CEQA by the CPUC, which is the lead agency tasked with approval of projects involving construction of investor-owned utilities infrastructure.

Natural Gas

Natural gas service is provided by the Southern California Gas Company (SoCalGas). The territory serviced by SoCalGas encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03% in SoCalGas's service territory. As of 2017, approximately 7.2 billion therms were used in SoCalGas's service area per year, or 19.7 million therms per day. At project build-out (2021), natural gas demand is anticipated to be approximately 7.9 billion therms per year, or 21.6 million therms per day, in SoCalGas's service area (CEC 2018b). The total capacity of natural gas available to SoCalGas in 2016 is estimated to have been 3.9 billion cubic feet per day. In 2021, the total capacity available is also estimated to be 3.9 billion cubic feet per day¹ (California Gas and

¹ One cubic foot of natural gas has approximately 1,020 BTUs of natural gas or 1.02 kBtus of natural gas.

Electric Utilities 2016). This amount is approximately equivalent to 3.98 billion thousand British thermal units (kBTU) per day, 39.8 million therms per day. Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in the area serviced by SoCalGas.

Project Vicinity

Within the immediate vicinity of the project site, there is an existing 6-inch gas line located within Clinton Keith Road (Excel Engineering 2019). As part of the Vineyard I project, this line would be extended within the future Warm Springs Parkway, and would be extended further within Warm Springs Parkway as part of the project. Upon final build-out, the project site would receive gas from this future gas line within Warm Springs Parkway.

Telecommunications

There are a number of service providers in the City that provide telecommunications services (i.e., landline phone service, internet service, and cable television service), including Frontier Communications and Time Warner Cable. These companies are private companies that provide connections to their communication systems on an as-needed basis, and maintain existing infrastructure in the vicinity of the project site. Telecommunication services to the project site would be provided by Frontier Communications (landline phone service and internet service) and Time Warner Cable (cable television service).

Project Vicinity

Within the immediate vicinity of the project site, Frontier Communications maintains an existing telephone line within Clinton Keith Road, and Time Warner Cable maintains an existing cable television line within Clinton Keith Road and within Antelope Road. As part of the Vineyard I project, the Frontier telephone line would be extended within the future Warm Springs Parkway, and as part of the proposed project it would be extended further within Warm Springs Parkway. The Time Warner Cable television line would be extended onto the project laterally from Antelope Road.

4.15.2 Relevant Plans, Policies, and Ordinances

Federal

Clean Water Act

In 1972, the federal Water Pollution Control Act (Clean Water Act [CWA]) was amended to prohibit the discharge of pollutants to navigable waters of the United States unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The CWA focused on tracking point sources, primarily from wastewater treatment facilities and industrial waste dischargers, and required implementation of control measures to minimize pollutant discharges. The CWA was amended again in 1987, adding Section 402(p), to provide a framework for regulating municipal and industrial stormwater discharges. In November 1990, the U.S. Environmental Protection Agency published final regulations that establish application requirements for specific categories of industries, including construction projects that encompass 5 acres or more of land. The Phase II Rule became final in December 1999, expanding regulated construction sites to those 1 acre or larger. The regulations require that stormwater and non-stormwater runoff associated with construction activity that discharges either directly to surface waters or indirectly through Municipal Separate Storm Sewer Systems must be regulated by an NPDES permit.

National Pollutant Discharge Elimination System

The City is under the jurisdiction of the San Diego Regional Water Quality Control Board (RWQCB) Region 9, which implements the NPDES permit for San Diego, Imperial, and Riverside Counties. The Municipal NPDES permit, a requirement under the CWA, addresses pollution from urban runoff that impacts water quality of receiving waters (such as streams and lakes). Under the NPDES permit, developers must implement measures to reduce urban runoff during all phases of development: planning, construction, and existing uses. Requirements include incorporating best management practices (BMPs) to reduce runoff from construction and current uses, reporting any violations to the San Diego RWQCB, and education regarding the negative water quality impacts of urban runoff.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (40 CFR 268, Subpart D) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs that include federal landfill criteria. The federal regulations address the location, operation, design, and closure of landfills, as well as groundwater monitoring requirements.

State

Porter-Cologne Water Quality Control Act

In the State of California, the State Water Resources Control Board (SWRCB) and nine RWQCBs are responsible for implementing the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act authorizes the SWRCB to implement programs to control polluted discharges into state waters. In compliance with the Porter-Cologne Act, the nine RWQCBs establish the wastewater concentrations of a number of specific hazardous substances in treated wastewater discharge.

Sanitary Sewer General Waste Discharge Requirements

On May 2, 2006, the SWRCB adopted a General Waste Discharge Requirement (Order No. 2006-0003) for all publicly owned sanitary sewer collection systems in California with more than 1 mile of sewer pipe. The order provides a consistent statewide approach to reducing sanitary sewer overflows by requiring public sewer system operators to take all feasible steps to control the volume of waste discharged into the system in order to prevent sanitary sewer waste from entering the storm sewer system, and to develop a sewer system management plan. The General Waste Discharge Requirement also requires that storm sewer overflows be reported to the SWRCB using an online reporting system. EMWD's most recent sewer system management plan was approved by EMWD's Board of Directors in 2019 (EMWD 2019b). The sewer system management plan provides EMWD staff with an operational plan to safely operate its wastewater treatment system, and includes protocols to satisfy state regulatory requirements.

Senate Bill 610 and Senate Bill 221: Water Supply Assessments

Senate Bills (SB) 610 and 221, amended into state law effective January 1, 2002, require the linkage between certain land use decisions made by cities and counties and water supply availability. The statutes require detailed information regarding water availability and reliability with respect to certain developments to be included in the administrative record to serve as evidentiary basis for an approval action by the city or county on such projects. Under SB 610, a water supply assessment must be furnished to the local government for inclusion in any environmental documentation for certain types of projects, as defined in Water Code Section 10912 [a] and as subject to CEQA. A fundamental source document for compliance with SB 610 is the UWMP. The UWMP can be

used by the water supplier to meet the standard for SB 610. SB 221 applies to the Subdivision Map Act, requiring applicants, per a tentative map, to verify that the public water supplier has sufficient water available to serve the proposed development.

California Code of Regulations Title 24, Part 11

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code, Part 11 of Title 24, is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all new construction of residential and nonresidential buildings. CALGreen standards are updated periodically. The latest version (CBSC 2019) became effective on January 1, 2020.

Mandatory CALGreen standards pertaining to water, wastewater, and solid waste include the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings.
- Mandatory reduction in outdoor water use through compliance with a local water-efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance.
- Diversion of 65% of construction and demolition waste from landfills.

California Code of Regulations Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the California Energy Commission to demonstrate compliance with standards. New appliances regulated under Title 20 include, but are not limited to, refrigerators, freezers, air conditioners, dishwashers, clothes washers and dryers, cooking products, televisions, and consumer audio and video equipment. Title 20 presents protocols for testing for each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Executive Order B-29-15

In response to the ongoing drought in California, Executive Order (EO) B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives became permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Assembly Bills 939 and 341: Solid Waste Reduction

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) was enacted as a result of a national crisis in landfill capacity, as well as a broad acceptance of a desired approach to solid waste management of reducing, reusing, and recycling. AB 939 mandated local jurisdictions to meet waste diversion goals of 25% by 1995 and 50% by 2000, and established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. AB 939 requires cities and counties to prepare, adopt, and submit to the California Department of Resources Recycling and Recovery (CalRecycle) a source reduction and recycling element to demonstrate how the jurisdiction will meet the diversion goals. Other elements included encouraging resource conservation and considering the effects of waste management operations. The diversion goals and program requirements are implemented through a disposal-based reporting system by local jurisdictions under California Integrated Waste Management Board (CIWMB) regulatory oversight. Since the adoption of AB 939, landfill capacity is no longer considered the statewide crisis it once was. AB 939 has achieved substantial progress in waste diversion, program implementation, solid waste planning, and protection of public health, safety, and the environment from landfill operations and solid waste facilities.

In 2011, AB 341 was passed, requiring CalRecycle to require that local agencies adopt strategies that will enable 75% diversion of all solid waste by 2020.

Assembly Bill 1327: California Solid Waste Reuse and Recycling Access Act of 1991

AB 1327, which was established in 1991, required CalRecycle to develop a model ordinance for the use of recyclable materials in development projects. Local agencies were then required to adopt the model ordinance, or an ordinance of their own, governing adequate areas for collection and loading of recyclable materials in development projects.

Senate Bill 1374: Construction and Demolition Waste Reduction

SB 1374 requires that annual reports submitted by local jurisdictions to CIWMB include a summary of the progress made in diversion of construction and demolition waste materials. In addition, SB 1374 required the CIWMB to adopt a model ordinance suitable for adoption by any local agency that required 50% to 75% diversion of construction and demolition waste materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt CIWMB's model by default. However, adoption of such an ordinance may be considered by CIWMB when determining whether to impose a fine on a jurisdiction that has failed to implement its Source Reduction and Recycling Element.

Assembly Bill 1826: Mandatory Commercial Organics Recycling

In October 2014, Governor Brown signed AB 1826 Chesbro (Chapter 727, Statutes of 2014), requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste generated per week. (Organic waste is defined as food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.) This law also requires local jurisdictions across the state to implement an organic waste recycling program to divert organic waste generated by businesses, including multi-family residential dwellings that consists of five or more units. This law phases in the mandatory recycling of commercial organics over time. In particular, the minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector will be required to recycle organic waste.

California Code of Regulations, Titles 14 and 27

Title 14 (Natural Resources, Division 7) and Title 27 (Environmental Protection, Division 2 [Solid Waste]) of the California Code of Regulations govern the handling and disposal of solid waste and operation of landfills, transfer stations, and recycling facilities.

Protection of Underground Infrastructure

California Government Code, Section 4216 et seq., requires an excavator to contact a regional notification center (e.g., Underground Service Alert or Dig Alert) at least 2 days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert Southern California, the regional notification center for Southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of a project site. Representatives of the utilities, once notified, are required to mark the specific locations of their facilities within the work area prior to the start of project activities.

Local

Water Quality Control Plans

The Porter-Cologne Act, Section 13000, directs each RWQCB to develop a water quality control plan (Basin Plan) for all areas within its region. The Basin Plan is the basis for each RWQCB's regulatory program. The project site is located within the purview of the San Diego RWQCB, Region 9, and the proposed project must comply with applicable elements of the Basin Plan for Region 9. The Basin Plan gives direction on the beneficial uses of state waters, describes the water quality that must be maintained, and provides programs necessary to achieve the standards established in the Basin Plan.

Stormwater Pollution Prevention Plans

The SWRCB administers the NPDES permit program regulating stormwater from construction activities for projects with a disturbed area of 1 acre or more. The SWRCB has issued a statewide general NPDES permit for stormwater discharges from construction sites (Order No. 2009-0009-DWQ, as amended; NPDES No. CAS000002). Under this Statewide General Construction Activity permit, discharges of stormwater from construction sites with a disturbed area of 1 acre or more are required to either obtain individual NPDES permits for stormwater discharges or be covered by the Statewide General Construction Activity permit. In order to obtain coverage under the Statewide General Construction Activity permit, a Notice of Intent must be filed with the SWRCB, and a stormwater pollution prevention plan must be developed and implemented. The stormwater pollution prevention plan must be prepared prior to ground disturbance and must be implemented during construction. The stormwater pollution prevention plan must also list BMPs to be implemented on the construction site to protect stormwater runoff and must contain a visual monitoring program, a chemical monitoring program, and a monitoring plan if the site discharges directly to a water body listed on the state's list of impaired waters.

EMWD Facilities Master Plan and Capital Improvement Plan Efforts

EMWD addresses its long-term planning efforts through the development of a long-term capital plan, which serves as a fundamental roadmap of required water, recycled water, and water reclamation facilities needed to support the build out of existing jurisdictional general plans throughout its service area. EMWD's Long-Term Capital Plan relies on EMWD's four facilities master plans, which include the Water Facilities Master Plan, Recycled Water Facilities Master Plan, Wastewater Facilities Master Plan, and Regional Water Reclamation Facilities Master Plan.

These four facilities master plans are based on historical and projected demands in the EMWD's service area, and are used to assess EMWD's ability to meet future and current needs, assess the need for system upgrades, and identify future system improvements needed to satisfy current and future user demand. The four facilities master plans are used as the basis for developing a 5-Year, 10-Year, and Build-Out Capital Improvement Program (CIP). Within EMWD's CIPs, EMWD identifies the water, sewer, recycled water, and other infrastructure projects that will be necessary to accommodate future build-out of the jurisdictional General Plans in its service area. Additionally, each year, EMWD updates its CIPs based on the then-current available growth information, which includes a comprehensive list of all development projects in its service area. This process ensures the list of CIP projects needed to accommodate growth are developed just in time, while allowing EMWD to be flexible and responsive to development patterns. CIP projects are subject to approval by EMWD's Board of Directors, and EMWD, as the lead agency, is responsible for environmental review pursuant to CEQA as projects are implemented.

Urban Water Management Plans

Urban water purveyors are required to prepare and update a UWMP every 5 years. UWMPs are prepared by California's urban water suppliers to support long-term resource planning and ensure adequate water supplies. Every urban water supplier that either delivers more than 3,000 AFY of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year period under normal-year, dry-year, and multiple-dry-year scenarios in an UWMP. UWMPs must be updated and submitted to the California Department of Water Resources every 5 years for review and approval. The proposed project site is within the area addressed by the EMWD UWMP. The site is also located within the area covered by the MWD UWMP, another relevant water planning document. The EMWD UWMP takes into account the projections and findings of the MWD UWMP. The UWMP Act (California Water Code Section 10631) specifies the data necessary to document the existing and projected future water demand over a 20-year planning horizon and requires that the projected demands be presented in 5-year increments.

Integrated Regional Water Management Plans

UWMPs serve as building blocks for integrated regional water management plans (IRWMPs). IRWMPs define a clear vision and strategy for the sustainable management of water resources within a specific region delineated by one or more watersheds. IRWMPs generally contain an assessment of current and future water demand, water supply, water quality, and environmental needs. They address the challenges for delivering a stable and clean supply of water for the public, addressing stormwater and urban runoff water quality, providing flood protection, meeting water infrastructure needs, maximizing the use of reclaimed water, enhancing water conservation, and promoting environmental stewardship.

During the planning process, all stakeholders, including water distributors and purveyors, regional waterworks and sanitation districts, local public works departments, environmental organizations, nonprofits, and other vested interests work together to develop common goals, objectives, and strategies. Since water-related issues are addressed on a regional, watershed basis, these plans are instrumental in building consensus among the various stakeholders in the development and prioritization of an action plan that is complementary and leverages inter-jurisdictional cooperation, resources, and available funding. The project site is within the Upper Santa Margarita IRWMP area. The IRWMP for this area was last updated in 2014.

Riverside County Flood Control and Water Conservation District – Master Drainage Plans and Area Drainage Plans

Stormwater from the project site would ultimately flow into Warm Springs Creek and Murrieta Creek, which are regional master-planned facilities owned and maintained by the Riverside County Flood Control and Water Conservation District (RCFCWCD 2020). Master-planned facilities that are owned and operated by the Riverside County Flood Control and Water Conservation District are subject to the district's Master Drainage Plans and Area Drainage Plans. Master drainage plans addresses the current and future drainage needs of a given community and were created with the intention of providing for the orderly development of the County's drainages. Master Drainage Plans also establish Area Drainage Plan fees for a given community, which prevent existing taxpayers from having to shoulder the burden of land development costs. Accordingly, an Area Drainage Plan is a financing mechanism used to offset taxpayer costs for proposed drainage facilities. The fees are imposed on new development within the Area Drainage Plan area. Because the project would contribute stormwater into Warm Springs Creek and Murrieta Creek (which are facilities within the Murrieta Valley and Warm Springs Valley sub-watersheds and part of the Murrieta Creek Area Drainage Plan), the project would be responsible for payment of fees pursuant to the Murrieta Creek Area Drainage Plan (RCFCWCD 1986).

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989, also known as AB 939, requires that each city or county prepare a new integrated waste management plan. The act further required each city to prepare a Source Reduction and Recycling Element by July 1, 1991. Each Source Reduction and Recycling Element includes a plan for achieving a solid waste reduction goal of 25% by January 1, 1995, and 50% by January 1, 2000. A number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act were adopted, including a revision to the statutory requirement for 50% diversion of solid waste. In 2011, AB 341 was passed, requiring CalRecycle to require local agencies to include strategies to enable the diversion of 75% of all solid waste by 2020. In 2017, the City's and County's reported waste diversion rate were in compliance with disposal rate requirements in the Integrated Waste Management Act (Ramaiya, pers. comm. 2019; CalRecycle 2019d).

Landscaping Standards and Water Efficient Landscaping

The City Municipal Code Section 16.28 – Landscaping Standards and Water Efficient Landscaping, is in place to promote water efficient landscaping and conservation through the use of appropriate technology and management. The following list identifies general provisions of this ordinance (Ord. 443 Section 3, 2010; Ord. 182 Section 2 (part), 1997):

- A. All landscape plan approvals are subject to and dependent upon the applicant complying with all applicable city ordinances, codes, regulations, and adopted policies.
- B. If the water purveyor for a proposed project has adopted more restrictive water efficient landscaping requirements, all landscaping and irrigation plans submitted shall comply with the water purveyor's requirements. Said plans shall be accompanied by a written document from the water purveyor delineating the more restrictive requirements.
- C. Landscape design shall facilitate the implementation of landscape maintenance practices which foster long-term water conservation and plant viability. These practices may include, but not be limited to, scheduling irrigation based on established industry standards, conducting irrigation audits and establishing a water budget to limit the amount of water applied per landscape acre.

- D. Landscaping for fuel modification zones shall be subject to standards required by the City's Fire Department, and they shall include plant materials, plant spacing, and irrigation as directed by the Fire Department, in consultation with the Community Development Department, and/or Community Services Department.
- E. Landscaping adjacent to the Western Riverside County Multi-Species Habitat Conservation Plan ("MSHCP") conservation areas shall avoid invasive species as listed in the MSHCP.
- F. To the extent feasible, existing mature trees that represent the existing significant landscaping elements shall be preserved as identified in Chapter 16.42 (Tree Preservation).
- G. In the event covenants, conditions, and restrictions are required by the city for any permit subject to this chapter, a condition shall be incorporated into any project approval prohibiting the use of water-intensive landscaping and requiring the use of low water use landscaping pursuant to the provisions of this chapter in connection with common area/open space landscaping. Additionally, such a condition shall also require the covenants, conditions, and restrictions to incorporate provisions concerning landscape irrigation system management and maintenance. Covenants, conditions, and restrictions shall not prohibit use of low-water use plants. Covenants, conditions, and restrictions shall not prohibit the replacement of natural turf with less water-intensive plant species.

The following EMWD water conservation policies, practices, and procedures were originally adopted in 1991, and have been periodically modified to provide long-term water reliability for existing and future customers (EMWD 2019c):

- 1. Hosing down driveways and other hard surfaces is prohibited except for health or sanitary reasons.
- 2. Repair water leaks within 48 hours of occurrence.
- 3. Irrigate landscape only between 9:00 p.m. and 6:00 a.m. except when:
 - a. manually watering;
 - b. establishing new landscape;
 - c. temperatures are predicted to fall below freezing;
 - d. it's for very short periods of time to adjust or repair an irrigation system.
- 4. Unattended irrigation systems using potable water are prohibited unless they are limited to no more than fifteen (15) minutes watering per day, per station. This limitation can be extended for:
 - a. Very low flow drip irrigation systems when no emitter produces more than two (2) gallons of water per hour.
 - b. Weather based controllers or stream rotor sprinklers that meet 70% efficiency.
 - c. Run-off or over watering is not permitted in any case.
- 5. Irrigation systems operate efficiently and avoid over watering or watering of hardscape and the resulting runoff.
- 6. Excessive water flow or runoff is prohibited.
- 7. Decorative fountains must be equipped with a recycling system.
- 8. Allowing water to run while washing vehicles is prohibited.
- 9. Install new landscaping with low-water demand trees and plants. New turf shall only be installed for functional purposes.
- 10. Watering during rain is prohibited.
- 11. The requirements listed above should be followed at all times.

Mandatory Water-Efficient Landscaping Requirements

EMWD's water conservation policies, practices, and procedures also include Mandatory Water-Efficient Landscaping Requirements, identified below (EMWD 2019c):

- EMWD requires a separate dedicated meter for all landscape areas greater than or equal to 3,000 square feet, except for single family residential accounts.
- The efficient use of water should be considered in the design of any new landscape area. The District [EMWD] will calculate an Annual Maximum Allowable Water Budget (AMAWB) for customers that request a new account.
- Prior to the issuance of a meter, the new customer shall calculate a water budget for each landscape area and submit it to the District [EMWD] for review.
- New accounts that have to comply with similar or more stringent water use efficiency measures imposed by County and/or City Ordinances, do not need to comply with the above requirements, but do need to provide information about the landscape areas to the District [EMWD].

Water Shortage Contingency Plan (Title 5, Article 10 EMWD Administrative Code)

In accordance with Water Code 10632 requirements, EMWD is responsible for conserving the available water supply, protecting the integrity of water supply facilities, and implementing a contingency plan in times of drought, supply reductions, failure of water distribution systems, or emergencies.

Therefore, EMWD adopted the Water Shortage Contingency Plan to regulate the delivery and consumption of water use during water shortages. EMWD's Board of Directors has the authority to initiate or terminate the water shortage contingency measures described in the Water Shortage Contingency Plan.

EMWD will implement an appropriate stage based on current water conditions, such as the following:

- EMWD water supply conditions and storage levels.
- Statewide water supply conditions.
- Local water supply and demand conditions.
- MWD Water Supply Allocation Plan implementation or other actions requiring a reduction in water demand.
- Actions by surrounding agencies.

Higher stages will be implemented as shortages continue and/or if customer response does not bring about desired water savings. Restrictions, penalties, and enforcement will build on each other as higher stages are implemented.

City of Murrieta – Sewer Connection Fees

In the City, each water district is responsible for collecting connection and user fees for the purpose of increasing the strength or quantity of wastewater discharged from connected facilities. The connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the sewer system to accommodate a development project. Payment of connection fees is required before sewer connection permits are issued.

City of Murrieta Solid Waste/Recyclable Materials Storage

The City Municipal Code Ordinance 16.18.150 provides standards for the provision of solid waste and recyclable material storage areas in compliance with state law (California Solid Waste Reuse and Recycling Access Act, Public Resources Code Sections 42900 through 42911). The ordinance requires the following minimum storage area for nonresidential structures: 12 square feet for solid waste and 12 square feet for recycling (total 24 square feet) per 5,000 square feet of a nonresidential structure. Every 25,000 square feet beyond 100,000 square feet requires an additional 48 square feet for solid waste and 48 square feet for recyclables (City of Murrieta 2004).

Murrieta General Plan 2035 Goals and Policies

The Murrieta General Plan 2035 contains goals and policies relevant to water, sewer, stormwater, and energy infrastructure. The Infrastructure Element establishes goals and policies for effective service and facilities planning and maintenance (City of Murrieta 2011a). The Conservation Element contains goals and policies related to the efficient use of resources provided by utilities in the City (City of Murrieta 2011b). The following goals and policies pertaining to municipal utilities and resources may be applicable to the proposed project (City of Murrieta 2011a, 2011b):

Infrastructure Element

- Goal INF-1** New development and redevelopment is coordinated with the provision of adequate infrastructure for water, sewer, storm water, and energy.

- Policy INF-1.1** Encourage future development to occur in areas where infrastructure for water, sewer, and storm water can most efficiently be provided.

- Policy INF-1.2** Discourage development in areas without connections to existing infrastructure, unless infrastructure is being provided.

- Policy INF-1.4** Ensure that new development and redevelopment provides infrastructure for water, sewer, and storm water that adequately serves the proposed uses, and that has been coordinated with affected infrastructure providers.

- Policy INF-1.5** Continue to require new development and redevelopment to provide verification that energy utilities are able to accommodate the additional demand for service.

- Policy INF-1.7** Encourage the preparation and updates of master plans by the appropriate providers or agencies to conduct detailed long-range planning to ensure the efficient provision of public services, infrastructure, and/or utilities.

- Policy INF-1.8** Consult with water districts and Riverside County Flood Control and Water Conservation District (RCFCWCD) to ensure that fee structures are sufficient for new development and redevelopment to pay its fair share of the cost of infrastructure improvements for water, sewer, and storm water.

- Policy INF-1.11** Ensure sufficient levels of storm drainage service are provided to protect the community from flood hazards and minimize the discharge of materials into the storm drain system that are toxic or which would obstruct flows.

- Policy INF-1.13** Cooperate in regional programs to implement the National Pollutant Discharge Elimination System program.
- Policy INF-1.14** Continue to participate with other agencies on public education and outreach materials for countywide distribution to focus on public education and business activities with the potential to pollute. Distribute Best Management Practices (BMP) guidance for business activities, including but not limited to, mobile detailing, pool maintenance, restaurant cleaning operations, and automotive service centers.
- Policy INF-1.17** Consider incorporating water quality features into new or redevelopment projects with sufficient land area. These features could address both project-specific and other local impacts.
- Policy INF-1.18** Minimize the adverse effects of urbanization upon drainage and flood control facilities.
- Policy INF-1.19** Encourage the City and the Riverside County Flood Control and Water Conservation District to improve the storm drain system in a way that respects the environment.
- Policy INF-1.21** Encourage the use of specific plans, development agreements, or mechanisms that specify the nature, timing, cost, and financing mechanisms to be used to fund water, wastewater, and/or storm drainage improvements and services.

Goal INF-2 Infrastructure for recycled water is expanded throughout Murrieta for irrigation and other non-potable uses.

- Policy INF-2.3** Continue to require installation of recycled water systems for landscaping, unless there is an exemption from the applicable water district.

Conservation Element

Goal CSV-1 A community that conserves, protects, and manages water resources to meet long-term community needs, including surface waters, groundwater, imported water supplies, storm water, and waste water.

- Policy CSV-1.2** Promote the maximization of water supplies through conservation, water recycling, and groundwater recharge.

Goal CSV-2

- Policy CSV-2.1** Ensure that all developments comply with water efficiency requirements, as mandated by the applicable Building Code.

- Policy CSV-2.4** Promote water efficient landscaping practices through outreach efforts, project review, and enforcement of City, regional or State code requirements.

Goal CSV-3 A community that participates in a multi-jurisdictional approach to protecting, maintaining, and improving water quality and the overall health of the watershed.

Policy CSV-3.2 Promote storm water management techniques that minimize surface water runoff in public and private developments.

Policy CSV-3.3 Utilize low-impact development (LID) techniques to manage storm water through conservation, on-site filtration, and water recycling, and continue to ensure compliance with the NPDES permit

4.15.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to utilities and service systems are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to utilities and service systems would occur if the project would:

1. Require or result in the relocation or construction of new or expanded water, or wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities or expansion of existing facilities, the construction or relocation of which could cause significant environmental effects.
2. Have sufficient water supplies available to serve the project from existing entitlements and resources, and reasonably foreseeable future development during normal, dry and multiple dry years or are new or expanded entitlements needed.
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

4.15.4 Impacts Analysis

Would the project require or result in the relocation or construction of new or expanded water, or wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities or expansion of existing facilities, the construction or relocation of which could cause significant environmental effects?

Construction of New Utility Lines

Less-than-Significant Impact. As discussed above in Section 4.15.1, Existing Conditions, existing utility service lines are located within the vicinity of the project site. As part of the project, utility service lines, including those for water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications services would be extended from their current locations nearby the project site to the proposed buildings. Given that the activity of connecting utilities from their current locations (i.e., within Clinton Keith Road and Antelope Road) to the project site would require ground disturbance and the use of heavy machinery associated with trenching, the installation of these utility service lines could potentially result in environmental effects. However, the extension of these utility service lines is part of the proposed project analyzed herein. As such, any potential environmental impacts related to these components of the proposed

project are already accounted for in this draft EIR as part of the impact assessment conducted for the entirety of the project. Additionally, the project would be required to comply with all regulatory requirements and mitigation measures outlined within this draft EIR for the purposes of mitigating impacts associated with trenching activities and the use of heavy machinery. For example, as described in Section 4.8, Hydrology and Water Quality, of this EIR, project construction would occur in accordance with the requirements of the NPDES General Construction Permit (Order No. R9-2010-0016) and the Murrieta Municipal Code, which require the implementation of BMPs and pollutant control measures to minimize pollutants and reduce runoff to levels that comply with applicable water quality standards. As a result, no adverse physical effects beyond those already disclosed in this draft EIR would occur as a result of implementation of the project's proposed utility system connections.

Capacity of Water, Wastewater Treatment, Storm Water Drainage, Electric Power, Natural Gas, and Telecommunications Facilities

Less-than-Significant Impact. As discussed in further detail below, other than lateral connections to nearby utility mains, the project would not require the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities or expansion of existing facilities for the purposes of servicing the project. As such, impacts would be less than significant.

Water Service

A Master Water Study (Appendix J-1) was prepared to assist EMWD in its evaluation of the impacts of the proposed project and certain of the immediately adjacent related projects (i.e., Vineyard I and Vineyard III) on existing water service in the project area. The Master Water Study included an estimation of projected water usage by the three projects and a hydraulic analysis to evaluate the performance of the existing water distribution system with the additional water demand. Water demand calculations were completed in accordance with the EMWD Water System Planning & Design Principal Guidelines and Criteria (EMWD 2007).

Under the future demand conditions of the projects evaluated in the Master Water Study, the existing water distribution system showed no deficiencies. Calculations indicated the greatest demand would occur when maximum daily demand and fire flows combined. Under this scenario, the Master Water Study found that the existing water distribution system would be able to provide a residual 50.5 pounds per square inch of pressure, well above required the minimum requirement of 20 pounds per square inch residual, as required by EMWD's Water System Planning & Design Principal Guidelines and Criteria. As a result, the project would not directly require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. As such, impacts are considered less than significant, and no mitigation is required.

Wastewater Collection Facilities

A master sewer capacity study (Appendix J-1) was prepared to assist EMWD in its evaluation of the impacts of the proposed project and certain of the immediately adjacent related projects (i.e., Vineyard I and Vineyard III) on existing sewer infrastructure in the project area. The master sewer capacity study included a calculation of sewage generation by existing developments in the project area and a hydraulic analysis to evaluate the performance of the existing sewage conveyance system with the additional input of the project. The master sewer capacity study follows a methodology provided in the EMWD 2006 Master Plan Update.

Under the future conditions of the project and the related projects, sewage would be conveyed via new on-site sewer laterals with connection to an existing 8-inch sewer pipe within Clinton Keith Road, and subsequently to a 15-inch pipe in Whitewood Road, south of the project site. Based on the hydraulic analysis performed in the master sewer capacity study, total future sewage generation at the downstream connection point in Whitewood Road is calculated to be 2.212 cubic feet per second. With the capacity of the existing 15-inch-diameter sewer line in Whitewood Road known to be 2.392 cubic feet per second, the master sewer capacity study concluded that the existing lines are adequate to serve the project and the adjoining related projects (Vineyard I and Vineyard III). Therefore, impacts would be less than significant. No mitigation is required.

Wastewater Treatment Facilities

The project would include the construction of a new commercial development, which would result in a net increase in wastewater flows. As discussed in Section 4.15.1, EMWD manages wastewater for the proposed project service area. While the majority of the project's wastewater would be treated at the Perris Valley RWRf, interconnections between the local collections systems serving each treatment plant allow system operators to route wastewater to other RWRfs for operational flexibility and improved reliability. In fiscal year 2018/2019, the Perris Valley RWRf treated 15,468 acre-feet of wastewater flows and has a permitted capacity of 28,000 AFY. All together, the four RWRfs treated 50,439 acre-feet of wastewater flows in fiscal year 2018/2019; they have a combined capacity of 81,800 AFY.

Project wastewater discharges would be typical of the wastewater already generated at nearby properties; it would not include large quantities of unusual industrial/hazardous discharges that can interfere with the ability of a treatment plant to meet the water quality requirements for its discharges. Furthermore, wastewater disposal is heavily regulated, and the San Diego RWQCB, in connection with the NPDES permit, have imposed requirements on the treatment of wastewater. Wastewater produced by the proposed project would meet these requirements through treatment at EMWD's RWRf. According to the master sewer capacity analysis (Appendix J-2) prepared for the project and adjacent related projects, the project is anticipated to generate approximately 41,981 gallons of wastewater per day, which is equivalent to approximately 47.0 AFY. In the context of the total volume of wastewater generated by the City, and the wastewater conveyed to the Perris Valley RWRf, the addition of 47 AFY to a wastewater system with 33,135 AFY of additional capacity would be nominal and could be accommodated in the existing facilities. Additionally, because the project is consistent with the City's General Plan, the project will have been accounted for by EMWD as part of its long-term capital planning process, which includes plans to accommodate future build-out of the jurisdictional General Plans in its service area. EMWD updates its CIP on an annual basis based on current available growth information, which includes a comprehensive list of all development projects in its service area, including the project. As discussed previously, EMWD has taken the project into consideration, and has determined in the Design Conditions Plan that it has the capacity to treat wastewater generated by the project in addition to its existing commitments (EMWD 2019a).

Because there is adequate wastewater treatment capacity within EMWD's wastewater treatment system, the project would not directly require or result in the relocation or construction of new or expanded wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Therefore, impacts would be less than significant. No mitigation is required.

Stormwater Drainage

Upon project implementation, the impervious areas of the project site would increase. Due to the proposed increase of impervious materials on the project site, there is potential for stormwater runoff volumes and/or stormwater runoff rates

to increase upon project implementation. However, under existing conditions, stormwater infiltration opportunities are limited due to the dense, generally impermeable bedrock that underlies the project site. Upon project implementation, the same site conditions would continue to preclude on-site infiltration of stormwater.

The project is required to be designed so that post-development stormwater runoff would be less than or equal to existing conditions. Two bioretention basins and other low-impact development BMPs, including tree wells, planter boxes, underground detention basins, and spill interceptor trenches, are proposed as part of the project. The basins were designed with low-flow thresholds in order to meet peak-flow frequency and flow-duration controls. Based on the two water quality master plans prepared for the project, the resulting mitigated outflows associated with the design storm would be equal to or less than the pre-developed outflows, or within the 10% tolerance (Appendix G-3; Appendix G-4). The design storm is the rainfall amount and distribution in space and time used to determine a design flood or design peak discharge. Once stormwater exits the biofiltration basins, it would pipe flow to the public storm drain system.

For these reasons, upon implementation of the required water quality management plans for the project, stormwater volumes from the site would be equivalent to existing conditions or would be reduced upon project implementation relative to existing conditions. While stormwater drainage improvements would occur as previously described, these improvements are considered part of the proposed project and are analyzed in this EIR for potential environmental effects. As such, implementation of the proposed project would not increase the volume and/or rate of stormwater flows that enter the existing storm drain system and may even decrease the volume and/or rate of stormwater flows relative to existing conditions. The project would not result in expansion of any existing off-site facilities or in the construction or relocation of new off-site facilities. Upon implementation of the proposed water quality management plans, impacts associated with new stormwater drainage facilities would be less than significant, and no mitigation is required.

Electric Power, Natural Gas, and Telecommunication Facilities

As part of development of the project, new connections to the project site would be required for electric power, gas lines, and telecommunication facilities. However, such upgrades would be confined to the lateral connections to the project site from surrounding streets and not any centralized facilities.

Electrical power service would be provided to the project site via the existing 12 kV electrical lines within Antelope Road, which the project would connect to laterally via underground collector lines. As stated in Section 4.15.1, Existing Conditions, SCE has stated that the existing electrical infrastructure within the greater project area is operating near or at its capacity. As a result, SCE is in the process of constructing the Valley South Subtransmission Line Project, which will increase the operating capacity and reliability of electrical infrastructure within the “electrical needs area” of the Valley South Subtransmission Line Project, which includes the project site. Construction of the Valley South Subtransmission Line Project is anticipated to be completed in late 2020. Upon completion of the Valley South Subtransmission Project, which CPUC approved on December 16, 2016, existing infrastructure in the greater project area would be able to adequately serve the project.

The project is estimated to have a total electrical demand of 2,555 megawatt-hours per year. For comparison, non-residential electricity demand in 2017 was 8,346,000 megawatt-hours for the County (ECDMS 2019). The proposed project would result in a minimal increase (0.000306%) in electricity consumption. In addition, SCE tracks planned development and coordinates with the California Independent System Operator to ensure projected supply meets demand. In addition, within 2 years of operation, the project will generate electricity from solar panels (estimated at 1,128,400 kilowatt-hours per year), which will be delivered to SCE and offset electrical requirements.

The project would be built in accordance with the current Title 24 standards at the time of construction and CALGreen standards. Therefore, due to the minimal increase in electricity usage generated by the project, incorporation of sustainability measures, installation of solar panels, increase in efficiency of building code regulations, planning efforts undertaken by SCE, and grid management efforts by the California Independent System Operator, SCE would have the ability to accommodate the proposed project and not require the construction or expansion of electrical facilities.

Natural gas service would be provided by the existing 6-inch line located with Clinton Keith Road. A new lateral gas main extension would be constructed from its location within Clinton Keith Road to the project site concurrent with construction of the project. Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling. SoCalGas confirmed availability of natural gas supply in the project vicinity to serve the project. As discussed in Section 4.16, Energy, default natural gas generation rates in CalEEMod for the proposed land use and climate zone were used to calculate the project's energy usage. According to these estimations, the project would consume approximately 2.7 billion BTUs per year. The non-residential natural gas consumption for the County in 2017 was 139.1 billion BTUs (ECDMS 2019). For disclosure, the project's natural gas consumption during operation would be 0.0019% of the County's non-residential natural gas consumption total; therefore, there would be available supply to meet the project's demand.

Telecommunication lines would be extended onto the project site from their existing locations within the vicinity of the project site. Given the nature of telecommunication lines, once telecommunication lines are extended to the project site, no additional telecommunication line construction is anticipated to be required.

For the reasons discussed above, impacts associated with upgrades of electric, natural gas, and telecommunication lateral connections to the project site would be less than significant, and no mitigation is required.

Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, and reasonably foreseeable future development during normal, dry and multiple dry years or are new or expanded entitlements needed?

Less-than-Significant Impact. The proposed project would be served by EMWD, which serves an area of approximately 555 square miles in western Riverside County. EMWD has four sources of water supply: local groundwater, desalinated groundwater, recycled water, and imported water from MWD.

As an urban water supplier, EMWD is required to assess the reliability of its water supply service for a 20-year period under normal, single-dry and multiple-dry year conditions. Based on historical extraction and estimated population growth rates, the projected water supply and demand for the normal and single- and multiple-dry year scenarios were calculated for the EMWD UWMP, as provided in Section 4.15.1. As shown in Table 4.15-1 in Section 4.15.1, EMWD has the ability to meet current and projected water demands through 2040 during historic multiple-dry year periods using imported water from MWD, groundwater, recycled water, and conservation methods. As indicated above and in the EMWD UWMP, the EMWD UWMP has determined these resources to be reliable, based upon the assurances of MWD that it would be able to supply member agency demands, the reliability of local groundwater supplies achieved through groundwater management plans, and the development of recycled water resources.

To ensure that planning efforts for future growth are comprehensive, EMWD incorporates regional projections into the EMWD UWMP using census data and proposed development projects and land uses within EMWD's borders, as well as current demographic information such as household size, as the basis of planning for future water supply and demonstrating compliance with state water conservation goals and policies. The EMWD UWMP identifies

residential consumption as the dominant demand for EMWD according to the general plans for the County and local cities and identifies the likelihood of increase of commercial developments, especially along the major transportation corridors through EMWD's boundary (Interstate 15, Interstate 215, Highway 79, and Highway 74). As of 2015, commercial demands accounted for about 6% of EMWD's retail service area water demand; this is anticipated by the EMWD UWMP to increase over time.

The proposed project is consistent with the underlying City land use designations for the project site, which has a Murrieta General Plan 2035 designation of Commercial and a zoning designation of Regional Commercial. As such, the EMWD UWMP projections include commercial uses at the project site. According to the Master Water Study (Appendix J-1) prepared for the project, the projected water demand for the project is anticipated to be 52,040 gallons per day, which equates to 57.2 AFY of potable water. While the proposed project would involve an intensification of uses on the project site, the increased water use would be minor and incremental in the context of the total water portfolio managed by EMWD. By way of comparison, gross water demand from the proposed project would equate to approximately 0.04% of the service provider's total projected water supplies (including recycled water) in 2020, which is around the time of project build-out. In 2040, gross water demand from the proposed project would equate to 0.03% of projected potable water supplies, which is approximately 20 years into project operation.

As part of development process, EMWD has prepared a Design Conditions Plan (formerly referred to as a Plan of Service), which provides specifications as to how the project would be connected to EMWD's water and wastewater system, and is based on the Master Water Study (Appendix J-1) and Master Sewer Study (Appendix J-2) prepared for the project. As detailed in the Design Conditions Plan and substantiated in the Master Water Study, EMWD has indicated that it has planned for sufficient supplies of potable water to serve the project. Additionally, per the Design Conditions Plan and Master Water Study, no new water facilities or infrastructure would be required to accommodate the project, aside from the on-site infrastructure improvements and necessary utility connections and any associated improvements.

Furthermore, the proposed project would incorporate site-specific water efficiency measures to ensure that water is conserved to the extent feasible. Water use reduction would be a central focus of project design. The project applicants would incorporate project design features that involve the implementation of water efficiency practices, including outdoor water use reduction, indoor water use reduction, building-level water metering, and others. Landscaping would include low-water plants and turf of a low-water-use variety. Plumbing facilities would be designed to reduce water consumption. Low-flow fixtures would be installed that would meet or exceed CALGreen requirements, and sub-metering would be used to monitor water demands.

For the reasons described above, the project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple-dry years. Impacts would be less than significant, and no mitigation is required.

Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less-than-Significant Impact. As previously described, the majority of wastewater generated by the project would be conveyed from the project site to EMWD's Perris Valley RWRf. In 2015, the Perris Valley RWRf treated 15,088 AFY of wastewater and has a treatment capacity of 28,000 AFY. As such, the recently expanded Perris Valley RWRf operates with approximately 8,000 AFY of excess capacity. According to the Master Sewer Study (Appendix J-2) prepared for the project, the project is anticipated to generate approximately 47.0 AFY of wastewater per year. In

the context of the Perris Valley RWRf's excess capacity (approximately 8,000 AFY) and EMWD's overall existing capacity (approximately 33,135 AFY), wastewater generated by the project would be nominal. Additionally, per the Design Conditions Plan and as substantiated by the Master Sewer Study (Appendix J-2), EMWD has indicated that it has sufficient capacity within its wastewater collection and treatment system to treat wastewater generated by the project without the need for new wastewater facilities or infrastructure, aside from the on-site infrastructure improvements and necessary utility connections and any associated improvements (EMWD 2019a). For these reasons, the project would result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. Impacts would be less than significant, and no mitigation is required.

Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction

Less-than-Significant Impact. Construction of the project would result in the generation of solid waste such as scrap lumber, concrete, residual wastes, packing materials, plastics, and soils. According to the EPA's "Estimating 2003 Building-Related Construction and Demolition Amounts" paper on waste generation rates during construction and demolition (EPA 2009), the average overall waste generation rate of nonresidential construction was found to be 4.34 pounds of waste per square foot constructed. Table 4.15-4, Project-Generated Construction Waste Estimate, provides an estimate of waste generated during on-site construction activities.

Table 4.15-4. Project-Generated Construction Waste Estimate

Pad	Size (Square Feet)	Unit (Pound/Square foot)	Total (Pounds/Tonnage)
Costco	153,362	4.34	665,591/333
Costco Gas Station	12,684	4.34	55,049/28
Vineyard II Development	72,000	4.34	312,480/156
		Total	1,033,120/517

Source: EPA 2009.

As demonstrated in Table 4.15-4, it is anticipated that approximately 1,033,120 pounds (517 tons) of solid waste would be generated during construction of the project.

Per CALGreen, 75% of construction and demolition waste must be diverted from landfills starting in 2020. As such, at least 75% of all construction debris from the site would be diverted. The CALGreen Code requirements include preparing a construction waste management plan that identifies materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials will be sorted on site or mixed; and identifying diversion facilities where the materials collected will be taken. In addition, the CALGreen Code requires that 100% of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled. Pursuant to the construction waste management plan that would be prepared for the project, wastes would be transported to local construction waste recyclers. The County of San Bernardino Construction & Demolition Waste Recycling Guide & Directory (County of San Bernardino 2015) lists construction recyclers located throughout Southern California, including wood recyclers located in Romoland, Murrieta, and Lake Elsinore; and asphalt, concrete, and rock recyclers located in Romoland and Hemet.

The remaining 25% of construction material (approximately 129 tons) that is not required to be recycled would either be disposed of or voluntarily recycled at a solid waste facility with available capacity. As described in Section 4.15.1, the El Sobrante Landfill has a remaining capacity of 143.9 million cubic yards and is expected to remain open throughout project construction. Additionally, there are other facilities that process construction and demolition waste in the County that collectively have a maximum daily capacity of 283.2 million cubic yards per day. Construction of the proposed project is expected to conclude in November 2021. As such, any construction and demolition debris requiring disposal at an inert waste landfill would be sufficiently accommodated by existing landfills.

For the reasons stated above, project construction would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (e.g., CALGreen standards). Impacts would be less than significant.

Operations

Less-than-Significant Impact. Once operational, the proposed project would produce solid waste on a regular basis, in association with operation and maintenance activities. Anticipated solid waste generation attributable to the proposed project is shown in Table 4.15-5. The solid waste generation rates assume compliance with AB 341.

Table 4.15-5. Anticipated Solid Waste Generation

Project Components	Size Metric	Units of Size Metric	Rate (tons per size metric per year) ¹	Solid Waste Generation (tons per year)
Costco	1,000 square feet	153.362	4.3	659.5
Costco Gasoline/Service Station	Pump	32	3.01	96.35
Vineyard II Retail Pads	1,000 square feet	31.4	1.05	33.0
Fitness Center	1,000 square feet	37.0	5.70	210.9
Fast Food Restaurant with Drive Through	1,000 square feet	3.6	11.52	41.5
Total				1,041.3

¹ Source: CAPCOA 2017.

As described in Section 4.15.1, the City’s commercial uses are currently served by Waste Management for solid waste collection and disposal. The majority of solid waste generated within the City for construction and operation is disposed of at El Sobrante Landfill (Ramaiya, pers. comm. 2019). This landfill has a remaining capacity of 143 million cubic yards, a maximum permitted capacity of 209 million cubic yards, and is expected to remain open through 2051 (CalRecycle 2019a). El Sobrante Landfill has a maximum daily permitted throughput of 16,054 tons per day, and in December 2019, received an average of 11,650 tons of waste per day (CalRecycle 2020), resulting in an average excess capacity of approximately 4,404 tons per day. Assuming that waste from the project site would be collected weekly, El Sobrante Landfill would receive approximately 20 tons of waste once per week. The net solid waste that is anticipated to be produced by the project would equate to approximately 0.4% of the landfill’s average excess capacity of its permitted daily load. As such, the proposed project’s solid waste generation would be minimal to negligible relative to available landfill capacity. Solid waste from the City is also disposed at the Badlands Landfill, which has a remaining capacity of 15.7 million cubic yards and a maximum permitted capacity of 34.4 million cubic yards, and is expected to remain open through at least January 1, 2022 (CalRecycle 2019b). In addition, the Riverside County Department of Waste Resources is currently in the planning process to expand the disposal footprint from 150 acres to 396 acres (in multiple stages), thereby providing an additional 50 years of landfill

capacity (RCDWR 2019). Between the existing and planned capacities of landfills that serve the City, it is anticipated that there would be adequate capacity to accommodate the waste disposal needs of the project.

The Countywide Integrated Waste Management Plan includes an assessment of the County's ability to accommodate solid waste disposal demands throughout a 15-year planning horizon. As shown in the County's latest annual report for the Countywide Integrated Waste Management Plan, there are numerous scenarios through which the County could meet the disposal needs of all jurisdictions. Future disposal needs are calculated through 2031 based on employment, population, and taxable sales projections based on long-term forecasts for the County. (All scenarios would meet the County's projected disposal needs except for a scenario in which out-of-county landfills are not used.) The Countywide Integrated Waste Management Plan is updated to include strategies for the County and local jurisdictions to continue meeting long-term needs and to maintain adequate disposal capacities. As such, the County is required to continue identifying ways to meet its disposal needs well into the future.

Once the Badlands and El Sobrante Landfills reach capacity, additional landfills and strategies are required to be identified so that disposal needs continue to be met. Further, according to the latest annual report for the Countywide Integrated Waste Management Plan, there are landfills used by the County with up to 100 years of remaining life. For example, the Prima Desecha Sanitary Landfill in Orange County is expected to remain open for another 85 years; the Mesquite Regional Landfill in Imperial County is expected to remain open for another 100 years; and the Simi Valley Landfill in Ventura County is expected to remain open for another 67 years. As such, in the event of closure of the Badlands and El Sobrante landfills, other landfills in the region would be able to accommodate solid waste from the proposed project, and regional planning efforts would ensure continued landfill capacity into the foreseeable future.

For the reasons described above, project operations would not generate solid waste in excess of state or local standards or of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals (e.g., Countywide Integrated Waste Management Plan). Impacts would be less than significant, and no mitigation is required.

Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-than-Significant Impact. During both construction and operation, the project would comply with all federal, state, and local laws. Additionally, the City is required to comply with the solid waste reduction and diversion requirements set forth in AB 939, AB 341, AB 1327, and AB 1826 (see Section 4.15.2, Relevant Plans, Policies, and Ordinances). Specifically, AB 1826 requires businesses that generate a specified amount of organic waste per week to arrange for recycling services for that organic waste.² Currently, businesses that generate 2 cubic yards or more of organic solid waste per week are required to arrange for organic waste recycling services. Waste Management, the project's waste collection and disposal provider, would provide the project with recycling, and if required, organic waste recycling services, to assist the project in compliance with the applicable solid waste regulations.

In addition, as described above, waste diversion and reduction during project construction and operations would be completed in accordance with CALGreen standards, County diversion standards, and the Countywide Integrated Waste Management Plan. As a result, the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Impacts are considered less than significant.

² Organic waste is defined as food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

4.15.5 Mitigation Measures

Impacts to utilities and services would be **less than significant**. No mitigation measures are required.

4.15.6 Level of Significance After Mitigation

Impacts to utilities and services from the proposed project would be **less than significant**.

4.15.7 Cumulative Impacts

Water and Wastewater

Less-than-Significant Impact. Development of the project, in combination with the related projects (i.e., the Vineyard I and Vineyard III projects) and the cumulative projects (as listed in Table 3-2, Cumulative Projects, of Chapter 3), would cumulatively increase land-use intensities in the area, resulting in increased water usage. The project, related projects, and cumulative projects would be served by the EMWD. As such, the development of the project, related projects, and cumulative projects would increase the amount of water used in the EMWD's service area.

The EMWD UWMP states that EMWD and other water agencies in Southern California have planned for the provision of regional water for the growing population, including drought scenarios for its service area over a 20-year period. The plan includes a new water demand forecast prepared for the major categories of demand and uses regional population, demographic projections, the dry climate, and historical water use to develop these forecasts. These projections consider land use, water development programs and projects, and water conservation. As discussed above, according to the EMWD UWMP, EMWD has the supply needed to meet the demand of its customers through 2040. The conclusion is considered reliable by EMWD based on the assurances of MWD that it would be able to supply member agency demands, the reliability of local groundwater supplies achieved through groundwater management plans, and the development of recycled water resources.

Furthermore, all cumulative projects would meet requirements to incorporate site-specific water efficiency measures. Compliance with CALGreen and other regulatory requirements would be required for new development, which would require new development to install high-efficiency appliances and incorporate water conservation measures throughout. This would ensure that the related projects and cumulative projects, as well as the proposed project, do not result in wasteful or inefficient use of limited water resources. As such, and because the related projects and cumulative projects are generally consistent with regional growth patterns and projections, there would be sufficient water supplies available to serve the project and related projects from existing entitlements and resources, without the requirement for new or expanded entitlements.

Cumulative projects that are not consistent with the applicable jurisdictional general plans would be required to undergo environmental review pursuant to CEQA, which would involve a water supply assessment of current and future water supplies, and if required, mitigation for impacts related to obtaining expanded entitlements. Additionally, EMWD updates a geographic information system database that tracks proposed development quarterly and is consistently updating its water supply portfolio and developing local resources to meet future demand. Because the project, related projects, and cumulative projects are either consistent with the jurisdictional general plans (and thereby included in regional water demand forecasts) or would be accounted for by EMWD as part of its development tracking efforts, there would be sufficient water supplies available to serve the project and

related projects from existing entitlements and resources, without the requirement for new or expanded entitlements, and cumulative impacts would be less than significant.

The project, related projects, and cumulative projects would cumulatively incrementally increase the amount of wastewater that is generated in the area. However, as previously described, the project would generate approximately 47 AFY of wastewater, which would represent approximately 0.1% of the Perris Valley RWRP's capacity. Additionally, the newly upgraded Perris Valley RWRP has been designed such that it could be expanded to treat up to 100 million gallons per day of wastewater if demand grew to require such capacity. EMWD addresses its long-term planning efforts through the development of a long-term capital plan, which serves as a fundamental roadmap of required water, recycled water, and water reclamation facilities needed to support the build out of existing jurisdictional general plans throughout its service area. EMWD's Long-Term Capital Plan relies on EMWD's four facilities master plans, which include the Water Facilities Master Plan, Recycled Water Facilities Master Plan, Wastewater Facilities Master Plan, and Regional Water Reclamation Facilities Master Plan. These four facilities master plans are based on historical and projected demands in the EMWD's service area, and are used to assess EMWD's ability to meet future and current needs, assess the need for system upgrades, and identify future system improvements needed to satisfy current and future user demand. The four facilities master plans are used as the basis for developing a 5-Year, 10-Year, and Build-Out CIP. Within EMWD's CIPs, EMWD identifies the water, sewer, recycled water, and other infrastructure projects that will be necessary to accommodate future build-out of the jurisdictional General Plans in its service area.

Additionally, each year, EMWD updates its CIP based on the then-current available growth information, which includes a comprehensive list of all development projects in its service area, including the project, related projects, and cumulative projects. This process ensures the list of CIP projects needed to accommodate growth are developed just in time, while allowing EMWD to be flexible and responsive to development patterns. CIP projects are subject to approval by EMWD's Board of Directors, and EMWD, as the lead agency, is responsible for environmental review pursuant to CEQA as projects are implemented. As cumulative increases in wastewater treatment demand within the service area require facility upgrades, EMWD would include service connection fees in their capital improvement plans. Such fees would ensure that capital improvements are completed sufficiently to accommodate increased wastewater inflows associated with the project area. As such, due to EMWD's long-term planning efforts, EMWD would have adequate capacity to serve the project's, related projects', and cumulative projects' projected demand in addition to the provider's existing commitments using existing entitlements and infrastructure, and cumulative impacts would be less than significant.

Completion of the related projects would involve construction of water distribution and wastewater conveyance infrastructure (i.e., pipes, valves, meters, etc.) on the related project sites. For the project and the related projects, connections would be made to nearby off-site lines in the adjacent rights-of-way. The construction of the laterals would be temporary and limited to trenching to the depth of the underground utility lines and project construction would occur in accordance with all applicable regulatory requirements. As discussed in Section 4.15.4, other than the lateral connections from the related project sites to nearby existing utility mains, neither the project nor the related projects would require or result in construction or expansion of new off-site infrastructure like a need for new water treatment plants, and upgrades of lateral connections to related project sites would not create a cumulatively considerable impact. To account for cumulative effects on infrastructure facilities directly serving the project, the master water study and sewer study also accounted for the projected water and wastewater treatment demands of the project and related projects, and found that the project and the related projects in the immediate vicinity of the project site would not directly require or result in the relocation or construction of new or expanded water facilities. In addition, all other cumulative development would be required to comply with all applicable regulations, including CEQA, which would ensure that future development would not be allowed to proceed without

adequate infrastructure and availability of water and sewer treatment capacity in place. Accordingly, there would not be a need for new entitlements, resources, and/or water or sewer treatment facilities that are not already being planned to accommodate regional growth forecasts and cumulative impacts related to adequacy of water and waste water infrastructure; sewer treatment would be less than significant.

Storm Drainage Facilities

Less-than-Significant Impact. The proposed project is located in an area of the City where many of the adjacent properties are developed. New development projects in the City, including the proposed project, would be subject to the most recent City Stormwater Management Plan and the Regional Municipal Separate Storm Sewer System Permit, which requires the identification of methods to reduce potential stormwater runoff and contribution of pollutants to the storm drain system. The proposed project in particular includes bioretention basins and other low-impact development BMPs, including tree wells, planter boxes, and underground detention basins to manage and treat stormwater flows. Upon project implementation, stormwater runoff from the project site would be less than or equal to runoff that occurs under existing conditions. As such, the project would not contribute to a cumulative effect. For the related projects, stormwater runoff would be expected to be equal to or less than runoff under existing conditions, which can be achieved through the implementation of BMPs similar to those of the project. Therefore, it is unlikely that downstream flood control improvements would be required as a condition of related project completion. As a result, cumulative impacts associated with upgrades of sewer lateral connections to related project sites would be less than significant, and no mitigation is required.

Solid Waste

Less-than-Significant Impact. Development of related projects would increase land use intensities in the area, resulting in increased solid waste generation in the service area for Riverside County landfills. AB 939 mandates that cities divert 75% of the total solid waste generated away from landfills. In order to maintain state requirements of diverting 75% of solid waste and to offset impacts associated with solid waste, the proposed project, related projects, and cumulative projects would each be required to implement waste reduction, diversion, and recycling during both construction and operation and to comply with the City's Integrated Waste Management Plan. Through compliance with City and state solid waste diversion requirements, and due to the recycling collection process that would, as a result of the foregoing laws and regulation, be part of each of the related and cumulative project's design, cumulative impacts would be less than significant.

Electric Power, Natural Gas, and Telecommunication

Less-than-Significant Impact. The development of the project and the related projects would add to demands for energy and would increase requirements for telecommunication technology infrastructure. As stated in Section 4.15.1, SCE has stated that the existing electrical infrastructure within the greater project area is operating near or at its capacity. As a result, SCE is in the process of constructing the Valley South Subtransmission Line Project, which will increase the operating capacity and reliability of electrical infrastructure within the "electrical needs area" of the Valley South Subtransmission Line Project, which includes the project site and related project sites. Construction of the Valley South Subtransmission Line Project is anticipated to be completed in late 2020 and would improve SCE's infrastructure in the greater project area. Upon completion, SCE would be able to adequately serve the project and the related projects in the project area. Additionally, SCE would continue its long-term planning efforts and plan for the provision of upgrades to its regional electrical distribution network as needs develop. Typically, upgrades to utility networks fall under the jurisdiction of CPUC and would be subject to environmental review as electrical projects are proposed.

As part of the project and as part of the other related projects, natural gas and telecommunication lines would be extended onto the project site and related projects from their existing locations within the vicinity of the project site, resulting in localized less-than-significant impacts. Similarly, the other related projects would result in localized impacts that are reduced to less-than-significant impacts through compliance with local regulations, such as the Regional Municipal Separate Storm Sewer System permit and NPDES General Construction Permit. Additionally, the related projects would be subject to review on a case-by-case basis. Should the applicable service provider determine that upgrades or extensions of infrastructure be required, any such upgrades would be included within each project's environmental review. As a result, cumulative impacts associated with upgrades of electric, natural gas, and telecommunication facilities would be less than significant.

Conclusion

Overall, given the water availability and conservation and recycling measures disclosed by the EMWD UWMP, capacity at Perris Valley RWRP, capacity of public and private landfills serving the County, and availability of water and energy supplies, adequate wastewater, solid waste, water and energy supplies exist for the related projects and cumulative projects without the need for construction of new infrastructure other than laterals proximate to the various project sites. Combined with cumulative development, the project would result in an increase to energy, solid waste, and water and wastewater service demands, but these increases are accommodated within the existing utility and service system (as described above). Additionally, compliance with regulations governing water, solid waste, wastewater, and energy supplies would reduce demands for utilities and service systems. Lastly, with regard to water quality, related projects and cumulative projects would be required to implement practices that would ensure stormwater flows and stormwater quality are appropriately managed and treated. As such, cumulative impacts related to utilities and service systems would be less than significant.

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4.16 Energy

This section describes the existing setting related to energy, identifies associated regulatory requirements, and evaluates potential energy impacts related to implementation of the proposed Costco/Vineyard II Retail Development Project (project). This analysis is based on emission calculations and California Emissions Estimator Model (CalEEMod) outputs presented in the Air Quality and Greenhouse Gas Emissions Analysis Technical Report prepared for the project (Appendix B).

4.16.1 Existing Conditions

Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 257,268 gigawatt hours of electricity in 2017 (EIA 2019a). By sector in 2017, commercial uses utilized 46% of the state's electricity, followed by 35% for residential uses, and 19% for industrial uses (EIA 2019a). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the commercial sector is lower than any other state except Hawaii (EIA 2018).

Southern California Edison (SCE) provides electricity to the project. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across central and Southern California. According to the California Public Utilities Commission (CPUC), approximately 84 billion kilowatt-hours of electricity were used in SCE's service area in 2017. Demand forecasts anticipate that approximately 75 billion kilowatt-hours of electricity will be used in SCE's service area in 2020 (CPUC 2018).

SCE receives electric power from a variety of sources. According to CPUC's *2018 California Renewables Portfolio Standard Annual Report*, 32% of SCE's power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018). The California Energy Commission (CEC) estimates that about 29% of the state's electricity retail sales in 2017 came from renewable energy (ECDMS 2016). The California Renewables Portfolio Standard (RPS) Program establishes a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010, and to 33% by 2020. Recent legislation revised the current RPS target for California to obtain 50% of total retail electricity sales from renewable sources by 2030, with interim targets of 40% by 2024, and 45% by 2027 (CPUC 2016).

Natural Gas

According to the CEC, California used approximately 12,571 million therms¹ of natural gas in 2017 (EIA 2019b). In 2017 (the most recent year for which data is available), by sector, industrial uses utilized 37% of the state's natural gas, followed by 32% from electric power, 19% from residential, 11% from commercial, and 1% from transportation uses (CEC 2018a). While the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90% of its supply of natural gas (EIA 2019b).

¹ One therm is equal to 100,000 BTU or 100 kBTU.

The Southern California Gas Company (SoCalGas) provides the project with natural gas service. The territory serviced by SoCalGas encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03% in SoCalGas’s service territory. As of 2017, approximately 7.2 billion therms were used in SoCalGas’s service area per year or 19.7 million therms per day. At project buildout (2021), natural gas demand is anticipated to be approximately 7.9 billion therms per year in SoCalGas’s service area (CEC 2018b). The total capacity of natural gas available to SoCalGas in 2016 is estimated to have been 3.9 billion cubic feet per day. In 2021, the total capacity available is also estimated to be 3.9 billion cubic feet per day² (California Gas and Electric Utilities 2016). This amount is approximately equivalent to 3.98 billion thousand British thermal units (kBtu) per day or 39.8 million therms per day. Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in the area serviced by SoCalGas. Within the immediate vicinity of the project site, there is an existing 6-inch gas line located within Clinton Keith Road (Excel Engineering 2019).

Petroleum

According to the CEC, California used approximately 18.6 billion gallons of petroleum in 2017 (EIA 2019c). This equates to a daily use of approximately 51 million gallons of petroleum. By sector, transportation uses utilize approximately 85.5% of the state’s petroleum, followed by 11.1% from industrial, 2.5% from commercial, 0.9% from residential, and 0.01% from electric power uses (EIA 2018). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. Production of petroleum in the United States was 9.7 million barrels per day during April 2015, which was the highest output since April 1971 (CEC 2016a).

4.16.2 Relevant Plan, Policies, and Ordinances

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer’s average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased corporate average fuel economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

² One cubic foot of natural gas has approximately 1,020 Btus of natural gas or 1.02 kBtus of natural gas.

This federal legislation (the RFS) requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2017). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in greenhouse gas (GHG) emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program (RFS2) includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel, and set separate volume requirements for each one.
- EISA required the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green” jobs.

State

Warren–Alquist Act

The California Legislature passed the Warren–Alquist Act in 1974, which created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation’s first energy conservation standards for both buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure the provision of adequate, reliable, and reasonably priced electrical power and natural gas supplies; it also identified cost-effective and environmentally sound energy policies, strategies, and actions for California’s consumers and taxpayers. In 2005, the CEC and CPUC adopted a second Energy Action Plan to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state’s energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an “update” that examines the state’s ongoing actions in the context of global climate change.

Senate Bill 1078 (2002)

Senate Bill (SB) 1078 established the California RPS Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

Senate Bills 107 (2006), X1-2 (2011), 350 (2015), and 100 (2018)

SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) increased the standards set forth in SB 350. The bill establishes that 44% of the total electricity sold per year to retail customers in California be secured from qualifying renewable energy sources by December 31, 2024, with that number increasing to 52% by December 31, 2027, and 60% by December 31, 2030. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS in 2030. Therefore, any project’s reliance on non-renewable energy sources would also be reduced.

Assembly Bill 1007 (2005)

AB 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California’s goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state’s codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state’s GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 4.6.2 in Section 4.6, Greenhouse Gas Emissions, of this Environmental Impact Report (EIR).

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California’s building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, further reduce energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and non-residential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015). The 2016 Title 24 standards are the current applicable building energy efficiency standards, and became effective on January 1, 2017. The 2019 standards will continue to improve upon the 2016 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 standards will go into effect on January 1, 2020.

Title 24 also includes Part 11, the California Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011, and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The 2016 CALGreen standards became effective on January 1, 2017. The mandatory standards require the following:

- 20% mandatory reduction in indoor water use
- 50% diversion of construction and demolition waste from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

Integrated Energy Policy Report

The CEC is responsible for preparing integrated energy policy reports that identify emerging trends related to energy supply, demand, conservation, public health and safety, and maintenance of a healthy economy. The CEC’s 2015 *Integrated Energy Policy Report* discusses the state’s policy goal to require that new residential construction be designed to achieve zero net energy standards by 2020, and that new non-residential construction be designed to achieve zero net energy standards by 2030 (CEC 2016a), which is relevant to this EIR. Refer to Section 4.6.2 of this EIR for additional information on the state’s zero net energy objectives and how the state’s achievement of its objectives would serve to beneficially reduce the project’s GHG emissions profile and energy consumption.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California’s carbon dioxide (CO₂) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be those whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emissions standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009 through 2012 standards resulted in a reduction in approximately 22% of GHG emissions compared to emissions from the 2002 fleet, and the 2013 through 2016 standards resulted in a reduction of approximately 30%.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global-warming gases with requirements for greater numbers of zero-emissions vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global-warming gases and 75% fewer smog-forming emissions (CARB 2011).

Although the focus of the state’s vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates. As codified in California Government Code Section 65080, SB 375 requires metropolitan planning organizations (e.g., Southern California Association of Governments) to include a Sustainable Communities Strategy in their regional transportation plan. The main focus of the Sustainable Communities Strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also part of a bigger effort to address other development issues, including transit and vehicle miles traveled (VMT), which influence the consumption of petroleum-based fuels.

Local

City of Murrieta General Plan 2035

The Conservation Element of the City of Murrieta’s (City) General Plan 2035 includes the goals and policies that result in co-benefits related to energy conservation. The following goals and policies from the Conservation Element may be applicable to the project (City of Murrieta 2011a):

GOAL CSV-2 Murrieta promotes compliance with requirements from the State and appropriate agencies regarding comprehensive water conservation measures in buildings and landscaping.

Policy CSV-2.1 Ensure that all developments comply with water efficiency requirements, as mandated by the applicable Building Code.

GOAL CSV-12 Energy conservation and the generation of energy from renewable sources is prioritized as part of an overall strategy to reduce GHG emissions.

Policy CSV-12.1 Ensure that all developments comply with energy efficiency requirements as mandated by the applicable Building Code.

- Policy CSV-12.3** Support the on-site installation and use of renewable energy generation systems for residential, commercial, institutional, and industrial uses.
- GOAL CSV-13** Solid waste is diverted from landfills through waste reduction, re-use, and recycling.
- Policy CSV-13.1** Continue to comply with the landfill diversion requirements of the Integrated Waste Management Program.
- Policy CSV-13.2** Ensure that non-residential and multi-family developments provide readily accessible areas for recycling (at a minimum) paper, corrugated cardboard, glass, plastics and metals, as required by California law.
- GOAL CSV-14** A community that encourages and incentivizes the sustainable development of buildings and neighborhoods, particularly with respect to durability, energy and water use, and transportation impacts.
- Policy CSV-14.1** Ensure all applicable construction projects comply with the California State Green Building Standards Code.
- Policy CSV-14.2** Encourage the integration of other principles of green building into development standards and guidelines, looking for opportunities to realize other benefits such as improved health and increased bicycle transportation.

City of Murrieta Climate Action Plan

Adopted as part of the City’s General Plan 2035, the City’s Climate Action Plan (CAP) (City of Murrieta 2011b), which was prepared following CEQA Guidelines Section 15183.5, provides a framework for reducing GHG emissions and managing resources to best prepare for a changing climate. With respect to evaluation of projects under CEQA, the CAP states, “Projects that demonstrate consistency with the strategies, actions, and emission reduction targets contained in the CAP would have a less than significant impacts on climate change” (City of Murrieta 2011b). The City’s CAP also suggests best practices for implementation and makes recommendations for measuring progress.

The City’s CAP is intended to address the main sources of the emissions that cause climate change, which include emissions from the energy consumed in buildings and for transportation. The purpose of the City’s CAP is to guide the development, enhancement, and implementation of actions that would reduce the City’s GHG emissions by 15% below existing (2009) levels by 2020.

4.16.3 Thresholds of Significance

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) provide guidance for evaluating whether a development project may result in significant impacts with regard to energy. Based on Appendix F and Appendix G of the CEQA Guidelines, a project could have a significant impact on energy conservation if the project would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.16.4 Impacts Analysis

Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less-than-Significant Impact. The project would consume energy resources during project construction and operation and would intensify development on the project site as compared to the existing site condition. The project also includes project design features that will reduce energy consumption as stated below.

Project Design Features

To reduce energy use associated with construction and operation of the project to the extent feasible, Costco Wholesale (Costco) would incorporate the following project design features (PDFs) into the new facility (PDF-AQ/GHG-1):

- a. New and renewable building materials shall be extracted and manufactured within the region whenever possible, reducing transportation emissions.
- b. The project shall use pre-manufactured building components, including structural framing and metal panels, to help minimize waste during construction.
- c. The main building structure shall be constructed with a pre-engineered system that uses 100% recycled steel materials and is designed to minimize the amount of material utilized.
- d. Roof material shall be 100% recycled standing seam metal panel, designed to maximum efficiency for spanning the structure.
- e. Exterior skin metal shall be 100% recycled.
- f. Construction waste shall be recycled whenever possible.
- g. Floor sealant contains no volatile organic compounds (VOCs) and represents over 80% of the floor area.
- h. LED lamps shall be installed in the parking lots.
- i. Parking lot and exterior lights shall be controlled by the building's automated energy management system.
- j. Pre-manufactured metal wall panels with insulation carry a higher Resistance Value (more commonly known as R-Value), and greater solar reflectivity shall be installed to help conserve energy. Building heat absorption is further reduced by a decrease in the thermal mass of the metal wall when compared to a typical masonry block wall.
- k. Costco would design the roofing structure to accommodate the additional structural load of the solar panels to allow for the flexibility for possible future installation.
- l. The project shall plant native, drought-tolerant vegetation that would use less water than other common species.
- m. The project shall install an irrigation system that uses deep-root watering bubblers for parking lot trees to minimize usage and ensure that water goes directly to the intended planting areas.
- n. High-efficiency restroom fixtures shall be installed.
- o. Building envelopes shall be insulated to meet or exceed current energy code requirements.
- p. Heating, ventilation, and air conditioning (HVAC) comfort systems shall be controlled by a computerized building management system to maximize efficiency.

- q. HVAC units shall be high-efficiency, direct-ducted units.
- r. HVAC units shall not use hydrochlorofluorocarbons.
- s. Interior lighting shall be controlled by the overall project energy management system.
- t. Gas water heaters shall be direct vent and high efficiency.
- u. Extensive recycling/reuse program shall be implemented for warehouse and office space including tires, cardboard, grease, plastics, and electronic waste.
- v. All Costco trucks shall be equipped with an engine idle shut off timer.
- w. Three electric vehicle (EV) charging stations shall be installed in the parking lot.
- x. Within 2 years of opening the Costco Warehouse, a 708-kilowatt photovoltaic system shall be installed, which would generate a system output of 1,128,400 kilowatt-hours per year.
- y. Stalls designated as Clean Air Vehicle/Van Pool would encourage use of such vehicles by employees and customers.

Vineyard II Retail Development would incorporate the following PDFs into the new facilities (PDF-AQ/GHG-2):

- a. Design the roofing structure to accommodate the additional structural load of the solar panels to allow for the flexibility for possible future installation.
- b. LED lamps shall be installed in the parking lots and outdoor lighting fixtures.
- c. Parking lot and exterior lights shall be controlled by a time clock and photo cell device to turn lights off at dawn.
- d. Fourteen EV charging stations shall be installed in the parking lot, four of which shall be tied to a solar source from the roofs of two buildings at the time of opening.
- e. Electrical outlets on site shall allow recharging of battery-operated landscape maintenance equipment by landscape maintenance staff.
- f. Each trash enclosure in the retail center shall have a recycling bin slot for each tenant.
- g. Non-potable irrigation lines shall be installed in preparation for future recycled water.

Implementation of the project would increase the demand for electricity and natural gas at the project site and petroleum consumption in the region during construction and operation; however, through implementation of project design features and mitigation measures and consistency with current regulations and policies, the project would not be wasteful or inefficient or unnecessarily consume energy resources, as further described below.

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment (e.g., computers inside temporary construction trailers, HVAC) would be provided by SCE. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be less than significant.

Operational Use

The project's operational phase would require electricity for multiple purposes including, but not limited to, building heating and cooling, lighting, and appliances, including refrigeration, electronics, equipment, and machinery. Energy would also be consumed during operation of the project related to water usage, solid waste disposal, and electric vehicle trips. SCE has confirmed availability of electricity supply in the project vicinity to serve the project. CalEEMod version 2016.3.2 was used to analyze electrical usage during operation; the default value for electricity consumption for the retail and commercial land uses was applied for the project (CAPCOA 2017). Default electricity generation rates in CalEEMod for the proposed land use and climate zone were used. The electricity use for non-residential buildings was calculated in CalEEMod using energy intensity value (electricity use per square foot per year) assumptions, which were based on the California Commercial End-Use Survey database (CEC 2006).

The project is estimated to have a total electrical demand of 2,555 megawatt-hours per year. The non-residential electricity demand in 2017 was 8,346,000 megawatt-hours for Riverside County (County) (ECDMS 2016). SCE, which will provide electricity for the project, is compliant with existing regulations regarding generation of power from renewable sources. In addition, within 2 years of operation, the project will generate electricity from solar panels (estimated at 1,128,400 kilowatt-hours per year), which will be delivered to SCE and offset electrical requirements. The project would be built in accordance with the current Title 24 standards at the time of construction and CALGreen standards. Therefore, due to the generation of electricity by the project as a result of the installation of solar panels, incorporation of sustainability measures, and the inherent increase in efficiency of building code regulations, the project would not result in a wasteful use of energy. Impacts related to operational electricity use would be less than significant.

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection "Petroleum," below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect; therefore, impacts would be less than significant.

Operational Use

Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling. SoCalGas confirmed availability of natural gas supply in the project vicinity to serve the project.

Default natural gas generation rates in CalEEMod for the proposed land use and climate zone were used. According to these estimations, the project would consume approximately 2.7 billion British thermal units per year. The non-residential natural gas consumption for the County in 2017 was 139.1 billion British thermal units (ECDMS 2016). For disclosure, the project's natural gas consumption during operation would be 0.0019% of the County's non-residential natural gas consumption total; therefore, there would be available supply to meet the project's demand.

Although natural gas consumption would increase due to the implementation of the project, the building envelope, HVAC, and other systems would be designed to maximize energy performance as detailed in **PDF-AQ/GHG-1** and **PDF-AQ/GHG-2**. The project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Prior to project approval, the applicant would ensure that the project would

meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Thus, the natural gas consumption of the project would not be considered inefficient or wasteful, and impacts would be less than significant.

Petroleum

Construction Use

Petroleum would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and haul trucks involved in relocating dirt around the project site are assumed to use diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during project construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix B of this EIR. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 51,587 hours, as summarized in Table 4.16-1.

Table 4.16-1. Hours of Operation for On-Site Construction Equipment

Phase	Hours of Equipment Use
<i>Costco</i>	
Site Preparation	2,408
Grading	6,528
Building Construction	6,188
Paving	912
Architectural Coating	222
<i>Vineyard II</i>	
Site Preparation	380
Phase 1 Grading and Trenching	4,680
Phase 1 Building Construction	12,753
Phase 1 Paving	720
Phase 1 Architectural Coating	120
Phase 2 Precise Grading and Footing Trenching	6,026
Phase 2 Building Construction	5,742
Phase 2 Architectural Coating	640
Phase 2 Paving	180
<i>Warm Springs Parkway</i>	
Grading	3,120
Paving	968
Total	51,587

Source: Appendix B

Fuel consumption from construction equipment was estimated by converting the total CO₂ emissions from each construction phase to gallons using conversion factors for CO₂ to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO₂ per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO₂ per gallon (The Climate Registry 2018). The estimated diesel fuel use from construction equipment is shown in Table 4.16-2.

Table 4.16-2. Construction Equipment Diesel Demand

Phase	Pieces of Equipment ^a	Equipment CO ₂ (MT) ^a	kg CO ₂ /Gallon ^b	Gallons
<i>Costco</i>				
Site Preparation	7	71.88	10.21	7,039.76
Grading	6	177.18	10.21	17,353.81
Building Construction	9	105.39	10.21	10,322.34
Paving	6	19.02	10.21	1,863.10
Architectural Coating	1	4.72	10.21	462.63
<i>Vineyard II</i>				
Site Preparation	5	13.65	10.21	1,336.50
Phase 1 Grading and Trenching	9	191.84	10.21	18,789.36
Phase 1 Building Construction	17	280.61	10.21	27,483.57
Phase 1 Paving	3	9.51	10.21	931.70
Phase 1 Architectural Coating	1	2.55	10.21	250.08
Phase 2 Precise Grading and Footing Trenching	6	170.20	10.21	16,670.24
Phase 2 Building Construction	10	114.56	10.21	11,219.99
Phase 2 Architectural Coating	4	2.55	10.21	250.08
Phase 2 Paving	1	16.38	10.21	1,604.05
<i>Warm Springs Parkway</i>				
Grading	6	84.69	10.21	8,294.89
Paving	6	20.76	10.21	2,033.63
Total				115,577.22

Sources:

^a Appendix B

^b The Climate Registry 2018.

Notes: CO₂ = carbon dioxide; MT = metric ton; kg = kilogram.

Fuel consumption from worker and vendor trips was estimated by converting the total CO₂ emissions from the construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor/hauling vehicles are assumed to be diesel fueled.

Calculations for total worker, vendor, and hauler fuel consumption are provided in Table 4.16-3, Table 4.16-4, and Table 4.16-5.

Table 4.16-3. Construction Worker Vehicle Gasoline Demand

Phase	Trips	Vehicle CO ₂ (MT) ^a	kg CO ₂ /Gallon ^b	Gallons
Costco				
Site Preparation	774	4.77	8.78	542.88
Grading	2,040	12.36	8.78	1,407.29
Building Construction	14,014	84.30	8.78	9,601.83
Paving	285	1.70	8.78	193.21
Architectural Coating	1,147	6.83	8.78	777.60
Vineyard II				
Site Preparation	130	0.80	8.78	91.18
Phase 1 Grading and Trenching	1,495	9.04	8.78	1,029.17
Phase 1 Building Construction	23,544	140.14	8.78	15,961.47
Phase 1 Paving	240	1.43	8.78	162.71
Phase 1 Architectural Coating	860	5.12	8.78	583.03
Phase 2 Precise Grading and Footing Trenching	1,965	11.70	8.78	1,332.15
Phase 2 Building Construction	18,792	111.86	8.78	12,739.89
Phase 2 Architectural Coating	300	5.12	8.78	583.03
Phase 2 Paving	860	1.79	8.78	203.38
Warm Springs Parkway				
Grading	975	6.00	8.78	683.87
Paving	330	2.03	8.78	231.46
Total				45,208.83

Sources:^a Appendix B.^b The Climate Registry 2018.**Notes:** CO₂ = carbon dioxide; MT = metric ton; kg = kilogram.

Table 4.16-4. Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT) ^a	kg/CO ₂ /Gallon ^b	Gallons
Costco				
Site Preparation	0	0.00	10.21	0.00
Grading	0	0.00	10.21	0.00
Building Construction	6,006	81.05	10.21	7,938.37
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
Vineyard II				
Site Preparation	0	0.00	10.21	0.00
Phase 1 Precise Grading and Trenching	0	0.00	10.21	0.00
Phase 1 Building Construction	9,265	124.73	10.21	12,216.86
Phase 1 Paving	0	0.00	10.21	0.00
Phase 1 Architectural Coating	0	0.00	10.21	0.00
Phase 2 Mass Grading and Trenching	0	0.00	10.21	0.00
Phase 2 Building Construction	7,395	99.56	10.21	9,751.07
Phase 2 Architectural Coating	0	0.00	10.21	0.00

Table 4.16-4. Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT) ^a	kg/CO ₂ /Gallon ^b	Gallons
Phase 2 Paving	0	0.00	10.21	0.00
<i>Warm Springs Parkway</i>				
Grading	0	0.00	10.21	0.00
Paving	0	0.00	10.21	0.00
Total				29,906.30

Sources:^a Appendix B^b The Climate Registry 2018.**Notes:** CO₂ = carbon dioxide; MT = metric ton; kg = kilogram.

Table 4.16-5. Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT) ^a	kg CO ₂ /Gallon ^b	Gallons
<i>Costco</i>				
Site Preparation	0	0.00	10.21	0.00
Grading	8,413	154.76	10.21	15,157.41
Building Construction	0	0.00	10.21	0.00
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
<i>Vineyard II</i>				
Site Preparation	0	0.00	10.21	0.00
Phase 1 Precise Grading and Trenching	2,038	73.46	10.21	7,194.72
Phase 1 Building Construction	0	0.00	10.21	0.00
Phase 1 Paving	0	0.00	10.21	0.00
Phase 1 Architectural Coating	0	0.00	10.21	0.00
Phase 2 Precise Grading and Trenching	0	0.00	10.21	0.00
Phase 2 Building Construction	0	0.00	10.21	0.00
Phase 2 Architectural Coating	0	0.00	10.21	0.00
Phase 2 Paving	0	0.00	10.21	0.00
<i>Warm Springs Parkway</i>				
Grading	100	3.63	10.21	355.09
Paving	250	9.06	10.21	887.73
Total				22,352.13

Sources:^a Appendix B^b The Climate Registry 2018.**Notes:** CO₂ = carbon dioxide; MT = metric ton; kg = kilogram.

As shown in Tables 4.16-2 through 4.16-5, the project is estimated to consume 213,044 gallons of petroleum during the construction phase. By comparison, approximately 12.2 billion gallons of petroleum would be consumed in California over the course of the project's construction phase based on the California daily petroleum consumption estimate of approximately 52.9 million gallons per day (CEC 2016b). Also, for comparison, countywide total petroleum use by vehicles is expected to be 1.0 billion gallons per year by 2019 (CARB 2018). For disclosure, the project's petroleum consumption during the construction phase would be 0.002% of the state's consumption over the course of the project's

construction phase. The project would be required to comply with CARB’s Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes, CARB’s Truck and Bus Regulation, and federal fuel efficiency requirements, which would minimize fuel consumption. Also, in accordance with **MM-AQ-1** (see Section 4.2, Air Quality), the project would utilize Tier 4 Final construction equipment (except where the project applicant establishes to the satisfaction of the City that Tier 4 Final equipment is not reasonably available), which would reduce petroleum usage. Therefore, because petroleum use during construction would be temporary and relatively minimal in comparison to overall usage, and would not be wasteful or inefficient, impacts would be less than significant.

Operational Use

Mobile sources for the project would primarily be motor vehicles (automobiles, light-duty trucks, and heavy-duty delivery trucks) traveling to and from the project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on the Transportation Impact Analysis prepared for the project by Kittelson & Associates Inc., the proposed development is anticipated to generate 8,378 new Costco and gasoline dispensing facility daily employee, customer, and delivery trips (including 33.3% of weekday pass-by trips) and 4,402 new Vineyard II daily employee, customer, and delivery trips (including 25.0% of weekday pass-by trips), which was assumed for the weekday trip rate. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2021 were used to estimate emissions associated with full buildout of the project. Project delivery truck idling would be limited to 5 minutes in accordance with CARB’s adopted Airborne Toxics Control Measure. Transport refrigeration units (TRUs) are designed to maintain the temperature inside delivery truck trailers. Each TRU was assumed to operate for 30 minutes per visit. Based on data from the applicant, Costco would generate 10 truck delivery trips per day, 5 of which would be equipped with TRUs, and 9 fuel delivery trucks per day, and Vineyard II would generate 8 truck delivery trips per week, 3 of which would be equipped with TRUs. The use of forklifts in the loading dock areas would be fueled with compressed natural gas.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site during operation is a function of VMT. The annual VMT attributable to the project is expected to be 52.79 million VMT per year (see Appendix B, Air Quality and Greenhouse Gas Emissions Calculations). Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total CO₂ emissions from the retail and commercial land use type to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. The employee and customer vehicles were assumed to be 92% gasoline powered and 8% diesel powered.

Calculations for annual mobile-source fuel consumption are provided in Table 4.16-6.

Table 4.16-6. Petroleum Consumption – Operation (2021)

Fuel	MT CO ₂	kg CO ₂ /Gallon	Gallons
Gasoline	19,441	8.78	2,214,284
Diesel	1,581	10.21	154,807
Total			2,369,091

Sources:

^a Appendix B.

^b The Climate Registry 2018.

Notes: CO₂ = carbon dioxide; kg = kilogram; MT = metric ton.

Mobile sources from the project would result in approximately 2.37 million gallons of gasoline per year beginning in 2021. By comparison, California as a whole consumes approximately 19.3 billion gallons of petroleum per year (CEC 2016b). Countywide total petroleum use by vehicles is expected to be 987 million gallons per year by 2021 (CARB 2018).

Over the lifetime of the project, the fuel efficiency of the vehicles being used by the employees is expected to increase as is the number of electric cars in use. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). Additionally, in response to SB 375, CARB adopted the goal of reducing per-capita GHG emissions from 2005 levels by 8% by 2020, and 13% by 2035 for light-duty passenger vehicles in the planning area for the Southern California Association of Governments. The Southern California Association of Governments' *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy* quantified an 8% reduction of petroleum use by 2020 and an 18% reduction by 2030 (SCAG 2016). As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy. Furthermore, per **MM-AQ-2**, the project would provide transit subsidies for 100% of employees of the project for 3 to 6 months.

In summary, although the project would increase petroleum use during operation as a result of employees and customers traveling to and from the project site and project-related distribution of goods, the use would be a small fraction of the statewide use and, due to efficiency increases, would diminish over time. Given these considerations, petroleum consumption associated with the project would not be considered inefficient or wasteful and would result in a less-than-significant impact.

Conclusion

Implementation of the project would increase the demand for electricity and natural gas at the project site and petroleum consumption in the region during construction and operation. However, the electrical and natural gas consumption demands of the project during construction and operation would conform to the state's Title 24 and to CALGreen standards, which implement conservation measures. Further, as discussed in the impacts analysis sections of Sections 4.15, Utilities and Service Systems, and 4.6, Greenhouse Gas Emissions, the proposed project would not directly require the construction of new energy generation or supply facilities and providers of electricity and natural gas are in compliance with regulatory requirements that assist in conservation, including requirements that electrical providers achieve state-mandated renewable energy production requirements. The project's petroleum consumption demands during construction and operation would conform with CARB's Airborne Toxics Control Measure. Furthermore, the project would implement **Mitigation Measure (MM) AQ-1** and **MM-AQ-2**, which would further increase fuel efficiency of vehicles used in connection with the project over the lifetime of the project. With compliance with the above referenced mitigation measures, Title 24 conservation standards, and other regulatory requirements and implementation of the additional sustainable features described in **PDF-AQ/GHG-1** and **PDF-AQ/GHG-2**, the project would not be wasteful or inefficient or unnecessarily consume energy resources during construction or operation and would result in a less-than-significant impact with respect to consumption of energy resources.

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-than-Significant Impact. Construction and operation of the project would not conflict with state or local plans for renewable energy or energy efficiency. The project would be consistent with the City’s Climate Action Plan strategies, as discussed in Table 4.6-7 of Section 4.6, Greenhouse Gas Emissions; consistent with the City’s Climate Action Plan Strategy Goals, as discussed in Table 4.6-8; and consistent with the City’s General Plan policies, as discussed in Table 4.6-9. Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California’s energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. The project would comply with Title 24, Part 6, per state regulations. In addition, the applicant would install the following energy-saving PDFs: (a) LED lamps in the parking lots; (b) parking lot and exterior lights that would be controlled by a photo sensor and time clock; (c) reflective roof material on the Vineyard II building to produce lower heat absorption and thereby lower energy requirements; and, (d) high-efficiency restroom fixtures.

As discussed under the previous threshold, the project would result in an increased demand for electricity, natural gas, and petroleum. Title 24, Part 11, contains voluntary and mandatory energy measures that are applicable to the project under CALGreen. In order to comply with Title 24, Part 11 mandatory compliance, the applicant would do the following: (a) recycle construction waste and use recycled construction materials; (b) insulate building envelopes to exceed current energy code requirements; (c) install electric vehicle charging spaces; (d) generate on-site renewable energy; (e) install high-efficiency HVAC units; and (f) reduce indoor water use by 33%. Compliance with all of these mandatory measures would decrease the consumption of electricity, natural gas, and petroleum.

In addition, energy service to the project site would be provided to meet the needs of the project as required by the California Public Utilities Code, which obligates electricity and natural gas providers to provide service to existing and potential customers. Because the project would comply with Title 24, Part 6 and Part 11, and as further discussed in EIR Section 4.6, the project area’s existing distribution facilities have capacity to serve the project during construction and operation, no conflict with existing energy standards and regulations would occur.

The project would comply with regulatory requirements. As such, the project would not conflict with or obstruct an applicable state or local plan for renewable energy or energy efficiency and impacts would be considered less than significant.

4.16.5 Mitigation Measures

No mitigation is required.

4.16.6 Level of Significance after Mitigation

Impacts related to energy would be less than significant. Therefore, no mitigation measures are necessary.

4.16.7 Cumulative Impacts

Cumulative projects that could exacerbate the proposed project's impacts include any projects that could result in wasteful, inefficient, or unnecessary use of energy. Future projects would be subject to CEQA and would require an energy analysis, consistency with existing plans and policies for renewable energy and energy efficiency, and implementation of control measures and mitigation, if necessary, to avoid wasteful, inefficient, or unnecessary consumption of energy resources. Furthermore, the project would minimize construction and operational activities through energy reduction strategies pursuant to **PDF-AQ/GHG-1** and **PDF-AQ/GHG-2**. Therefore, the project's contribution to cumulative impacts would not be cumulatively considerable and cumulative impacts to energy use would be less than significant.

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4.17 Wildfire

This section describes the impacts of the proposed Costco/Vineyard II Retail Development Project (project) on wildfire and its contribution to regional wildfire conditions, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the project. Appendix G of the California Environmental Quality Act (CEQA) Guidelines was updated in December 2018 to include questions on wildfire. Thus, this section of this Environmental Impact Report (EIR) was added as a result of that update. Potential wildfire impacts resulting from construction and operation of the project were evaluated based on a review of existing resources and applicable laws, regulations, guidelines, and standards, as well as the Fire Assessment Summary Letter completed for the project and included as Appendix K. This section focuses on the effect of the project on wildfire risk. Fire protection services for the project are addressed in Section 4.11, Public Services.

4.17.1 Existing Conditions

Wildfire is a continuous threat in Southern California, and is particularly concerning in the wildland–urban interface, the geographic area where urban development either abuts or intermingles with wildland or vegetative fuels. The threat of wildland fire in or near the City of Murrieta (City) is high due to the wildland–urban interface areas in and around the City (City of Murrieta 2011a). During the summer season, dry vegetation, prolonged periods of drought, and Santa Ana wind conditions can combine to increase the risk of wildfires.

Wildland fire hazards exist throughout approximately 90% of Riverside County and the City in open space, parklands, and agricultural areas (City of Murrieta 2011a). Undeveloped hillside areas in and adjacent to the City present a potentially serious hazard, including the mountainous areas along the western boundary of the City, wildland areas in the Greer Ranch area in northern Murrieta, and the Hogbacks and Los Alamos area (City of Murrieta 2011a). The project site is located in the northeastern portion of the City, less than 1 mile north of some of these fire-prone wilderness areas within the City.

The project area is characterized as lowlands between the Hogbacks to the southeast and Greer Ranch Hills to the northwest. As discussed in Section 4.5, Geology and Soils, of this EIR, the site's ground surface generally slopes to the south from an elevation of approximately 1,550 feet to 1,520 feet, surrounded by relatively flat land. Existing slopes on site are highly variable due to the previous grading operation.

Fire History

The project area, like all of Riverside County, is subject to seasonal weather conditions that can heighten the likelihood of fire ignition and spread, and considering the site's terrain and vegetation, may result in fast-moving and moderate-intensity wildfire. Fire history is an important component of wildfire analysis. Wildfire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources, amongst others. The California Department of Forestry and Fire (CAL FIRE) maintains the Fire and Resource Assessment Program database, which was used to evaluate the project site's fire history to determine whether large fires have occurred in the project area, and thus the likelihood of future fires. Per the recorded fire history database, the site has not been subject to wildfire (CAL FIRE 2019). Recorded wildfires within 5 miles of the project site range from 31 acres (2007 Wright Fire) to 24,434 acres (1993 California Fire).

Fire Hazard Mapping

CAL FIRE's Fire and Resource Assessment Program database also includes map data documenting areas of significant fire hazards in the state. These maps categorize geographic areas of the state into different Fire Hazard Severity Zones (FHSZs), ranging from moderate to very high. CAL FIRE uses FHSZs to classify anticipated fire-related hazards for the entire state, and includes classifications for State Responsibility Areas, Local Responsibility Areas, and Federal Responsibility Areas. Fire hazard severity classifications take into account vegetation, topography, weather, crown fire production, and ember production and movement. As shown in Figure 4.17-1, Fire Hazard Severity Zones, the project site and surrounding area is designated as a Very High FHSZ within the Local Responsibility Area (CAL FIRE 2009).

Vegetation Communities and Land Covers

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (leaf size, branching patterns), and overall fuel loading.

A critical factor to consider is the dynamic nature of vegetation communities. Fire presence and absence at varying cycles or regimes affects plant community succession. Succession of plant communities, most notably the gradual conversion of shrublands to grasslands with high frequency fires and grasslands to shrublands with fire exclusion, is highly dependent on the fire regime. Further, biomass and associated fuel loading will increase over time if disturbance or fuel reduction efforts are not diligently implemented.

The vegetation types and land covers in the project area were identified during field assessments conducted for the project site. As detailed in Section 4.3, Biological Resources, the project site is characterized by six vegetation communities and three land cover types: California buckwheat scrub, disturbed California buckwheat scrub, fourwing saltbush scrub, chamise–black sage chaparral, chamise–California buckwheat, Mediterranean California naturalized annual and perennial grasslands, spreading grounds and detention basins, disturbed habitat, and developed land. Figure 3, Biological Resources Map, in Appendix K illustrates the distribution of vegetation communities and land covers in the study area (the project site and a 500-foot buffer), and Table 1 in Appendix K provides a summary of each land cover's extent. The study area consists of 72.08 acres and is dominated by 21 acres of developed land.

Topography/Terrain

Topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread up-slope and slower spread down-slope. Terrain that forms a funneling effect, such as chimneys, chutes, or saddles on the landscape can result in especially intense fire behavior, including faster spread and higher intensity. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and wind.

The project area is characterized as lowlands between the Hogbacks to the southeast and Greer Ranch Hills to the northwest. As discussed in Section 4.5 of this EIR, the site's ground surface generally slopes to the south from an elevation of approximately 1,550 feet to 1,520 feet, surrounded by relatively flat land. Existing slopes on site are highly variable due to the previous grading operation. The surrounding lands are relatively flat and do not contain slopes typical of exacerbating wildfire risks. Under existing conditions, the vacant property to the north is relatively flat and composed of approximately 20 acres of disturbed sage scrub and grasses. Slope gradients for natural slopes range from 5% to 18%.

Climate, Weather, and Wind

In the City, the summers are hot, arid, and mostly clear and the winters are long, cold, and partly cloudy. During the summer months (late June through September), the average daily temperature is above 83°F, and during the cooler, winter months (late November through March), the average daily temperature is below 69°F. The temperature varies throughout the year but is rarely below 34°F or above 95°F. Like much of Southern California, the City experiences seasonal variation in monthly rainfall throughout the year, with the wetter months lasting from October through April.

The project site, like much of Southern California, is influenced by prevailing wind patterns. Prevailing winds are winds that blow from a single direction over a specific area of the Earth. The predominant average hourly wind speed and direction in the City varies throughout the year. The wind is most often from the west from February through mid-November. The wind is most often from the east for approximately 2.5 months, from mid-November to early February. The windier part of the year lasts for approximately 7 months (mid-November through mid-June), with average wind speeds of more than 5.6 miles per hour (Weather Spark 2020).

4.17.2 Relevant Plans, Policies, and Ordinances

Federal

National Fire Protection Association Codes, Standards, Practices, and Guides

National Fire Protection Association codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. National Fire Protection Association standards are recommended guidelines and nationally accepted good practices in fire protection, but are not laws or codes unless adopted as such or referenced as such by the California Fire Code (CFC) or the local fire agency.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995, updated in 2001, and again in 2009 by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. An important component of the Federal Wildland Fire Management Policy is the acknowledgment of the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy and its implementation are founded on the following guiding principles, found in the Guidance for Implementation of Federal Wildland Fire Management Policy (National Wildfire Coordinating Group 2009):

- Firefighter and public safety is the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
- Fire management plans, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.

- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans and activities are based upon the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective.

National Fire Plan

The National Fire Plan, officially titled *Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000*, was a presidential directive in 2000 as a response to severe wildland fires that had burned throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and providing assurance for sufficient firefighting capacity in the future. The plan addresses five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The plan provides technical, financial, and resource guidance and support for wildland fire management across the United States. The USDA Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the plan (DOI/USDA 2000).

International Fire Code

Created by the International Code Council, the International Fire Code (IFC) addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage (although not a federal regulation, but rather the product of the International Code Council). The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the International Fire Code uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often times these measures include construction standards and specialized equipment). The International Fire Code uses a permit system (based on hazard classification) to ensure that required measures are instituted (International Code Council 2017).

State

California Government Code

California Government Code Sections 51175 through 51189 provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. CAL FIRE is responsible for classifying FHSZs based on statewide criteria, and makes the information available for public review. Further, local agencies must designate, by ordinance, Very High FHSZs within their jurisdiction based on the recommendations of CAL FIRE.

Section 51182 sets forth requirements for maintaining property within fire hazard areas, such as defensible space, vegetative fuels management, and building materials and standards. Defensible space around structures in fire hazard areas must consist of 100 feet of fuel modification on each side of a structure, but not beyond the property line unless findings conclude that the clearing is necessary to significantly reduce the risk of structure ignition in the event of a wildfire. Clearance on adjacent property shall only be conducted following written consent by the adjacent owner. Further, trees must be trimmed from within 10 feet of the outlet of a chimney or stovepipe, vegetation near buildings must be maintained, and roofs of structures must be cleared of vegetative materials. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Code of Regulations***Title 14 Natural Resources***

Title 14, Division 1.5, Chapter 7, Subchapter 3, Fire Hazard, also sets forth requirements for defensible space if the distances specified above cannot be met. For example, options that have similar practical effects include noncombustible block walls or fences, 5 feet of noncombustible material horizontally around the structure, installing hardscape landscaping or reducing exposed windows on the side of the structure with a less-than-30-foot setback, or additional structure hardening such as those required in the California Building Code (CBC), California Code of Regulations Title 24, Part 2, Chapter 7A.

Title 24 California Building Standards Code***California Building Code***

Part 2 of Title 24 contains the CBC. Chapter 7A of the CBC regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a fire hazard area. Fire hazard areas as defined by the CBC include areas identified as a FHSZ within a State Responsibility Area or a wildland–urban interface fire area. The purpose of Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of structures located in a fire hazard area to resist the intrusion of flames or burning embers projected by a wildfire, and to contribute to a systematic reduction in structural losses from a wildfire. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in Chapter 7A.

California Fire Code

Part 9 of Title 24 contains the CFC, which incorporates by adoption the International Fire Code with necessary California amendments. The purpose of this code is to establish the minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. Chapter 49 of the CFC contains minimum standards for development in the wildland–urban interface and fire hazard areas.

The CFC and Office of the State Fire Marshal provide regulations and guidance for local agencies in the development and enforcement of fire safety standards. The CFC is updated and published every 3 years by the California Building Standards Commission. The 2016 CFC took effect on January 1, 2017, and the 2019 CFC will take effect on January 1, 2020. The City adopted the 2016 CFC with local amendments in August 2018.

California Public Resources Code

California Public Resource Code, Section 4290, requires minimum fire safety standards related to defensible space that are applicable to residential, commercial, and industrial building construction in State Responsibility Area lands and lands classified and designated as Very High FHSZs. These regulations include road standards for fire apparatus access, standards for signs identifying roads and buildings, fuel breaks and green belts, and minimum water supply requirements. It should be noted that these regulations do not supersede local regulations which equal or exceed minimum regulations required by the state.

California Public Resource Code, Section 4291, requires a reduction of fire hazards around buildings located adjacent to a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered in flammable material. It is required to maintain 100 feet of defensible space around all sides of a

structure, but not beyond the property line unless required by state law, local ordinance, rule, or regulations. Further, California Public Resource Code, Section 4291 requires the removal of dead or dying vegetative materials from the roof of a structure, and trees and shrubs must be trimmed from within 10 feet of the outlet of a chimney or stovepipe. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

Fire Hazard Severity Zones

CAL FIRE maps FHSZs based on fuel loading, slope, fire history, weather, and other relevant factors as directed by California Public Resources Code, Sections 4201–4204, and California Government Code Sections 51175–51189. FHSZs are ranked from Moderate to Very High, and are categorized for fire protection within a Federal Responsibility Area, State Responsibility Area, or Local Responsibility Area under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively. As shown in Figure 4.17-1, the project site and surrounding area is designated as a Very High FHSZ within the Local Responsibility Area (CAL FIRE 2009).

California Strategic Fire Plan

The 2018 Strategic Fire Plan for California reflects CAL FIRE’s focus on fire prevention and suppression activities to protect lives, property, and ecosystem services, and natural resource management to maintain the state’s forests as a resilient carbon sink to meet California’s climate change goals and to serve as important habitat for adaptation and mitigation. The Strategic Fire Plan for California provides a vision for a natural environment that is more fire resilient, buildings and infrastructure that are more fire resistant, and a society that is more aware of and responsive to the benefits and threats of wildland fire, all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2018). Plan goals include the following:

1. Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.
2. Promote and support local land use planning processes as they relate to: (a) protection of life, property, and natural resources from risks associated with wildland fire, and (b) individual landowner objectives and responsibilities.
3. Support and participate in the collaborative development and implementation of local, county and regional plans that address fire protection and landowner objectives.
4. Increase fire prevention awareness, knowledge and actions implemented by individuals and communities to reduce human loss, property damage and impacts to natural resources from wildland fires.
5. Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
6. Determine the level of resources necessary to effectively identify, plan and implement fire prevention using adaptive management strategies.
7. Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
8. Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed.

Local

In addition to the relevant plans, policies, and ordinances identified below, Section 4.11 of this EIR provides information on the City's fire protection services.

City of Murrieta General Plan

The following goals and policies from the City of Murrieta General Plan are relevant to the proposed project (City of Murrieta 2011b):

- Goal SAF-5** Damage from fire hazards is minimized through preventive measures, education, and fire protection services.
- Policy SAF-5.1** Continue efforts to reduce fire hazards associated with older buildings, multifamily housing, and fire-prone industrial facilities throughout the City.
 - Policy SAF-5.2** Provide public safety education programs through the Fire Department to reduce accidents, injuries and fires, as well as to train members of the public to respond to emergencies.
 - Policy SAF-5.3** Continue to coordinate fire protection services with Riverside County, CAL FIRE, and all other agencies and districts with fire protection powers.
 - Policy SAF-5.4** Ensure that outlying areas in the City can be served by fire communication systems as new development occurs.
 - Policy SAF-5.5** Require that all dedicated open space or undeveloped areas meet specifications for fire safety.
- Goal SAF-7** Reduced incidence of damage to life and property from wildland fires.
- Policy SAF-7.1** Continue to require development in high fire hazard areas to use fire-resistant building materials and landscaping, and to meet fire chief specifications for fuel modification, access, and water facilities.
 - Policy SAF-7.2** Evaluate all new development to be located in or adjacent to wildland areas to assess its vulnerability to fire and its potential as a source of fire.
 - Policy SAF-7.3** Encourage the use of development features such as roads and irrigated/landscaped open space to buffer homes from wildland fire.

- Policy SAF-7.4** Promote community education about preventing wildfire ignition, using fire resistant building features, and creating defensible space around homes.
- Policy SAF-7.5** Continue to implement a weed abatement program to reduce fire hazards on private properties.

City of Murrieta Municipal Code

Chapter 15, Part 24 of the City’s Municipal Code contains the CFC with local amendments. A city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological, or topographical conditions. The code contains provisions for fire prevention and safety, reflecting regulations set forth by the CFC. Murrieta Municipal Code Sections 15.24.270 through 15.24.290 (Sections 4903 through 4907 of the CFC, revised) contain regulations specific to development in fire hazard areas, such as construction methods, fuel modification, setbacks, defensible space, water supply, fire-flow, and emergency access.

Per Section 15.24.270 of the City’s Municipal Code (CFC 4903), Planning and Development Services or Murrieta Fire and Rescue (MFR) can require a Fire Protection Plan to be prepared as part of the approval process for any development proposal in a wildland-urban interface fire area. Section 15.24.290 of the City’s Municipal Code (CFC 4907) sets forth requirements for the provisioning of defensible space, including structure setbacks and fuel modification. Section 4907.2 indicates that a fuel modification zone (FMZ) shall be required around every building within a hazardous fire area that is designed primarily for human habitation or use. Where setbacks are 100 feet or more from the property line, an FMZ shall be maintained within 100 feet of the building or structure. The area within 50 feet of a building or structure shall be cleared of vegetation that is not fire resistant and re-planted with fire-resistant plants. In the area between 50 to 100 feet from a building, all dead and dying vegetation shall be removed. Native vegetation may remain in this area provided that the vegetation is modified so that combustible vegetation does not occupy more than 50% of the square footage of this area. Weeds and annual grasses shall be maintained at a height not to exceed 6 inches. The chips from chipping of vegetation that is done on site may remain if the chips are dispersed so they do not exceed 6 inches in depth. Trees may remain in both areas provided that the horizontal distance between crowns of adjacent trees and crowns of trees and structures is not less than 10 feet.

Where a setback is less than 100 feet from the property line, the person owning or occupying the building or structure shall meet the requirements detailed above, to the extent possible, in the area between the building or structure and the property line. Further, the building official and the fire code official may provide lists of prohibited and recommended plants.

The FMZ shall be located entirely on the subject property unless approved by the Murrieta Planning Department and MFR. This required FMZ may be reduced or increased as required by a fire protection plan.

City of Murrieta Emergency Operations Plan

The City’s Emergency Operations Plan (EOP), adopted in June 2017, addresses the planned response to extraordinary emergency situations associated with natural disasters, national security emergencies, and technological incidents affecting the City. The EOP was prepared in order to ensure the most effective allocation of resources for the protection of people and property in the event of an emergency. The City’s EOP describes the operations of the City’s Emergency Operations Center, which is the central management entity responsible for directing and coordinating the various City departments and other agencies in their emergency response activities. The City’s Emergency Operations Center centralizes the collection and dissemination of information during an

emergency, and makes policy-level decisions about response priorities and the allocation of resources. As part of the City's Emergency Management Program, the City's Emergency Operations Center Manager (the Emergency Operations Center Manager in the City is, by order rank, the City Manager, Assistant City Manager, Fire Chief, and Police Chief) is responsible for ensuring the readiness of the Emergency Operations Center (City of Murrieta 2017).

City of Murrieta Development Impact Fee

New development would be required to pay its fair share of the City's Development Impact Fee, a portion of which covers costs associated with fire protection, including fire department staffing and the construction of fire department facilities. The Development Impact Fee amount is determined through evaluation of the need for new public service facilities based on the level of service demanded by a new development (City of Murrieta 2018). As discussed in Section 4.11 of this EIR, the current fee schedule for the City indicates the fee for commercial development is \$11.49 per square foot, with allocations distributed to law enforcement, fire protection, road infrastructure, storm drainage, and general facilities.

4.17.3 Thresholds of Significance

The significance criteria used to evaluate the proposed project's impacts related to wildfire are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to wildfire would occur if the project is located in or near state responsibility areas or lands classified as very high fire hazard severity zone and would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan;
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.17.4 Impacts Analysis

As shown in Figure 4.17-1, the project site is located in a Very High FHSZ within the Local Responsibility Area (CAL FIRE 2009). Therefore, the project would be subject to the regulatory framework related to development in FHSZs outlined in Section 4.17.2. The following analysis is based, in part, on the Fire Assessment Summary Letter prepared for the project and included as Appendix K.

Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less-than-Significant Impact. Currently the City has no defined emergency routes; however, Interstate 15 and Interstate 215 may be considered emergency routes, as they traverse the City and connect to multiple major roads (City of Murrieta 2011b). The Interstate 215 freeway travels north to south through the City and is located immediately west of the project site. As analyzed in Section 4.13, Transportation, of this EIR, the project is not anticipated to significantly impact the freeway mainline facilities. Thus, the project would not impact any potential emergency evacuation routes in the City.

The City's EOP is designed to ensure the most effective response and allocation of resources in the event of an emergency, and is intended to facilitate multi-agency and multi-jurisdictional coordination (City of Murrieta 2017). MFR also provides emergency preparedness information and safety tips specific to wildland fires. In the event of a major emergency such as fire, hazardous materials spill, police activity or other situation which may directly impact the City of Murrieta or its residents, the City's Emergency Incident Information website page will contain updated information on the nature of the incident, potential impacts to traffic circulation, possible evacuations, and other pertinent information (City of Murrieta 2011b). The project would not hinder implementation of the City's EOP in the event of an emergency, and emergency response procedures specific to the site would be coordinated through the City.

In addition, the project would be designed to provide adequate vehicular and emergency apparatus access. As discussed in Section 4.13 of this EIR, the project would not result in inadequate emergency access. The project would be required to design, construct, and maintain structures, roadways, and facilities in compliance with applicable local, regional, state, and federal requirements related to fire safety, emergency access, and evacuation plans, as well as building materials, setbacks, and defensible space requirements for development in fire hazard areas (see Section 4.17.2).

As discussed in Section 4.13 of this EIR, mitigation has been proposed to offset any potential impacts to traffic and circulation that could result from project construction or operation. Further, the project would be designed to provide adequate vehicular and emergency apparatus access with multiple points of ingress/egress via driveways off Warm Springs Parkway, Creighton Avenue, and Antelope Road. Drive aisles, turning radii, and all access points would be designed with adequate emergency access. The proposed site plan is subject to approval by the City and the City's Fire Department. Further, the City and the City's Fire Department would review any modifications to existing roadways to ensure that adequate emergency access or emergency response would be maintained. Further, travel distance from the nearest fire station (Fire Station No. 4) and potential impacts to existing emergency services have been addressed in Section 4.11. As discussed in Section 4.11, the project would result in a less-than-significant impact to public services, including fire protection services.

Upon review and approval of the site plan, the project would not conflict with emergency ingress or egress. Further, adherence to regulatory requirements would ensure that the project would not substantially impair an emergency response plan or emergency evacuation plan. Impacts would be less than significant, and no mitigation is required.

Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less-than-Significant Impact with Mitigation Incorporated. The project could result in an impact related to exacerbating wildfire risk and thus, exposing project occupants to pollutant concentrations from a wildfire or the uncontrollable spread of a wildfire, if the project were to increase the risk of a wildfire occurring and the climatic, topographic, vegetation, weather conditions, and other factors associated with the project site aid in increasing the severity of such an occurrence. As previously discussed, the project site is located within a Very High FHSZ (Figure 4.17-1) (CAL FIRE 2009; Exhibit 5.17-1, City of Murrieta 2011a) and thus is subject to the regulations governing development in fire hazard areas. The project would be required to design, construct, and maintain structures, roadways, and facilities in compliance with applicable local, regional, state, and federal requirements related to fire safety, emergency access, and evacuation plans, as well as building materials, setbacks, water supply, hydrants, fire-flow, and defensible space requirements for development in fire hazard areas. Included in Section 4.17.2, these local, state, and federal rules, regulations, and policies set forth minimum standards for development strategies, building materials and systems, and fire prevention strategies for development in the wildland-urban interface and fire hazard areas to reduce the risk of structural damage and losses and protect life and property. As local agencies may amend state policies to establish more restrictive building standards reasonably necessary because of local climatic, geological or topographical conditions (CFC 2016), compliance with the

Murrieta Municipal Code would ensure compliance with applicable state policies, rules, or regulations related to development in fire hazard areas, including Chapter 49 of the CFC, California Public Resources Code, Sections 4290 and 4291, and California Government Code Sections 51175 through 51189. A discussion of compliance with these development standards has been included in the following analysis, as well as a summary of the results of the Fire Assessment (Appendix K) completed for the project.

Construction

Construction of the project would introduce potential ignition sources to the project site, including the use of heavy machinery and the potential for sparks during welding activities or other hot work. However, the project would be required to comply with City and state requirements for activities in hazardous fire areas, including fire safety practices, to reduce the possibility of fires during construction activities. Per Section 15.24.250 of the City's Municipal Code, Fuel Modification Zone Requirements, adequate defensible space must be created before bringing any combustible materials on to the project site, and vegetation management must take place throughout the duration of project construction. Implementation of the regulatory standards set forth in the City's Municipal Code would reduce the risk of wildfire ignition and spread on the project site during construction activities. Therefore, with adherence to City Code, project construction would not exacerbate wildfire risk, and impacts related to project construction would be less than significant.

Operation

The project site is surrounded by existing development or proposed development on all sides, with the exception of vacant land to the north. Residential development is located immediately east of the project site, and once the surrounding lands to the south and west are developed with additional commercial retail, as proposed, the likelihood of a wildfire approaching from these directions would be minimal. Nonetheless, the Fire Assessment evaluates the potential fire behavior for two wildfire scenarios: an offshore, wind-driven fire (Santa Ana conditions) approaching the project site from within the grass- and shrub-covered open space area to the north and an onshore, wind-driven fire approaching the project site from within the grass- and shrub-covered vacant land to the west, with assumptions made for the pre-project slope and fuel conditions. The report includes a review of the project area's fire history, vegetation communities, and land cover (these details have been included in Section 4.17.1, Existing Conditions).

The potential fire behavior model was conducted using the BehavePlus fire behavior modeling software package. Fire behavior is affected by topography (slope, aspect, and elevation), weather (wind, air temperature), and seven principal fuel characteristics: fuel loading, fuel size, fuel shape, compactness, horizontal continuity, vertical arrangement, and moisture content and chemical properties, all of which are inputs the fire behavior model considers. The location of the fire scenarios and summary of fire modeling inputs are presented in Figure 4 of Appendix K. The modeling inputs and considerations are also summarized below.

Fire Modeling Behavior Considerations/Inputs

Topography/Terrain

As disclosed in Section 4.17.1, Existing Conditions, the project is currently undeveloped with highly variable slopes due to the mass grading activities associated with the site's previous use as a sand and gravel grading operation. However, the project site would be graded as part of the proposed project. The proposed project would include cut and fill operations and compaction to create a level project site. The surrounding lands are relatively flat and do not contain slopes typical of exacerbating wildfire risks.

Slope gradients for natural slopes range from 5% to 18% (a 15% average slope gradient was used in fire modeling scenario 1 and an 8% average slope grade was used in scenario 2) and graded slopes are assumed to be 50% (2:1 manufactured slopes).

Weather/Wind

Historical weather data for the region was utilized in determining appropriate fire behavior modeling inputs for the project site. The fire behavior model utilizes the 97th percentile (extreme offshore wind conditions) and 50th percentile (onshore wind conditions) fuel moisture and wind speed values obtained from the Santa Rosa Plateau Remote Automatic Weather Station, located approximately 8.9 miles southwest of the project site. The 50th and 97th percentile wind speeds are commonly used for fire behavior modeling to represent typical and extreme fire weather conditions. The wind data is derived from historical weather data resulting in realistic depictions of future wind events. Data from the Remote Automatic Weather Station was evaluated from June 1 through November 30 for each year between 1998 and 2018. Data derived from the Remote Automatic Weather Station included 1-hour, 10-hour, and 100-hour fuel moistures, live herbaceous moisture, live woody moisture, and 20-foot sustained wind speed. 50th and 97th percentile wind speeds and fuel moisture data were used in the BehavePlus fire behavior modeling scenarios.

The analysis conservatively assumes a worst-case scenario wildfire being fanned by 50 mph offshore winds (fire approaching from the north) in untreated sage scrub habitat, and a worst case scenario wildfire being fanned by 21 mph sustained, onshore winds (fire approaching from the west) in untreated grass/scrub habitat.

Fuels

The vegetation types and land covers in the project area, as identified in Section 4.17.1, were derived from field assessments conducted for the project site as part of the Fire Assessment, and then classified into a fuel model. The fuel models were used in the BehavePlus fire behavior modeling runs for existing conditions as follows: fuel model Sh2 (Moderate Load, Dry Climate Shrub) for sage scrub along western property boundary, fuel model Sh5 (High Load, Dry Climate Shrub) for sage scrub at top of slope, and fuel model Gs2 (Moderate load, Dry Climate Grass-Shrub) for grass/sage shrub. Further, while past disturbances (e.g., grass and brush clearance for fuel reduction) have altered fuel beds on some areas of the property, modeling efforts presented herein assume more mature stand conditions for the grass–sage scrub habitats.

Fire Modeling Results

As presented in Appendix K, the analysis utilizing the BehavePlus software package was conducted to evaluate fire behavior variables and to objectively predict flame lengths, fire intensities, fire spread rates, and fire spotting distances under existing conditions. Modeled fire behavior indicated that scenario 1 (a worst-case wildfire being fanned by 50 mph offshore winds and approaching the site from the north in untreated sage scrub habitat (Fuel Model Sh5) would result in a fire spreading at approximately 6.8 mph with the highest flame length values reaching approximately 45 feet in specific portions of the property. Maximum spotting distance for an offshore wind-driven fire is projected to occur at 2.4 miles, downwind. Additionally, scenario 2 (a worst case wildfire being fanned by 21 mph onshore winds and approaching the site from the west in untreated grass/scrub habitat (Fuel Model Gs2) would result in a fire spreading at approximately 0.6 mph with highest flame length values reaching approximately 7.6 feet in specific portions of the property. Maximum spotting distance for an offshore wind-driven fire is projected to occur at 0.4 miles, downwind.

Fuel Modification Zones and Building Materials

Because the modified project site is located in a Very High FHSZ, implementation of fire safety requirements such as ignition-resistant building materials and vegetation management to create defensible space and FMZs would be required. An FMZ is a strip of land where combustible vegetation has been removed and/or modified and partially or totally replaced with more adequately spaced, drought-tolerant, low-fuel-volume plants in order to provide a reasonable level of protection to structures from wildland fire. FMZs are designed to provide vegetation buffers that gradually reduce fire intensity and flame lengths from advancing fire by strategically placing thinning zones and irrigated zones adjacent to each other on the perimeter of the wildland-urban interface exposed structures. An important dual function of the FMZ is to reduce the ability of a fire igniting in developed areas and spreading into wildlands by providing a buffer between developed areas and natural areas. Fires that ignite in a developed area do not easily spread through an FMZ into wildlands.

A typical FMZ consists of at least 100 feet of vegetation thinning or removal, measured in a horizontal plane from the exterior façade of all structures towards the undeveloped areas. Per Section 15.24.290 of the Murrieta Municipal Code (as well as CFC Chapter 49 Section 4906 and 4907; California Public Resources Code, Section 4291; and California Government Code Section 51182), a 100-foot FMZ is required around structures in fire hazard areas, to the extent possible (i.e., not beyond the property line). Based on the site plan, the majority of the project site achieves 100 feet or more of on-site FMZ in the northern portion of the site, which consists of asphalt roadways and parking stalls, and a fully irrigated landscape with City and MFR-approved plant species. However, conceptual building footprints partially protrude into the 100-foot FMZ along the northern boundary. More specifically, the northwestern portion of the Costco warehouse development provides 64 feet of achievable on-site fuel modification.

The distance between a wildfire that is consuming wildland fuel and a building is the primary factor for structure ignition (not including burning embers) (Cohen 2000). Larger flame lengths and widths require wider FMZs to reduce structure ignition (Cohen 1995). For example, structure ignition assessment modeling results indicate that a 20-foot-high flame has minimal radiant heat to ignite a (bare wood) structure beyond 33 feet (horizontal distance). For example, a 70-foot-high flame may require about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). The ignition-resistant exterior walls of the proposed structures would provide greater protection from wildfire than the bare wood structures used in the study. The proposed building materials for project structures include fire-rated split face concrete masonry unit (CMU), metal panel exterior wall designs, seam metal roofing, plaster, and other fire-resistant materials to be implemented on the Costco warehouse building and the Vineyard II retail buildings. Studies indicate that given certain assumptions (e.g., 10 meters of low fuel landscape, no open windows), a wildfire is unlikely to spread to buildings unless the fuel and heat requirements of the building are sufficient for ignition and continued combustion (Alexander et al. 1998; Cohen 1995). Construction materials and methods can prevent or minimize ignitions. Case studies indicate that, with nonflammable roofs and vegetation modification from 10–18 meters (roughly 32–60 feet) in Southern California fires, 85%–95% of the homes survived (Foote and Gilliss 1996; Howard et al. 1973). Similarly, post-fire assessments in San Diego County indicate that updated building codes have shown success in preventing structural loss (IBHS 2008). If structures have a sufficiently low ignitability, such as the proposed project's structures, the buildings can survive exposure to wildfire without major fire destruction. Low-ignitability provides the option of reducing the wildland fire threat to structures without extensive wildland fuel reduction.

For the areas of the project site where 100 feet of on-site FMZ is not achievable due to site constraints (i.e., the northwestern portion of the Costco site), the proposed building construction design features would provide adequate separation and radiant heat protection from a wildfire. These design features would include fire-rated split-face CMU and textured insulated metal panel exterior walls along the north side of building; a National Fire

Protection Association 13 Commercial Fire Sprinkler System and fire rated exterior doors, along with asphalt roadways and parking; and a fully irrigated landscape with drought-tolerant, fire resistive plantings. Therefore, the inability to achieve a full 100-foot FMZ in the northwestern portion of the project site is not expected to facilitate wildfire spread, given the proposed fire-resistant building materials.

Additionally, the open space land west of the project site, on the western side of Antelope Road, is proposed for future commercial development. A notice of preparation for this development to the west has been submitted to the City, but it is not known when construction will begin. Development of the site would mitigate the fire risk; however, until such a time that the property to the west is developed, **Mitigation Measure (MM) WF-4** would be required to reduce impacts to less than significant. **MM-WF-4** identifies a 20-foot on-site Costco building setback and the 40-foot wide Antelope Road as a 60-foot “No Build Easement” on the western side of the Costco development, which can be used as the interim FMZ. Once construction of the proposed development to the west begins, it will augment the off-site FMZs. Figure 5 of Appendix K illustrates the FMZs recommended for the project.

Given the low ignitability of the proposed structures and the 64-foot to over-100-foot distance between project structures and vegetative fuels, the project would not facilitate or exacerbate fire spread, and project occupants would not be exposed to extreme heat, the uncontrollable spread of a wildfire, or prolonged pollutant concentrations in the event of a wildfire.

An important component of a fire protection system for this project is the provision for ignition-resistant construction and modified vegetation buffers. The structure ignition-resistance standards detailed in the 2016 CFC and Chapter 7A of the 2016 CBC would enable the structures to withstand the type of wildfire that may occur in the fuels outside the development footprint. FMZ requirements and fully irrigated landscapes with drought-tolerant, fire-resistive plantings would provide a reasonable level of wildfire protection to the ignition-resistant structures.

Based on Appendix K, in compliance with the development standards discussed in Section 4.17.2, the enhanced building features, including an 8-inch split-face CMU and textured insulated metal panel exterior walls along the northern side of the Costco building, along with the commercial interior fire sprinkler system, would provide a functional safety equivalent of a 100-foot FMZ and would be the equivalent or a better level of fire protection compared to placing an 8-foot non-combustible fire wall along the northern boundary.

The Fire Assessment considers the project area’s fire history, historical weather and wind data, terrain, and fuels, and concludes that the project would not exacerbate wildfire risks, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, or other factors. Nonetheless, mitigation measures have been provided to further reduce the risk of wildfire. With implementation of **MM-WF-1** through **MM-WF-4**, impacts related to exacerbation of a wildfire or exposure to pollutant concentrations would be less than significant.

Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Less-than-Significant Impact. The project would involve construction of a new retail development, consisting of a Costco warehouse and fuel station and the Vineyard II development, consisting of a fitness center, a major retail pad and four smaller retail shops, one restaurant, one drive-through fast-food restaurant, two detention basins, and associated parking. The project would require the construction of project driveways and roadways. The project would include development of Warm Springs Parkway, a four-lane road that would run north/south and connect to the existing Clinton Keith Road. It is not anticipated that installation or maintenance of the road would exacerbate fire

risk, since the road would be surrounded by developed land to the east and west and the road would enhance access to the area by firefighters. Further, the project site is located in a predominantly developed area, and would connect to existing utilities.

As discussed in Section 4.15, Utilities and Service Systems, a master water study (Appendix J-2) was completed for the project to analyze the project's effect on water service in the project area. The study found that the project would not directly require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. The master water study included an estimation of projected water usage by the project and a hydraulic analysis to evaluate the performance of the existing water distribution system with the additional water demand of the project. Water demand calculations were completed in accordance with the Eastern Municipal Water District (EMWD) Water System Planning & Design Principal Guidelines Criteria (EMWD 2007). To account for cumulative effects on infrastructure facilities directly serving the project, the master water study also accounted for the projected water use of proposed projects immediately surrounding the project site.

Under the future demand conditions of the project and other proposed projects, the existing water distribution system showed no deficiencies. Calculations indicated the greatest demand would occur when maximum daily demand and fire flows combined. Under this scenario, the master water study found that the existing water distribution system would be able to provide a residual 53 pounds per square inch of pressure, well above the minimum fire flow requirement of 20 pounds per square inch residual, as required by Eastern Municipal Water District's Water System Planning & Design Principal Guidelines Criteria. As a result, the project would not directly require or result in the relocation or construction of new or expanded water facilities.

Additionally, all new power lines serving the project would be undergrounded along Antelope Road, north of the project site. Therefore, the project would not require installation or maintenance of other associated power lines or other utilities that would exacerbate fire risk. The project would require the installation and maintenance of FMZs. However, FMZs are designed to provide vegetation buffers that gradually reduce fire intensity and flame lengths from advancing fire, and would reduce, rather than exacerbate, wildfire risk. FMZs and other vegetation management activities would occur prior to the start of construction and throughout the life of the project. Consequently, the installation of associated infrastructure would not exacerbate fire risk, provided that FMZs and other vegetation management activities are implemented and enforced according to City and state requirements. The proposed FMZs and other vegetation management activities reduce the fire risk by thinning or removing combustible vegetation and implementing a landscape plan with more adequately spaced, drought-tolerant, low-fuel-volume plants in order to provide a reasonable level of protection to structures from wildland fire. Installation of project roads, service utilities, FMZs, drainage and water quality improvements, and other associated infrastructure would not exacerbate wildfire risks provided that the appropriate fire prevention, access, and vegetation management activities are implemented.

Given that the activities involved with installation or maintenance of associated infrastructure would require ground disturbance and the use of heavy machinery associated with trenching, grading, site work, and other construction and maintenance activities, the installation of related infrastructure could potentially result in temporary or ongoing impacts to the environment. However, the installation and maintenance of roads, FMZs, service utilities, and drainage and water quality improvements is part of the project analyzed herein. As such, any potential temporary or ongoing environmental impacts related to these components of the proposed project have been accounted for and analyzed in this EIR as part of the impact assessment conducted for the entirety of the project. Additionally, the project would be required to comply with all regulatory requirements and mitigation measures outlined within this EIR for the purposes of mitigating impacts associated with trenching, grading, site work, and the use of heavy

machinery. No adverse physical effects beyond those already disclosed in this EIR would occur as a result of implementation of the project's associated infrastructure.

Therefore, the installation and maintenance of associated infrastructure would not exacerbate wildfire risk or result in impacts to the environment beyond those already disclosed in this EIR, and impacts would be less than significant.

Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less-than-Significant Impact. The project site has been utilized for rock, sand, and gravel removal since approximately 2006, and therefore has exposed soil and bedrock and has very limited vegetation. Existing slopes on site are highly variable due to the previous grading operation. As discussed in Section 4.8, Hydrology and Water Quality, existing drainage patterns carry stormwater runoff toward three locations northeast, southeast, and southwest of the project site. Development of the site would result in grading to a level surface, altering the existing drainage pattern of the site. However, the project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. Further, project design would involve use of biofiltration and self-mitigating drainage management areas, where feasible, as hydromodification tools (see Section 4.8 for further details). Due to the proposed grading of the site, the relatively flat surrounding lands, and the fact that the site would be paved for development and parking, it is unlikely that the project would expose people or structures to downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant.

4.17.5 Mitigation Measures

As previously mentioned, due to site constraints, it is not possible to achieve the full 100-foot FMZ width for a portion of the northern side of the Costco structure. As such, the following mitigation measures detail both required elements for construction in a high fire hazard area and additional measures that would mitigate for the non-conforming FMZ. These mitigation measures are based on the analysis results and focus on providing the functional equivalence of a full 100-foot FMZ and provide justification for the reduced FMZ along portions of the northern boundary of the project.

MM-WF-1 The following design features shall be implemented to mitigate potential fire exposure to the northern portion of the development.

- Building construction shall consist of Underwriters Laboratories (UL) Approved Fire-Rated 8-inch split face concrete masonry unit (CMU) and textured insulated metal panel exterior walls along the northern side of the building. It should be noted, exterior walls composed of hollow CMU having a nominal thickness of 8-inches or greater may have a 2-hour fire rating, but can be classified as 4-hour when the hollow spaces are completely filled with grout or a material such as clay slate, slate, or sand;
- The building shall include an interior National Fire Protection Association (NFPA) 13 Commercial Fire Sprinkler System which shall be installed to NFPA installation standards. A supervised fire alarm system shall also be installed pursuant to NFPA 72 and Murrieta Fire and Rescue (MFR) standards and smoke detectors shall be installed at the ceiling throughout the Costco building and in every room;
- Areas requiring ventilation to the outside environment shall require either ember-resistant roof vents or a minimum 1/16-inch mesh to a maximum 1/8-inch mesh for side ventilation (see

2019 California Building Code (CBC) Chapter 7A Section 706A-Vents, or current edition). All vents used for this project shall be approved by MFR;

- The metal trash compactors to be located along the north side of the Costco building shall be fully enclosed. The enclosed metal trash compactors would prevent embers falling onto Class A fuels (e.g., paper) and igniting them. Additionally, the trash compactors shall be behind an 8-inch split face CMU exterior wall and metal gate;
- The uncovered, 30-foot by 25-foot loading area located along the north side of the Costco building shall be used for small delivery trucks;
- An unimpeded, all-weather pathway (minimum three feet wide) shall be included on all sides of the Costco building for firefighter access around the entire perimeter of the structure;
- Any architectural projections or construction, such as canopies, on the north side of the Costco building and within the 100-foot fuel modification zone shall be of non-combustible construction, only.
- Automatic or self-closing doors shall be installed along the northern side of the Costco building and conform to the exterior door assembly standards addressed in CBC Chapter 7A, Section 704A.3.2.3.

MM-WF-2 A fully irrigated landscape planted with drought-tolerant, fire resistive plants, as listed in Table 4.17-1, shall be planted within all fuel modification zones. No undesirable, highly flammable plant species shall be planted, as listed in Table 4.17-2. The landscaping shall be routinely maintained and shall be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would prevent ignition by embers from a wildfire.

Table 4.17-1. Costco Plant Pallet

Botanical Name	Common Name
Site Trees	
<i>Arbutus u.</i> 'Marina	Marina Strawberry Tree
<i>Lagerstroemia x</i> 'Watermelon Red'	Crape Myrtle
<i>Quercus ilex</i>	Holly Oak
<i>Ulmus parvifolia</i> 'Drake'	Drake Evergreen Elm
Street and Parking Lot Trees	
<i>Platanus x acerifolia</i> 'Columbia'	London Plane Tree
Site Shrubs	
<i>Caesalpinia gilliesii</i>	Yellow Bird of Paradise
* <i>Callistemon viminalis</i> 'Little John'	Dwarf Bottle Brush
<i>Dianella caerulea</i> 'Cassa Blue'	Cassa Blue Flax Lily
<i>Juncus mexicanus</i>	Mexican Rush
<i>Leucophyllum frutescens</i> 'Gr. Cloud'	Green Cloud Texas Ranger
Site Vines	
<i>Macfadyena unguis-cati</i> /	Yellow Trumpet Vine
Site Groundcover	
<i>Baccharis pilularis</i>	<i>Baccharis pilularis</i> "Pigeon Point"

Notes:

- * Dwarf Bottle Brush shrub is allowed because it is a dwarf variety of the *Callistemon spp.* that is drought tolerant, fire resistive, and is not found under the shrub and groundcover section of the prohibited plant list.

Table 4.17-2. Prohibited Plant List

Botanical Name	Common Name	Comment*
Trees		
<i>Abies species</i>	Fir	F
<i>Acacia species</i> (numerous)	Acacia	F, I
<i>Agonis juniperina</i>	Juniper Myrtle	F
<i>Araucaria species</i> (<i>A. heterophylla</i> , <i>A. araucana</i> , <i>A. bidwillii</i>)	Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya)	F
<i>Callistemon species</i> (<i>C. citrinus</i> , <i>C. rosea</i> , <i>C. viminalis</i>)	Bottlebrush (Lemon, Rose, Weeping)	F
<i>Calocedrus decurrens</i>	Incense Cedar	F
<i>Casuarina cunninghamiana</i>	River She-Oak	F
<i>Cedrus species</i> (<i>C. atlantica</i> , <i>C. deodara</i>)	Cedar (Atlas, Deodar)	F
<i>Chamaecyparis species</i> (numerous)	False Cypress	F
<i>Cinnamomum camphora</i>	Camphor	F
<i>Cryptomeria japonica</i>	Japanese Cryptomeria	F
<i>Cupressocyparis leylandii</i>	Leyland Cypress	F
<i>Cupressus species</i> (<i>C. forbesii</i> , <i>C. glabra</i> , <i>C. sempervirens</i> ,)	Cypress (Tecate, Arizona, Italian, others)	F
<i>Eucalyptus species</i> (numerous)	Eucalyptus	F, I
<i>Juniperus species</i> (numerous)	Juniper	F
<i>Larix species</i> (<i>L. decidua</i> , <i>L. occidentalis</i> , <i>L. kaempferi</i>)	Larch (European, Japanese, Western)	F
<i>Leptospermum species</i> (<i>L. laevigatum</i> , <i>L. petersonii</i>)	Tea Tree (Australian, Tea)	F
<i>Lithocarpus densiflorus</i>	Tan Oak	F
<i>Melaleuca species</i> (<i>M. linariifolia</i> , <i>M. nesophila</i> , <i>M. quinquenervia</i>)	Melaleuca (Flaxleaf, Pink, Cajeput Tree)	F, I
<i>Olea europaea</i>	Olive	I
<i>Picea</i> (numerous)	Spruce	F
<i>Palm species</i> (numerous)	Palm	F, I
<i>Pinus species</i> (<i>P. brutia</i> , <i>P. canariensis</i> , <i>P. b. eldarica</i> , <i>P. halepensis</i> , <i>P. pinea</i> , <i>P. radiata</i> , numerous others)	Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey)	F
<i>Platycladus orientalis</i>	Oriental arborvitae	F
<i>Podocarpus species</i> (<i>P. gracilior</i> , <i>P. macrophyllus</i> , <i>P. latifolius</i>)	Fern Pine (Fern, Yew, Podocarpus)	F
<i>Pseudotsuga menziesii</i>	Douglas Fir	F
<i>Schinus species</i> (<i>S. molle</i> , <i>S. terebinthifolius</i>)	Pepper (California and Brazilian)	F, I
<i>Tamarix species</i> (<i>T. africana</i> , <i>T. aphylla</i> , <i>T. chinensis</i> , <i>T. parviflora</i>)	Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk)	F, I
<i>Taxodium species</i> (<i>T. ascendens</i> , <i>T. distichum</i> , <i>T. mucronatum</i>)	Cypress (Pond, Bald, Monarch, Montezuma)	F
<i>Taxus species</i> (<i>T. baccata</i> , <i>T. brevifolia</i> , <i>T. cuspidata</i>)	Yew (English, Western, Japanese)	F
<i>Thuja species</i> (<i>T. occidentalis</i> , <i>T. plicata</i>)	Arborvitae/Red Cedar	F
<i>Tsuga species</i> (<i>T. heterophylla</i> , <i>T. mertensiana</i>)	Hemlock (Western, Mountain)	F
Groundcovers, Shrubs, and Vines		
<i>Acacia species</i>	Acacia	F, I

Table 4.17-2. Prohibited Plant List

Botanical Name	Common Name	Comment*
<i>Adenostoma fasciculatum</i>	Chamise	F
<i>Adenostoma sparsifolium</i>	Red Shanks	F
<i>Agropyron repens</i>	Quackgrass	F, I
<i>Anthemis cotula</i>	Mayweed	F, I
<i>Arbutus menziesii</i>	Madrone	F
<i>Arctostaphylos species</i>	Manzanita	F
<i>Arundo donax</i>	Giant Reed	F, I
<i>Artemisia species (A. abrotanium, A. absinthium, A. californica, A. caucasica, A. dracunculus, A. tridentata, A. pycnocephala)</i>	Sagebrush (Southernwood, Wormwood, California, Silver, True tarragon, Big, Sandhill)	F
<i>Atriplex species (numerous)</i>	Saltbush	F, I
<i>Avena fatua</i>	Wild Oat	F
<i>Baccharis pilularis</i>	Coyote Bush	F
<i>Bambusa species</i>	Bamboo	F, I
<i>Bougainvillea species</i>	Bougainvillea	F, I
<i>Brassica species (B. campestris, B. nigra, B. rapa)</i>	Mustard (Field, Black, Yellow)	F, I
<i>Bromus rubens</i>	Foxtail, Red brome	F, I
<i>Castanopsis chrysophylla</i>	Giant Chinquapin	F
<i>Cardaria draba</i>	Hoary Cress	I
<i>Carpobrotus species</i>	Ice Plant, Hottentot Fig	I
<i>Cirsium vulgare</i>	Wild Artichoke	F, I
<i>Conyza bonariensis</i>	Horseweed	F
<i>Coprosma pumila</i>	Prostrate Coprosma	F
<i>Cortaderia selloana</i>	Pampas Grass	F, I
<i>Cytisus scoparius</i>	Scotch Broom	F, I
<i>Dodonaea viscosa</i>	Hopseed Bush	F
<i>Eriodictyon californicum</i>	Yerba Santa	F
<i>Eriogonum species (E. fasciculatum)</i>	Buckwheat (California)	F
<i>Fremontodendron species</i>	Flannel Bush	F
<i>Hedera species (H. canariensis, H. helix)</i>	Ivy (Algerian, English)	I
<i>Heterotheca grandiflora</i>	Telegraph Plant	F
<i>Hordeum leporinum</i>	Wild barley	F, I
<i>Juniperus species</i>	Juniper	F
<i>Lactuca serriola</i>	Prickly Lettuce	I
<i>Larix species (numerous)</i>	Larch	F
<i>Larrea tridentata</i>	Creosote bush	F
<i>Lolium multiflorum</i>	Ryegrass	F, I
<i>Lonicera japonica</i>	Japanese Honeysuckle	F
<i>Mahonia species</i>	Mahonia	F
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower	F
<i>Miscanthus species</i>	Eulalie Grass	F
<i>Muhlenbergia species</i>	Deer Grass	F

Table 4.17-2. Prohibited Plant List

Botanical Name	Common Name	Comment*
<i>Nicotiana species (N. bigelovii, N. glauca)</i>	Tobacco (Indian, Tree)	F, I
<i>Pennisetum setaceum</i>	Fountain Grass	F, I
<i>Perovskia atriplicifolia</i>	Russian Sage	F
<i>Phoradendron species</i>	Mistletoe	F
<i>Pickeringia montana</i>	Chaparral Pea	F
<i>Rhus (R. diversiloba, R. laurina, R. lentii)</i>	Sumac (Poison oak, Laurel, Pink Flowering)	F
<i>Ricinus communis</i>	Castor Bean	F, I
<i>Rhus Lentii</i>	Pink Flowering Sumac	F
<i>Rosmarinus species</i>	Rosemary	F
<i>Salvia species (numerous)</i>	Sage	F, I
<i>Salsola australis</i>	Russian Thistle	F, I
<i>Solanum Xantii</i>	Purple Nightshade (toxic)	I
<i>Silybum marianum</i>	Milk Thistle	F, I
<i>Thuja species</i>	Arborvitae	F
<i>Urtica urens</i>	Burning Nettle	F
<i>Vinca major</i>	Periwinkle	I

* F = flammable, I = Invasive

Notes:

- Plants on this list that are considered invasive are a partial list of commonly found plants. There are many other plants considered invasive that should not be planted in a fuel modification zone and they can be found on The California Invasive Plant Council's Website www.cal-ipc.org/ip/inventory/index.php. Other plants not considered invasive at this time may be determined to be invasive after further study.
- For the purpose of using this list as a guide in selecting plant material, it is stipulated that all plant material will burn under various conditions.
- The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistant.
- All vegetation used in Fuel Modification Zones and elsewhere in this development shall be subject to approval of the Fire Marshal.
- Landscape architects may submit proposals for use of certain vegetation on a project specific basis. They shall also submit justifications as to the fire resistivity of the proposed vegetation.

MM-WF-3 Crowns of mature trees, with the exception of oak trees, located within defensible space shall be maintained with a minimum horizontal clearance of 10 feet for fire resistant trees and 30 feet for non-fire resistant trees. Mature trees shall be pruned to remove limbs to maintain a vertical separation of three times the height of the lower vegetation or 6 feet, whichever is less, above the ground surface adjacent to the trees. Dead wood and litter shall be regularly removed from trees. Ornamental trees shall be limited to groupings of 2-3 trees with canopies for each grouping separated horizontally as described in Table 4.17-3 below (City of Murrieta Municipal Code, Chapter 15.24.290, Section 4907).

Table 4.17-3. Required Distance between Tree Canopies

Percent of Slope	Required Distances Between Edge of Mature Tree Canopies ¹
0 to 20	10 feet
21 to 40	20 feet
41 plus	30 feet

¹ Determined from canopy dimensions as described in Sunset Western Garden Book (current edition)

MM-WF-4 Until such a time that the property to the west is developed and the wildfire hazard is mitigated, a 20-foot on-site Costco building setback and the 40-foot wide Antelope Road make up a 60-foot “No Build Easement” on the western side of the Costco development, which shall be used as an interim fuel modification zone. Once construction of the proposed development to the west begins, it will augment the need for off-site fuel modification zones.

4.17.6 Level of Significance After Mitigation

With implementation of **MM-WF-1**, **MM-WF-2**, **MM-WF-3**, and **MM-WF-4**, project impacts related to wildfire would be less than significant.

4.17.7 Cumulative Impacts

As previously discussed, the project site is located within a Very High FHSZ. The nearby related projects that should be considered in terms of cumulative wildfire impacts include the related projects adjacent to the project site that are also located within the Very High FHSZ. These projects include Vineyard I, directly south of the project site, and Vineyard III, directly west of the project site. The proposed project, in combination with these nearby related projects that are immediately south and west of the project site, would convert vacant land within a Very High FHSZ to a developed condition, thereby reducing the available fuels should a wildfire occur. Related projects would also be subject to the regulations listed in Section 4.17.2 that govern construction practices, the use of construction equipment in fire-prone areas, building materials, and more. It is assumed that the related projects would incorporate fire safety measures consistent with the regulatory requirements into their project design, such as ignition-resistant building materials, fire sprinklers, emergency access, fire alarms, defensible space, and FMZs. Compliance with these regulations would mitigate potential wildland fire risks on a project-by-project basis, thereby preempting cumulative effects.

The project area is relatively flat, and it is not anticipated that related projects would combine to result in significant wildfire impacts related to slope, prevailing winds, downstream flooding or landslide, slope instability, or drainage changes. Further, all related projects would be required to avoid conflict with the City’s EOP and any emergency evacuation routes in the area.

The combination of related projects in the project area could result in increased calls to the MFR. As discussed in Section 4.11, the MFR has identified a need for a sixth fire station in the eastern portion of the City as a result of increasing development in the area. As shown in Exhibit 12-9 of the City’s General Plan, the project site would not be within the proposed service area of the sixth fire station, and would not be directly served by the new station unless other resources are not available to respond first. However, the addition of a sixth station could alleviate some calls to Station No. 4 and result in improved response times for Station No. 4.

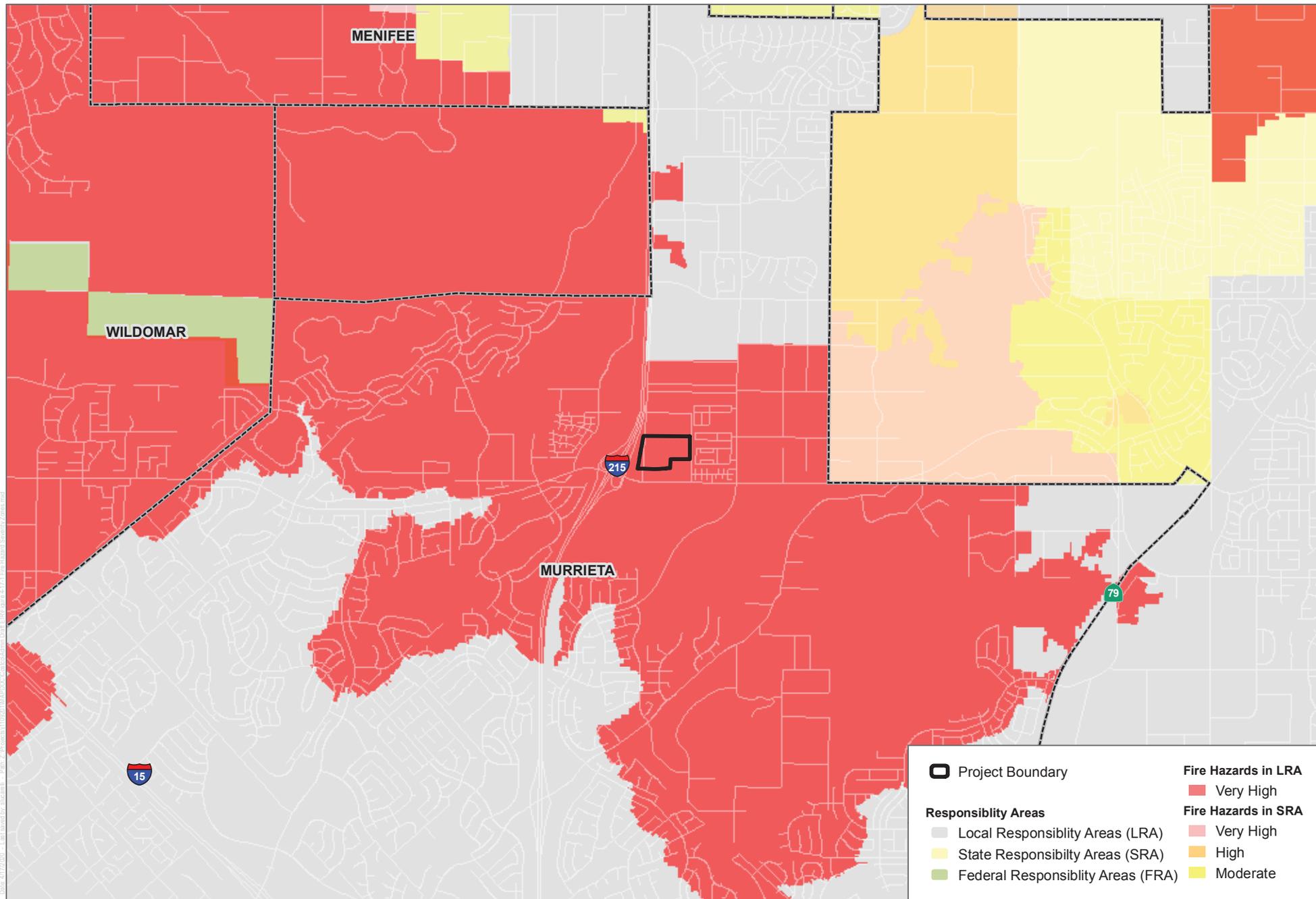
New development would be required to pay its fair-share of the City’s DIF, a portion of which covers costs associated with the provision of firefighting resources and related staffing, including the construction of fire department facilities. Further, the MFR participates in the California Master Mutual Aid Agreement. In the event of a major fire, outside resources can be brought into the City as needed (City of Murrieta 2011a). As such, the project would not result in cumulatively considerable impacts related to wildfire, and cumulative impacts would be less than significant.

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SOURCE: CAL Fire 2019

DUDEK



FIGURE 4.17-1

Fire Hazard Severity Zones

Costco/Vineyard II Retail Development Project, City of Murrieta, California

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5 Other CEQA Considerations

Consistent with California Environmental Quality Act (CEQA) Guidelines Section 15126.2, this section summarizes the findings with respect to the growth-inducing effects, significant irreversible environmental changes, cumulative impacts (when considered with other projects), significant unavoidable environmental impacts, and effects found to be less than significant of the proposed Costco/Vineyard II Development Project (project).

5.1 Growth Inducement and Indirect Impacts

The CEQA Guidelines require that an Environmental Impact Report (EIR) evaluate the growth-inducing impacts of a proposed action (Section 15126.2[d]). A growth-inducing impact is defined by the CEQA Guidelines as follows:

[T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth.... It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involved construction of new housing. A project can have indirect growth inducement potential if it would establish substantial unplanned new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises), or if it would involve a substantial construction effort with substantial short-term employment opportunities or long-term employment opportunities that indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. Increases in population could strain existing community service facilities, requiring construction of new facilities that could cause significant environmental impacts.

The proposed project would involve construction of a new commercial retail development, including a Costco Wholesale (Costco) warehouse and fuel station, a fitness center, a major retail pad, four smaller retail shops, one restaurant, and one drive-through fast-food restaurant. Commercial development may induce growth indirectly if it would attract significant numbers of new employees to the area, creating a demand for additional housing. The proposed project would employ 285 employees, which conservatively has been analyzed as new residents to Murrieta (although they may already reside in Murrieta or may travel from other locations to work at the project). The project is not likely to induce substantial indirect population growth within the Murrieta area (see Section 4.10, Population and Housing, for further details).

As of 2017, the majority of residents commute outside of the City of Murrieta (City) for employment, with only 15.3% of residents employed within City limits (SCAG 2019). As such, although this EIR conservatively assumes that all employees of the project would relocate to the City as new residents (see Section 4.10, Population and Housing), in reality it is likely that at least some of the jobs created during construction and operation of the project would be filled by area residents. Nonetheless, if the results of the conservative analysis conducted are realized, and all new jobs are filled by new residents to the City, the resulting growth would not be substantial or unplanned. As discussed in Section 4.10, the increase in population, employment, and housing that could result from the project would be consistent with the growth projections for the City, as projected by the Southern California Association of Governments and the City. Further, as described in the urban decay analysis in Section 5.4.1, the project is

anticipated to address existing retail sales leakage. Retail sales are currently leaking outside of the market area, indicating a shortage in commercial services in the City. Therefore, the project would primarily serve existing demand for commercial services, rather than creating new demand for housing and services.

The project would involve construction of Warm Springs Road from the southern boundary of the project site to the northern site boundary, as well as stormwater, water, and utilities infrastructure to serve the proposed project. This infrastructure would specifically serve the project and would not result in the removal of obstacles to population growth. Other than these connections, the project would be served by existing infrastructure and utilities. Consistent with the City's General Plan, Warm Springs Parkway could be further developed in the future to extend north of the project site; there is also potential for additional commercial development. As indicated on multiple exhibits in the Circulation Element of the City's General Plan (see Exhibits 5-1, 5-3, 5-4), the proposed location and potential extension of Warm Springs Parkway is a planned future roadway alignment. Further, as shown in Exhibit 3-5 of the City's General Plan, the area north of the project site has a land use designation of commercial. Therefore, construction of the proposed section of Warm Springs Parkway would not result in unplanned growth or remove obstacles to unplanned growth, as the potential future extension of the road and addition of commercial development north of the project site are planned for in the City's General Plan.

5.2 Significant and Unavoidable Environmental Impacts

This section was prepared in accordance with Section 15126.2(c) of the CEQA Guidelines, which requires the discussion of any significant impacts upon the environment that cannot be avoided if a project is implemented. These include impacts that can be mitigated but cannot be reduced to a less-than-significant level. An analysis of environmental impacts caused by the proposed project has been conducted and is contained in this EIR. In Chapter 4, Environmental Analysis, 17 issue areas were analyzed in detail. Table 1-1 in Chapter 1, Executive Summary, summarizes the project's impacts, mitigation measures, and levels of significance before and after mitigation. According to the analysis presented in Chapter 4, the proposed project would result in significant unavoidable adverse impacts related to air quality and traffic and circulation, as summarized below.

Air Quality

As discussed in Section 4.2, Air Quality, and shown in Table 4.2-6, daily construction emissions would not exceed the South Coast Air Quality Management District (SCAQMD) significance thresholds for volatile organic compounds (VOC), carbon monoxide (CO), sulfur oxide (SO_x), particulate matter less than 10 microns in diameter (PM₁₀), or particulate matter less than 2.5 microns in diameter (PM_{2.5}) during construction in all construction years. However, the daily construction emissions would exceed the SCAQMD significance thresholds for oxides of nitrogen (NO_x) in 2020 and 2021. Additionally, as shown in Table 4.2-7, the combined daily area, energy, and mobile source emissions would not exceed the SCAQMD operational thresholds for CO, SO_x, PM₁₀, and PM_{2.5}. However, the project-generated emissions would exceed the SCAQMD operational threshold for VOC and NO_x. Additionally, based on the project-generated construction and operational emissions of NO_x and operational emissions of VOC, the project would result in a cumulatively considerable increase in emissions of nonattainment pollutants. Further, because construction and operation of the project could result in exceedances of the SCAQMD significance thresholds for NO_x, the potential health effects associated with criteria air pollutants, specifically ozone (O₃), are considered potentially significant. Implementation of all feasible mitigation measures would reduce, but not eliminate, these impacts.

As presented in Table 4.2-12, construction emissions would be reduced to below the SCAQMD's thresholds with implementation of **Mitigation Measure (MM) AQ-1**, which requires the use of California Air Resources Board-certified

Tier 4 Final engines. However, the project would exceed significance thresholds of VOC and NO_x during operation even with implementation of **MM-AQ-2**, which requires the provision of preferential parking for electric vehicles, compressed natural gas vehicles, and carpool/vanpool rideshare vehicles, as well as temporary transit subsidies for project employees. Because strategies such as **MM-AQ-2** cannot be quantified due to uncertainty of quantified reductions from usage, the impact related to the project's potential to conflict with or obstruct implementation of the SCAQMD 2016 Air Quality Management Plan would remain significant and unavoidable.

Construction activities would generate emissions in excess of site-specific Localized Significance Thresholds (see Table 4.2-8). Implementation of **MM-AQ-1** would reduce project construction-generated criteria air pollutant emissions to the extent feasible. The emission results after incorporation of **MM-AQ-1** are presented in Table 4.2-13. As shown in Table 4.2-13, maximum daily on-site emissions of PM₁₀ and PM_{2.5} would exceed the Localized Significance Threshold; therefore, impacts related to Localized Significance Thresholds would remain significant and unavoidable.

As shown in Table 4.2-10, the construction health risk assessment results from the unmitigated scenario show cancer risks from project construction exceeding the 10 in 1 million threshold. Implementation of **MM-AQ-1** would reduce construction-generated diesel particulate matter emissions to the extent feasible, as presented in Table 4.2-14. Impacts after mitigation would be less than significant.

While implementation of **MM-AQ-1** would reduce NO_x emissions from project construction below the SCAQMD threshold, thereby reducing the project's potential to result in health effects associated with O₃ and NO_x during project construction, the potential for the project to contribute to regional health effects associated with O₃, VOC, and NO_x during project operation would remain significant and unavoidable (see Table 4.2-12) because **MM-AQ-2** cannot be quantified.

The major contributors to maximum operational daily emissions of VOC and NO_x are gasoline dispensing and mobile source emissions. Due to the size and type of the project, it is not feasible to implement mitigation measures to reduce the gasoline dispensing and mobile source emissions. Further, because strategies such as implementation of **MM-AQ-2** cannot be quantified, cumulative operational emissions would also remain significant and unavoidable.

Transportation and Traffic

As discussed in Section 4.13, the following intersections are projected to operate at an unacceptable LOS under 2021 Cumulative Conditions:

- Salida del Sol and Clinton Keith Road (intersection operates at LOS E or F under existing conditions; intersection outside of the City's jurisdiction)
- Elizabeth Lane and Clinton Keith Road (intersection operates at LOS E or F under existing conditions; intersection outside of the City's jurisdiction)
- California Oaks Road and Clinton Keith Road
- Bronco Way and Clinton Keith Road
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road
- Creighton Avenue and Clinton Keith Road (with Creighton access)
- Whitewood Road and Clinton Keith Road
- Max Gillis Boulevard/Briggs Road and Leon Road (intersection outside of the City's jurisdiction)
- Max Gillis Boulevard/Thompson Road and State Route 79 (intersection operates at LOS E or F under existing conditions; intersection outside of the City's jurisdiction)

Three of these intersections operate at an LOS E or F under existing conditions: Salida del Sol and Clinton Keith Road, Elizabeth Lane and Clinton Keith Road, and Max Gillis Boulevard/Thompson Road and State Route 79. Further, the following intersections are located outside of the City's jurisdiction: Salida Del Sol and Clinton Keith Road, Elizabeth Lane and Clinton Keith Road, Max Gills Boulevard/Briggs Road and Leon Road, and Max Gillis Boulevard/Thompson Road and State Route 79 (which is partially in the City). At one of these intersections, Bronco Way and Clinton Keith Road, the impact is resolved with signal timing and coordination. In addition, under 2035 Build-Out Conditions, all intersections analyzed along Warm Springs Parkway and at the I-215 interchange are projected to operate an acceptable LOS with the planned roadway improvements, including lane configurations and traffic control devices.

In the interim, mitigation measures (**MM-TRAF-6** through **MM-TRAF-12**) have been proposed in the form of fair-share payments toward roadway improvements that would help to reduce impacts. With respect to intersections with significant impacts, since implementation of some of the mitigation measures is outside of the lead agency's jurisdiction or implementation of the roadway improvements cannot be guaranteed by project opening or project build-out, the impacts would be cumulatively considerable and would remain significant and unavoidable even with implementation of mitigation measures.

Queuing

Based on the queuing analysis in Section 4.13, with Creighton Avenue access the following movements are projected to have significant queuing impacts under 2021 Cumulative Conditions:

- Nutmeg Street and Clinton Keith Road (westbound left turn [WBL], southbound left turn [SBL])
- California Oaks Road and Clinton Keith Road (WBL)
- Greer Road/Murrieta Oaks Avenue and Clinton Keith Road (WBL)
- Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road (eastbound left turn [EBL], WBL)
- I-215 SB Ramps and Clinton Keith Road (eastbound right turn)
- Creighton Avenue and Clinton Keith Road (EBL)
- High School West Driveway/Warm Springs Parkway and Clinton Keith Road (EBL)
- Bronco Way and Clinton Keith Road (EBL)
- Whitewood Road and Clinton Keith Road (EBL, northbound left turn [NBL], SBL)
- Whitewood Road and Baxter Road (NBL)

Without Creighton Avenue access, the following additional movements are projected to have significant queuing impacts under 2021 Cumulative Conditions:

- Creighton Avenue and Clinton Keith Road (EBL/U-turn)
- High School West Driveway/Warm Springs Parkway and Clinton Keith Road (EBL)

Mitigation measures (**MM-TRAF-6** through **MM-TRAF-12**) have been proposed in the form of fair-share payments toward roadway improvements that would help to reduce cumulative queuing impacts. However, as discussed above, since implementation of some of the mitigation cannot be guaranteed by project opening or project build-out, certain impacts would be cumulatively considerable and would remain significant and unavoidable even with implementation of mitigation measures.

5.3 Significant Irreversible Environmental Impacts

Section 15126.2(d) of the CEQA Guidelines requires that an EIR analyze the extent to which a project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations will not be able to reverse. Nonrenewable resources that would be used on site during construction and operation include natural gas, other fossil fuels, water, concrete, steel, and lumber. The proposed project would result in the commitment of such resources. (The proposed project's energy consumption is discussed in greater detail in Section 4.16, Energy.)

Uses of nonrenewable resources during the initial and continued phases of the proposed project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts, and particularly, secondary impacts (such as a highway that provides increased access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a project.

Implementation of the proposed project would occur on vacant land in the City of Murrieta. Proposed development would include the irreversible commitment of natural resources, energy, and human resources. Implementation of the proposed project would increase the intensity of the site compared to existing conditions. Ongoing maintenance and operation of the proposed project would entail a further irreversible commitment of energy resources in the form of petroleum products (diesel fuel and gasoline), natural gas, and electricity. The proposed project has incorporated voluntary sustainable design factors, as described in Chapter 3, Project Description. As such, the proposed project is not anticipated to consume substantial amounts of energy in a wasteful manner (see Section 4.15, Utilities and Service Systems, and Section 4.16, Energy, for details), and it would not result in significant impacts from consumption of utilities. However, long-term impacts would result from an increase in vehicular traffic and associated air quality impacts.

5.4 Effects Found Not to Be Significant

Section 15128 of the CEQA Guidelines requires a statement that briefly indicates the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. As stated in the CEQA Guidelines, such a statement may be contained in an attached copy of an Initial Study. The Initial Study for the proposed project is included in this EIR as Appendix A. As described and substantiated in Appendix A, the following issue areas were not found to be significant and were not further analyzed in the EIR: agriculture and forestry resources and mineral resources. The project site does not contain any agriculture, forestry resources, or mineral resources as defined by the State Mining and Reclamation Act or the City of Murrieta's General Plan.

Additionally, impacts to land use and planning were discussed in the Initial Study (Appendix A). The Initial Study determined that the project would not physically divide an established community, nor would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. The Initial Study did, however, conclude that the project could potentially conflict with an applicable habitat conservation plan or natural community conservation plan, and stated that the Draft EIR would analyze these potential impacts. However, in December 2018, the California Natural Resources Agency adopted final text to a comprehensive update to the CEQA Guidelines (2018 Update). The update moved the

discussion pertaining to habitat conservation plans and natural community conservation plans to the biological resources section. Additionally, the 2018 Update included modifications to the land use planning threshold regarding conflicts with an applicable land use plan, policy, or regulation. Nonetheless, with regard to the conflicts with an applicable land use plan, policy, or regulation, the proposed project would not cause a significant environmental impact due to a conflict with an applicable plan, policy, or regulation, since the project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. Furthermore, because the analysis of the project's consistency with habitat conservation plans and natural community conservation plans is discussed in the biological resources section of this EIR, impacts to land use and planning will not be discussed in further detail.

Additional CEQA checklist thresholds that were screened out for other environmental resource areas are described in the Initial Study and are also identified in each resource section. A discussion and analysis of the project's impacts on urban decay in the region is provided below.

5.4.1 Urban Decay

5.4.1.1 Introduction

This section analyzes the potential of the proposed project to result in urban decay impacts. The analysis and findings presented in this section are based on the information contained in the Costco/Vineyard II Center Urban Decay Analysis (Urban Decay Analysis) completed in January 2020 by HR&A Advisors Inc., and included in this EIR as Appendix L. The Urban Decay Analysis evaluates the potential economic impacts of the proposed Costco and Vineyard II retail development and the extent to which the project has the potential to trigger the necessary chain of events that can lead to urban decay. Urban decay has been defined as physical deterioration to properties or structures so prevalent, substantial, and lasting for a significant period of time that it impairs the proper utilization of the properties and structures or the health, safety, and welfare of the surrounding community. Additionally, cumulative impacts associated with other planned and proposed retail projects in the trade area are also considered.

The analysis examines retail supply and demand during three years: 2018, 2020, and 2023. The 2018 estimates characterize the existing retail market. Projections were developed for the year 2023 to estimate market impacts at the point of stabilized occupancy and sales for the project. Projections for 2023 account for projected population growth and changes in retail supply resulting from the construction of currently proposed commercial development in addition to the project. According to the CEQA Guidelines (Section 15358[b]), impacts to be analyzed in an EIR must be "related to physical changes" in the environment. Although the CEQA Guidelines (Section 15131[a]) do not directly require an analysis of a project's social or economic effects because such impacts are not in and of themselves considered significant effects on the environment, the CEQA Guidelines also state the following:

An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes caused in turn by economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

The CEQA Guidelines also provide that physical effects on the environment related to changes in land use, population, and growth rate induced by a project may be indirect or secondary impacts of the project and should be analyzed in an EIR if the physical effects would be significant (see CEQA Guidelines Section 15358[a][2]).

The State of California Fifth District Court of Appeal ruled that CEQA can require analysis of physical urban decay or deterioration resulting from the development of new shopping centers (*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal. App. 4th 1184).¹ The Appeals Court also ruled that the cumulative impact analysis for the proposed shopping centers should consider all other past, present, and reasonably foreseeable future retail projects within the project’s market area.

Urban decay is a physical effect that can result from extended vacancy, deferred maintenance, and abandonment. CEQA describes the role of urban decay in determining the significance of environmental effects caused by a project in Article 5, Section 15064(e):

Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.

Like most CEQA requirements, this standard is focused on impacts to the physical environment, and, as such, it requires the consideration of conditions of disinvestment that could result in the decay of real property as a result of the defined project.²

Project Land Use

The project site is currently a vacant lot located on Clinton Keith Road, east of Interstate (I) 215 in the City. The project consists of an approximately 153,362-square-foot Costco Wholesale warehouse and a Costco gas station with 32 fueling positions and an approximately 72,000-square-foot shopping center consisting of a health and beauty retailer, a pet supply store, a fitness center, restaurants, and miscellaneous small retailers. Table 5-1 provides a summary of the anticipated project elements. The project is anticipated to be completed in 2021 and is anticipated to be completed in one construction phase. The project site is designated as commercial land use according to the City’s 2035 General Plan and is zoned for regional commercial. The project site is bordered by Antelope Road to the west, existing residential development to the east, Vista Murrieta High School and a multi-family residential development to the south, and vacant land to the north.

Table 5-1. Estimated Land Use Plan for Project

Land Use	Square Feet
<i>Regional Retail - Costco</i>	
Costco Warehouse and Gas Station	153,362 sf
<i>Community Retail – Vineyard II</i>	
Health and Beauty Retail	11,900 sf

¹ In using the term “urban decay,” the Appeals Court specifically noted that “urban decay” is distinct from “urban blight,” which, per the California Health & Safety Code (Sections 33030 to 33039) definition, is not applicable to this project.
² These conditions are distinct from conditions of blight, which are defined by the California Health & Safety Code (Sections 33030–33039) and set the standards for the adoption of redevelopment project areas.

Table 5-1. Estimated Land Use Plan for Project

Land Use	Square Feet
Pet Supplies	16,000 sf
Fitness Center	37,000 sf
Miscellaneous Small Retail	3,500 sf
Casual Dining	1,200 sf
Fast Food	2,400 sf
Total Development	225,362 sf

Source: Appendix L.

Note: sf = square feet.

5.4.1.2 Environmental Setting

Project Market Area

Market areas, or trade areas, have been defined in the Urban Decay Analysis (Appendix L) for the purpose of analyzing the prospective economic impacts of the project. The surrounding Primary Market Area (PMA) and Secondary Market Area (SMA) draw on a range of factors, such as the location of competitive supply, prevailing commute patterns in the region, and physical barriers. According to the International Council of Shopping Centers (ICSC), in general, the trade area should reflect the geography from which 75%–90% of retail sales are generated. Additionally, different stores can have different trade areas based on their individual drawing power and the competitive market context. The delineation of trade areas is more complex than in the past as a result of the proliferation in the variety and volume of shopping centers already present in most trade areas, as well as the variety of consumer markets. Consistent with industry definitions of shopping center market areas, the combined PMA/SMA for the project represents the geographic area in which 90% of the shopping center’s repeat customers reside.

I-215 serves as a “feeder” for prospective customers traveling south toward the City. The boundaries of the PMA and SMA are defined in Figure 5-1, Primary and Secondary Market Area Map. This map also highlights the locations of other membership discount retail warehouse stores in the area, which are located in Temecula, Murrieta, and Lake Elsinore. It is assumed that the Costco anchor of the project will be the primary draw for customers located outside the City, since the other retail stores would be more local serving in nature.

The majority of the PMA includes areas within an approximately 15-minute or less drive time from the project site. This area has a current population of approximately 318,260 residents. The majority of the SMA includes areas within an approximately 15 to 20 minute drive time from the project site; communities outside the 20-minute drive time, such as Hemet and its neighbors, were included in the SMA because these communities are somewhat isolated and have limited access to retail destinations. The SMA (exclusive of the PMA) comprises an area with approximately 488,600 residents and includes communities outside the bounds of the PMA stretching as far as Hemet, East Hemet, and Valle Vista. The PMA and SMA were defined in consideration of the existing Costco locations to the south and north of the project site. The project is not expected to generate significant sales from residents of Lake Elsinore or Temecula. However, Costco stores draw from a regional trade area, and the proposed project would likely realize some cross-shopping from those members presently frequenting the existing Temecula, Lake Elsinore, and Moreno Valley warehouses.

Market Area Sales

It is estimated that PMA and SMA residents would generate 90% of the project's sales. By assuming that PMA and SMA residents would compose 90% of the project's sales, this analysis is consistent with the ICSC guidelines and is, in fact, at the conservative end of the 75%–90% range cited by ICSC for a retail trade area. It is assumed that residents coming from tertiary markets would generate the remaining 10% of sales. This tertiary market is likely to come from highway travelers passing through Murrieta on I-215 and from shoppers on pass-by trips.

Population and Household Income

The population in the PMA was approximately 318,263 in 2018, and is estimated to increase to 347,047 in 2023. The population of the combined PMA and SMA was approximately 806,898 in 2018 and is expected to increase to 870,320 by 2023.

Average per-capita income in the PMA is currently \$31,360 and is anticipated to increase to \$33,201 by 2023. Within the SMA, per-capita income currently averages \$26,831 and is expected to grow to \$31,616 by 2023.

Current Retail Market Conditions

According to recent retail broker reports for the Inland Empire, the Riverside/San Bernardino metro area represents California's fastest-growing economy, with 260,000 jobs added over the past 5 years. This employment growth has supported the addition of nearly 200,000 residents during the same period, boosting local demand for housing and conveniently located shopping centers. In response, retailers have been increasingly present in the area, and consumer spending continues to escalate. Grocers and personal-service-related companies (namely, fitness centers and smaller gyms) have been notably active of late, occupying roughly 1 million square feet of combined space in 2017. Overall, at least 70% of current new retail space is pre-leased, heightening retailer demand for existing space. This strong pre-leasing activity and stable tenant demand nearly negates the impact of recent heightened construction, since vacancy increases overall have been modest.

Within the area roughly analogous to the combined PMA and SMA, overall retail vacancies stand at 6.4% as of the end of the first quarter of 2018. Over the past four quarters, the vacancy rate in the market has remained relatively steady, with the rate going from 6.4% at the end of the second and third quarters of 2017, to 6.2% at the end of the fourth quarter of 2017, and 6.4% at the end of the first quarter of 2018.

Existing Shopping Centers in the Project Market Area

Grocery, clothing, and general merchandise sales would constitute more than 70% of the projected sales by the project. Grocery-store-anchored shopping centers and centers with significant general merchandise- and apparel-oriented retailers are considered to be competitive with the project.

A total of 26 neighborhood centers, 9 community centers, and 3 power centers are located within 5 miles of the project site. Neighborhood centers are local serving, meaning that the trade areas for these centers are residential neighborhoods within a 5- to 10-minute drive. Community shopping centers have larger trade areas than neighborhood centers, with customers typically traveling 10 to 15 minutes to go to this type of center.

Of the 26 neighborhood centers, seven are anchored by a grocery store and one is anchored by a general merchandise store (Dollar Tree). Overall vacancy for this group is 8.1%; however, of the 26 centers, eight shopping centers currently are experiencing vacancies between 11% and 32.5%. The most potentially vulnerable center of

this group is the Town Center Plaza, located in Murrieta at Jefferson Avenue and Juniper Street. It is a non-anchored neighborhood center located 3.6 miles from the project site. The Town Center Plaza center currently has 14,350 square feet of vacant space for an overall vacancy rate of just under 32.5%.

Community shopping centers located within 5 miles of the project site range from 84,000 square feet to 360,000 square feet. Of the nine community shopping centers, five are anchored by a grocery store and three stores have significant general merchandise retailers. Overall vacancy for this group is 6.6%; however, two shopping centers currently are experiencing vacancies greater than 15%.

The three power centers within 5 miles of the project site range in size from 230,000 to 325,000 square feet. Two centers have large home improvement stores, and two centers have general merchandise retailers. There are no vacant spaces within this group.

There are two community centers located near the project site currently experiencing significant vacancies. The Murrieta Town Center, located at the northwest corner of Alta Murrieta Drive and Murrieta Hot Springs Road in Murrieta is currently experiencing a 24% vacancy. This center, located within 3 miles of the project site, is anchored by Marshalls, Burlington Stores, Ross Dress for Less, Dollar Tree, and Rite Aid. Apparel anchors constitute nearly one-third of the total space of this center. The other community center with significant vacancy in this area, the Murrieta Spectrum, does not have any stores that are oriented to product lines that would be in direct competition with stores proposed for the project site.

The remaining portion of the PMA constitutes an area that is between 5 and 8 miles from the project site. The neighborhood centers in this distance range are located too far from the project site to be negatively impacted by the project. However, the two existing community shopping centers and one power center located in this area may find themselves in direct competition with the proposed Costco store due to the large trade areas that Costco stores pull from. The two community centers have an overall vacancy of 2.6%, while the power center has a vacancy rate under 1%. With low vacancy rates, these centers are not particularly vulnerable to increased competition.

Shopping centers in the SMA, which are generally more than 8 miles from the project site, are too far away from the Costco/Vineyard II project to be negatively impacted.

Primary Competitors

Costco would be the main sales generator for the project. Projected sales at the Costco are anticipated to account for 92% of total project sales. Thus, the PMA/SMA are largely determined by the Costco store.

In California, Costco's primary competitors are Wal-Mart Stores Inc. and Target Corporation. Within this group, Costco and Walmart's Sam's Club stores most closely resemble each other and directly compete for customers. All of these stores have at least a partial grocery store component and the Walmart Supercenter stores include a full grocery store selection. Other grocery stores in the area that are not part of a larger general merchandise store would experience some competitive pressure from Costco as well. However, Costco generally sells no more than 5,000 products at any given time, and because of that limited variety, customers would continue to require smaller stores with a wider variety. This helps to insulate freestanding grocery outlets such as Ralphs, Vons, and Stater Brothers.

As shown in Figure 5-2, Location of Primary and Secondary Competitive Supply, the highest concentration of retail development within the extended PMA and SMA are located within the Cities of Temecula, Murrieta, Lake Elsinore, Menifee, and Hemet. Existing Costco locations in Temecula and Lake Elsinore, and the existing Sam's Club store

located in Murrieta, are considered to be the primary competitive locations for the new Costco store, and Target and Walmart stores are considered secondary competitors. The following stores are considered to be in direct competition with the project:

Costco

- A 148,000-square-foot Costco in Temecula, located just south of the Promenade Temecula shopping center. This store is located in the SMA.
- A 146,000-square-foot Costco in Lake Elsinore, located in a community shopping center at Dexter and Central Avenue. This store is located in the SMA.

Sam's Club

- A 130,000-square-foot Sam's Club in Murrieta, located in the Murrieta Plaza shopping center at the intersection of I-215 and Murrieta Hot Springs. This store is located in the PMA.

Walmart and Walmart Supercenter

- A 141,000-square-foot Walmart located in Murrieta alongside I-215 at Murrieta Hot Springs Road. This store is located in the PMA.
- Two Walmart Supercenters located in Hemet; a 220,000-square-foot store in the Page Plaza shopping center and a 200,000-square-foot store located in the Mount San Jacinto Plaza. These stores are located in the SMA.
- A 185,000-square-foot Walmart Supercenter located in Perris at El Nuevo Road and North Perris Boulevard. This store is located in the SMA.

Target

- Two Target stores, both located in Murrieta:
 - A 162,000-square-foot store located in the Orchard at Stone Creek center, 0.5 miles from the project site. This store is located in the PMA.
 - A 125,000-square-foot store located in the Cal Oaks Plaza, approximately 2.95 mile southwest of the project site. This store is located in the PMA.
- A 178,000-square-foot Target located in Menifee at the Countryside Marketplace community center. This store is located in the SMA.
- A 122,000-square-foot Target located in Hemet at the Hemet Valley Center. This store is located in the SMA.

5.4.1.3 Impacts Analysis

Significance Criteria

For the purposes of this EIR, implementation of the proposed project would have a significant effect related to urban decay if it would:

Create multiple long-term store vacancies or result in the abandonment of multiple buildings within the retail market served by the proposed project, which results in the physical deterioration of

properties or structures that impairs the proper utilization of the properties or structures, or the health, safety, and welfare of the surrounding community.

In accordance with the CEQA Guidelines, a project's economic impacts on a community are only considered significant if they lead to adverse physical changes in the environment.

Projected Sales for Project

To determine the annual sales performance of the proposed Costco/Vineyard II Retail Development, assumptions were made based on information available in either individual store 10-K reports filed with the Securities and Exchange Commission or the e-Marketer Retail database dated January 2018. The 10-K reports typically include total store square footage and total sales; spreading the sales across the square footage results in national average sales per square foot performance. The e-Marketer Retail publication provides average sales per square foot figures for many national retailers and aggregates the data by specific retail categories. The combined Costco/Vineyard II Retail Development comprises approximately 224,650 square feet of retail space. While not all retailers for the project have been identified, a Costco Warehouse store has been identified as the proposed anchor tenant, and targeted retail categories for most of the spaces have been identified. For the unknown retail space, a generally accepted industry standard average sales per square foot has been assumed.

It is anticipated that the project would be built in one phase with completion estimated for 2021. It generally takes 2 to 3 years to reach stabilized operations, therefore, the year 2023 has been used to represent project stabilization.

Since Costco would be considered the anchor for the project site, a sales-per-square-foot estimate was derived from e-Marketer Retail information for 2018. The results presented indicate a Costco sales estimate in 2018 of \$1,121 per square foot. As presented in Appendix L, the Costco sales estimate would be \$183.8 million by project stabilization in 2023. The projected sales for the balance of the project site are anticipated to bring total project sales to \$199 million in 2023 dollars,³ as detailed in Table 5-2.

Projected Sales by Category

The new sales generated by the project would be spread across many store merchandising categories due to the range of retailers anticipated. It is necessary to allocate the project sales into appropriate retail categories to determine the potential impact on those specific categories. The sales data source for this study is based on retail categories corresponding to the North American Industry Classification System (NAICS) designation as reported by the publication Esri Market Place Retail Profile. A detailed breakdown of the total project sales by NAICS sales categories anticipated for the project can be found in Appendix L and is summarized below in Table 5-2.

Table 5-2. Estimated Distribution of Project Sales by NAICS Category by Year 2023

Retail Categories	Sales (totals in \$ millions)
Electronics and Appliance Stores	\$14.7
Lawn & Garden Equipment and Supply Stores	\$1.8
Grocery Stores	\$73.5
Beer, Wine & Liquor Stores	\$7.4

³ Total estimated sales for the project as if open in 2018 are \$171.7 million. Sales estimates have been inflated at a rate of 3% annually to 2023, when it is assumed that the project would have reached stabilized operations.

Table 5-2. Estimated Distribution of Project Sales by NAICS Category by Year 2023

Retail Categories	Sales (totals in \$ millions)
Health and Personal Care Stores	\$9.7
Gasoline Stations	\$29.2
Clothing Stores	\$11.5
Shoe Stores	\$1.8
General Merchandise Stores	\$46.8
Restaurants and Other Eating Places	\$2.6
Total	\$199

Retail Sales Leakage Analysis

As discussed in the Urban Decay Analysis (Appendix L), a statistical-based model was used to estimate retail spending potential for the market area based on population, income, and consumer spending patterns. The model determines the extent to which a market area is or is not capturing its sales potential based on estimated retail sales from stores located in the market area. Retail categories in which spending is not fully captured are called “leakage” categories, and categories in which more sales are captured than are generated by market area residents are called “attraction” categories. Generally, attraction categories signal particular strengths of a retail market, and leakage categories signal weaknesses.

A leakage analysis compares the anticipated purchasing power of area residents to the sales experienced at area stores. If store sales are less than the local purchasing power, it is believed that residents are spending a portion of their sales dollars at store locations outside their local market. This is known as leakage. If sales at local stores exceed the local purchasing power, then the market area is known as a sales importer, meaning that consumers from outside the local market are shopping at local stores. A market experiencing leakage is a market that has an opportunity to add retail stores.

The model captures resident spending on retail goods as well as sales generated by residents from outside the market area. This provides a characterization of the sales performance of the local retail base. This analysis was conducted to aid in identifying the extent to which the Costco/Vineyard II Retail Development may or may not divert sales away from existing market area retailers.

Sales Estimates

Three sales leakage analyses were conducted to assess the retail climate of the PMA and SMA. The first analysis examined the PMA’s sales performance relative to its population base to assess the degree to which the PMA is serving the retail needs of its resident population. A second leakage analysis examines the sales performance of the SMA. Finally, the PMA and SMA leakage analyses were combined to reflect the combined Primary and Secondary Market Area (the combined PMA and SMA are shown on Figure 5-1). The leakage analyses were conducted using 2018 sales data and extrapolated to 2023, reflecting the sales estimates for the project assuming the first full year of stabilized store operations in 2023. The consumer expenditure trends for 2023 were assumed to resemble expenditure trends in 2018, with adjustments for interim population growth and inflation. Detailed results of the analyses are available in Appendix L.

The PMA's overall leakage of retail sales in 2018 totaled \$1.9 billion. However, a large portion of this leakage was due to one category: automobile dealers. This category currently experiences \$599.7 million in sales lost outside the PMA, but it is not a relevant category for comparison with the anticipated tenants of the project site. Several retail categories relevant to the project also experienced leakage in sales. The categories with the most leakage are as follows:

- Clothing and shoe stores with \$177.7 million in leakage
- Restaurants and other eating places with \$145.3 million in leakage
- General merchandise stores with \$108.6 million in leakage
- Health and personal care stores with \$132.2 million in leakage
- Electronics and appliance stores with \$71.0 million in leakage
- Gas stations and auto supplies with \$47.3 million in leakage

The high overall leakage total for the PMA is primarily due to the location of two strong retail markets north and south of the PMA along I-15 (Temecula and Lake Elsinore). These leakage results identify opportunities for new retailing to meet the needs of PMA residents. Note that grocery stores experienced very little leakage in 2018 with only \$1.2 million in estimated lost sales.

In 2018, the SMA had overall sales attraction of \$1,075,924,000 in surplus sales. Automobile dealers, general merchandise stores, and grocery stores are all strong performers in the SMA.

Finally, the results of the first two analyses were combined to reflect the total PMA and SMA. The PMA and SMA combined had leakage in the categories of automobile dealers; furniture and home furnishings; electronics and appliance stores; specialty food and beer, wine and liquor stores; health and personal care stores; clothing stores; some specialty retail outlets; and restaurants and other eating places. Overall, the combined market area had sales leakage of \$824.8 million in 2018. However, this projection does not account for interim development nor reflect 2023 conditions when the project is anticipated to reach stabilization. Therefore, adjustments have been made to the projected retail sales leakage analysis to account for new major retail developments that have opened since the end of 2017. The purpose of these adjustments is to more appropriately estimate the size of the PMA retail base at the time the Costco/Vineyard II Center becomes fully operational in order to more realistically estimate the project's impacts. There would be an estimated \$83.2 million in additional sales in 2018 in the combined market area as a result of the following major new retail developments that have opened in the market area since the end of 2017:

- The Shops at the Lakes (Menifee) – estimated 2018 sales of \$54.3 million
- Wildomar Square (Wildomar) – estimated 2018 sales of \$17.1 million
- The Gateway to Temecula Center (Temecula) – estimated 2018 sales of \$11.8 million

This adjustment to the sales base of the combined market area is incorporated into the following analysis of sales impacts.

Sales Impacts within the Project Market Areas

To determine potential sales impacts on existing stores, the analysis evaluates existing supply and demand for retail sales within each NAICS category. Projected population growth and the recapture of existing sales leakage are considered sources of potential demand that may offset the sales impacts associated with the project. The analysis in Appendix L estimates the capture of new resident spending at the project and further assesses the

extent to which the project would capture sales that are currently leaking outside the PMA/SMA. If projected sales at the project are not anticipated to be within the purchasing power of new residents and/or the local recapture of sales currently lost to retailers located outside the market area, then it is assumed that some local stores would be vulnerable to a potential diminution in sales. Estimating the potential sales impact of adding the Costco/Vineyard II Retail Development Project to the PMA and SMA market areas requires the following five-step process:

1. Estimate net new population growth in the PMA and SMA market areas by the year 2023.
2. Estimate the fair-share capture rate for the PMA and SMA store sales (Appendix L, Exhibits A18 and A19).
3. Estimate the PMA and SMA capture rates of their respective area residential spending power (Appendix L, Exhibits A20 and A21).
4. Estimate the Costco/Vineyard II Retail Development sales capture attributed to population growth (Appendix L, Exhibits A22, A23, and A24).
5. Estimate the Costco/Vineyard II Retail Development sales capture of market area sales leakage and the potential for diversion of sales from existing retailers (Appendix L, Exhibit A25)

The following sections summarize the results of the five steps listed above, as illustrated in Appendix L.

Projected Population Growth

The addition of new population and households to the project market area would increase the demand for retail goods in the region. It is estimated that approximately 63,422 new residents will be added to the combined PMA and SMA between 2018 and 2023.

Fair-Share Capture Rate for the Project

In order to estimate how much of market area sales the Costco/Vineyard II Retail Development will be able to capture from the new residents, a baseline fair-share capture rate for the PMA and SMA is determined for each relevant retail category in the project. It is estimated that 80% of PMA sales for the Costco/Vineyard II Retail Development will come from residents of the PMA, while the remaining 20% of PMA sales are estimated to come from sales redirected from the two existing Costco stores in Temecula and Lake Elsinore. As further discussed in Appendix L, the Costco store in Temecula has been highly successful and has been experiencing some level of crowding. Based on this information, it is assumed that some customers would redirect most of their shopping trips to the Costco proposed as part of the project.

As detailed in Appendix L, Exhibit A18, the total sales in the PMA are projected to be \$3.1 billion by 2023, including existing retailers, sales estimated for new businesses added to the area, and sales projected for the project. Overall, a stabilized and successful Costco/Vineyard II Retail Development, as proposed, would capture 4.6% of all retail sales originating from within the PMA, or \$143.3 million annually.

As detailed in Appendix L, Exhibit A19, the total sales originating from within the SMA are projected to be \$7.4 billion by 2023. Because of the large size of this market, and the greater distance between residential areas and the project site, the overall fair-share capture rate for the project would be 0.5% of all SMA-based sales. Based on this capture rate, sales at the Costco/Vineyard II Retail Development from the SMA (exclusive of the PMA) are projected to be approximately \$35.8 million annually.

Capture of PMA and SMA Residential Spending Power

As indicated in Appendix L, Exhibit A20, the estimated residential spending power for retail in the year 2023 in the PMA totals \$5.6 billion, including existing residents and new residents anticipated to be added to the area. By 2023, without any new store additions to the market other than the Costco/Vineyard II Retail Development, the PMA will capture 56% of residential purchase power. This implies that 56% of PMA residential retail demand is satisfied by retail establishments located in the PMA. The remainder is being spent elsewhere outside of the PMA.

As shown in Appendix L, Exhibit A21, the estimated residential spending power for retail in the year 2023 in the SMA totals \$6.6 billion. The SMA retail base is larger than that of the PMA and is expected to generate \$7.4 billion in sales. Store sales totals that exceed the spending power of the residential base indicate that a significant amount of sales are from residents of a neighboring market area, namely residents of the PMA that are choosing to do some of their shopping in the SMA. After adjusting for the non-resident sales, it is estimated that stores in the SMA capture 91% of their respective residents' retail spending.

Capture of Demand from New Population

It is estimated that the increase in retail spending power attributable to new residents in the PMA will total \$461.7 million by 2023 (28,784 new residents × \$16,040 in per capita spending).

As presented in Appendix L, Exhibit A22, PMA retailers are anticipated to capture approximately 56% (\$256.6 million) of the new population retail demand. At a capture rate of 4.6% of area-wide sales, by 2023 the project is anticipated to capture \$11.7 million of sales attributed to new residents in the PMA. Accounting for sales captured by the project, remaining retail purchasing power of the area's new residents in the PMA totals \$245.0 million.

A similar analysis is presented in Appendix L, Exhibit A23, for the SMA. At a capture rate of 0.5% of all SMA-based sales, new residents in the SMA are anticipated to spend \$2.0 million at the Costco/Vineyard II Retail Development, which leaves \$392.6 million in new resident spending power to be spent elsewhere within the SMA.

Overall, the Costco/Vineyard II Retail Development is projected to capture \$13.7 million of its sales from new residents expected to reside in the combined PMA/SMA by 2023.

Recaptured Market Area Retail Leakage by the Project

As shown in Appendix L, Exhibit A25, \$179.1 million of the project's \$199.0 million in expected annual sales would be attributable to consumers residing in the PMA or SMA, with \$13.7 million attributed to new residential growth. After accounting for sales that come from new residents in the market area, there are two possibilities for where the remaining \$165.4 million in sales would come from. The first of these is from the recapture of sales lost to other market areas (i.e., leakage). The second possibility is from taking sales away from existing retail stores within the market area.

The estimated amount of sales leakage in each retail category is shown in Appendix L, Exhibit A15. There are two categories, grocery store sales and general merchandise store sales, where no sales leakage is expected to exist. For those categories with leakage (electronics and appliance stores; lawn and garden equipment; beer, wine and liquor stores; health and personal care stores; gas stations and auto supply; clothing and shoe stores; and restaurants and other eating places), the volume of leakage estimated is great enough to satisfy the remaining category demand. In fact, the Costco/Vineyard II Retail Development will only need to capture 5.9% of the available leakage in the identified categories to satisfy these sales.

The potential recaptured leakage of \$65.2 million from sales currently occurring outside the project market areas would be to the detriment of stores located outside the PMA and SMA. However, these stores are spread across a large geographic area and it is unlikely that any particular individual retailer would be greatly affected. Spread across such a large geographic area and multitude of retailers, this \$65.2 million in recaptured sales would likely cause minor reductions in sales outside of the project market areas, but would be unlikely to cause specific store closures or urban decay.

For grocery and general merchandise goods to be sold at the Costco/Vineyard II Retail Development, there is not enough projected market area leakage to satisfy this newly created supply. Taken together, this represents \$100.1 million in annual sales. The remaining retail spending power from new residents, even after allocating a portion of this spending to the project, should be sufficient to easily absorb the Costco/Vineyard II Retail Development project into the market without sales diversion from existing retailers (Appendix L, Exhibit A25).

Potential for Urban Decay

The proposed project would result in a new source of competitive retail supply, but analysis of each retail category suggests that recapture of existing sales leakage and increased demand by new residents in the project market areas would be sufficient to absorb the additional supply without creating conditions that could result in extreme economic competition leading to the threat of urban decay.

The Urban Decay Analysis (Appendix L) represents a conservative analysis, since it assumes the maximum diversion away from existing retailers upon stabilization of the project. Additionally, the analysis does not take into account any prospective market corrections or enhancements, or potential growth in income among the market area’s population, resulting in an increase in per-capita spending. Further, the population in the project market areas is projected to continue to increase following implementation of the project.

New growth capture and recapture of leakage totals to \$78.9 million, leaving \$100.2 million in project sales to be accounted for. The remaining \$100.2 million in Costco/Vineyard II Retail Development sales will be absorbed by current and new resident spending in the PMA and SMA beyond what the project is already assumed to capture (\$13.7 million). In other words, current and new resident demand is so substantial in 2023, and the existing retail store base is unable to meet that demand, that resident spending power can easily absorb the \$100.2 million in project sales. This will not pull sales from other stores because Costco/Vineyard II would be meeting unmet future demand. There is sufficient excess demand in the PMA and SMA to absorb the \$100.2 million in sales from Costco/Vineyard II, and still leave \$338 million in sales to be absorbed by other new stores. Based on this analysis, the proposed project, when analyzed exclusively from other proposed retail development, is not anticipated to create conditions conducive to urban decay. These findings, summarized in Table 5-3, infer that the project would not likely create conditions that would lead to urban decay, and impacts would be less than significant.

Table 5-3. Potential Sales Impacts on Existing Retailers for Combined Primary and Secondary Market Areas (2023 Dollars)

	Total Impact
Market Area Sales in 2023 Required to Support the Project	\$179,135,955
Sales Supported by New Growth in the Market Area	
Market Area Spending Capacity Attributed to New Growth	\$651,347,849
Project Fair-Share Capture of New Demand	\$13,745,546
Sales Supported by Re-Capture of Current Leakage	

Table 5-3. Potential Sales Impacts on Existing Retailers for Combined Primary and Secondary Market Areas (2023 Dollars)

	Total Impact
Sales Leakage for Retail Categories Relevant to the Project	(\$1,114,433,957)
Leakage Captured by the Project	\$65,228,766
Total Sales Supported by New Growth and Recapture of Leakage	\$78,974,312
Intermediary Potential Sales Impacts on Existing Retailers	\$100,161,643
Remaining Potential Demand from Population Growth to Offset Intermediary Impacts	\$437,664,717
Sales Diverted from Existing Retailers	\$0

5.4.1.4 Cumulative Impacts

Cumulative urban decay impacts have been assessed for the Costco/Vineyard II Retail Development in combination with currently planned competitive retail projects, or “cumulative projects.” The cumulative projects considered are primarily larger neighborhood and community retail centers as well as power centers (see Table 5-4 for a list of cumulative projects considered for the Urban Decay Analysis). Other, smaller retail developments of less than 20,000 square feet were excluded because they are not considered to be competitive with a large shopping center such as the Costco/Vineyard II Retail Development, both in terms of size and tenant mix. The analysis in Appendix L identifies 19 planned or proposed major retail projects in the project market areas, consisting of 10 in Murrieta, six in Menifee, two in Lake Elsinore, and one in Hemet. These 19 projects total to approximately 1.5 million square feet. Because the future tenant mix is unknown for many of the proposed cumulative projects, the analysis estimates a standard tenant mix based on information from the ICSC as well as consultant experience with shopping center planning in California. It should also be noted that the market areas as defined for the Costco/Vineyard II Retail Development project have been used in the cumulative analysis, and separate market areas were not defined for each cumulative project or store. Further, sales from all proposed cumulative projects have been forecasted to 2023 to assess the prospective cumulative impact of the Costco/Vineyard II Retail Development in combination with these projects if all projects were to be completed by 2023, representing a worst-case scenario analysis.

Table 5-4. Cumulative Projects

Project Name	Project Description
<i>PMA – Projects Identified in Murrieta</i>	
The Orchard at Stone Creek	185,000-square-foot addition to an existing shopping center, includes a 78,000-square-foot multiplex theater
Hot Springs Center	24,000-square-foot neighborhood shopping center
Murrieta Marketplace	518,817-square-foot power center consisting of 26,100 square feet of restaurant space, a 136,000-square-foot Home Depot, a gas station, and additional building pads that could house retail or consumer service businesses
Murrieta Gateway	Three industrial buildings with a total of 285,270 square feet, a 150-room hotel, and 43,400 square feet of retail with a gas station
Aldi Grocery Store	Freestanding grocery store
French Valley Crossing	36,300-square-foot neighborhood center
The Triangle	1.76 million square feet (600,000-square-foot office, 800,000-square-foot retail, theater, and hotel with meeting rooms). The current square footage is based on the City’s Triangle Specific Plan; however, this project has been in planning for a number

Table 5-4. Cumulative Projects

Project Name	Project Description
	of years and has a great potential to change from original plans. For this analysis it has been assumed 100,000 square feet of retail would be built and operational by 2023.
Murrieta Hospitality Commons	59,840-square-foot hotel consisting of 104 rooms and three restaurants totaling 16,100 square feet, and 10,500 square feet of retail
Vineyard I	78,489-square-foot shopping center and a 91-room hotel
Vineyard III	32,208-square-foot commercial center, consisting of 11,600 square feet of retail, 8,000 square feet of restaurants, a 3,558-square-foot bank and 9,000 square feet of auto related uses
<i>PMA – Projects Identified in Menifee</i>	
Junction at Menifee	309,600-square-foot addition to an existing shopping center
McCall Square	71,000-square-foot neighborhood retail center
McCall Square II	84,000-square-foot neighborhood retail center
Menifee Crossroads	30,500-square-foot addition to an existing shopping center
Menifee Lakes Plaza	150,000-square-foot power center. Proposed tenants include Barons Market, LA Fitness, Raising Cane’s, Cafe Rio, and Jamba Juice.
Menifee Plaza	14,000-square-foot neighborhood retail center
<i>SMA – Projects Identified in Hemet</i>	
The Boardwalk	Phase II – 64,000-square-foot addition to an existing shopping center
<i>SMA – Projects Identified in Lake Elsinore</i>	
Artisan Alley at The Diamond	95,000 square feet of retail and restaurant space and a 130-room hotel
Central Plaza	80,000-square-foot community shopping center. Proposed tenants include Marshalls, Sketchers, Five Below, ULTA Beauty, Panera Bread, and Starbucks.

The results in Appendix L, Exhibits A28 and A29, indicate that by 2023, if all cumulative projects are completed as planned, they have the potential to generate additional retail sales totaling \$627.3 million originating from the PMA and SMA. Sales estimates for the cumulative projects were derived for each retail category relevant to the project. In deriving these sales estimates, it was assumed that 75% to 95% of sales would originate from the PMA, roughly consistent with the market split assumption used in the analysis for the Costco/Vineyard II Retail Development. For projects located in the SMA, it was assumed that 85% of sales from those projects would originate from the SMA.

Using the same methodology discussed in Section 5.4.1.3, Impacts Analysis, the cumulative analysis estimates the maximum 2023 impact of the Costco/Vineyard II Retail Development in combination with the cumulative projects on existing retailers in the market area, which is presented in Appendix L, Exhibit A32, and summarized below in Table 5-5.

Table 5-5. Potential Sales Impacts from Cumulative Projects for Combined PMA and SMA (2023 dollars)

	Total Impact
Retail Sales Required to Support Planned + Proposed Retail Centers	\$700,416,451
Costco / Vineyard II Retail Development Sales Supported by New Growth	\$13,745,546
Potential Sales Impacts on Other Retailers	\$686,670,906

Table 5-5. Potential Sales Impacts from Cumulative Projects for Combined PMA and SMA (2023 dollars)

	Total Impact	
Sales Supported by Re-Capture of Current Leakage Sales Leakage for Retail Categories Relevant to the Project Leakage Captured by Planned and Proposed Projects	(\$1,114,433,957) \$271,054,667	
Intermediary Potential Sales Impacts	\$415,616,239	
Retail Categories Where Recapture of Market Area Sales Leakage Will Satisfy the Introduction of New Retail Space		
Electronics & Appliance Stores	100%	
Beer, Wine & Liquor Stores	100%	
Health & Personal Care Stores	100%	
Gasoline Stations / Auto Supplies	100%	
Clothing & Clothing Accessories Stores	100%	
Retail Categories Where Recapture of Market Area Sales Leakage and Demand from Population Growth Will Satisfy the Introduction of New Retail Space	100%	
Restaurants/Other Eating Places		
Retail Categories Where There is a Risk of Diverted Sales	\$ of Diverted Sales	Square Feet
Lawn & Garden Equipment & Supply Stores	\$16,120,275	37,900 sf
Grocery Stores	\$101,778,991	113,100 sf
General Merchandise Stores	\$54,017,909	120,000 sf
Potential Sales Diverted from Existing Retailers	\$171,917,175	271,000 sf

As shown in Table 5-5, after the Costco/Vineyard II Retail Development project reaches stabilized operations by 2023 and if all other proposed projects are completed during the same period, an oversupply of retail in lawn and garden equipment stores, grocery stores, and general merchandise stores is projected. Of these, the lawn and garden equipment category is expected to be the most impacted, with approximately \$16 million in surplus sales, which represents 47.6% of projected 2023 sales in that category in the PMA and SMA. The grocery stores category would have a projected surplus equal to 5.8% of 2023 sales in the PMA and SMA, and general merchandise stores category would have a projected surplus equal to 2.7% of 2023 sales in the PMA and SMA.

The Costco/Vineyard II Retail Development alone would not cause the surplus sales in the lawn and garden category, as lawn and garden equipment and supplies only make up approximately 1% of the proposed project's sales. However, there are two new Home Depot stores planned in the PMA (which are included in the cumulative project list), along with other stores with lawn and garden sections, which will have a big impact on the lawn and garden retail category.

Table 5-5 presents a conservative analysis, as it does not consider factors such as prospective market corrections or enhancements following the introduction of the cumulative projects into the marketplace or the potential increase in consumer spending pursuant to real income growth or population growth beyond the bounds of this analysis.

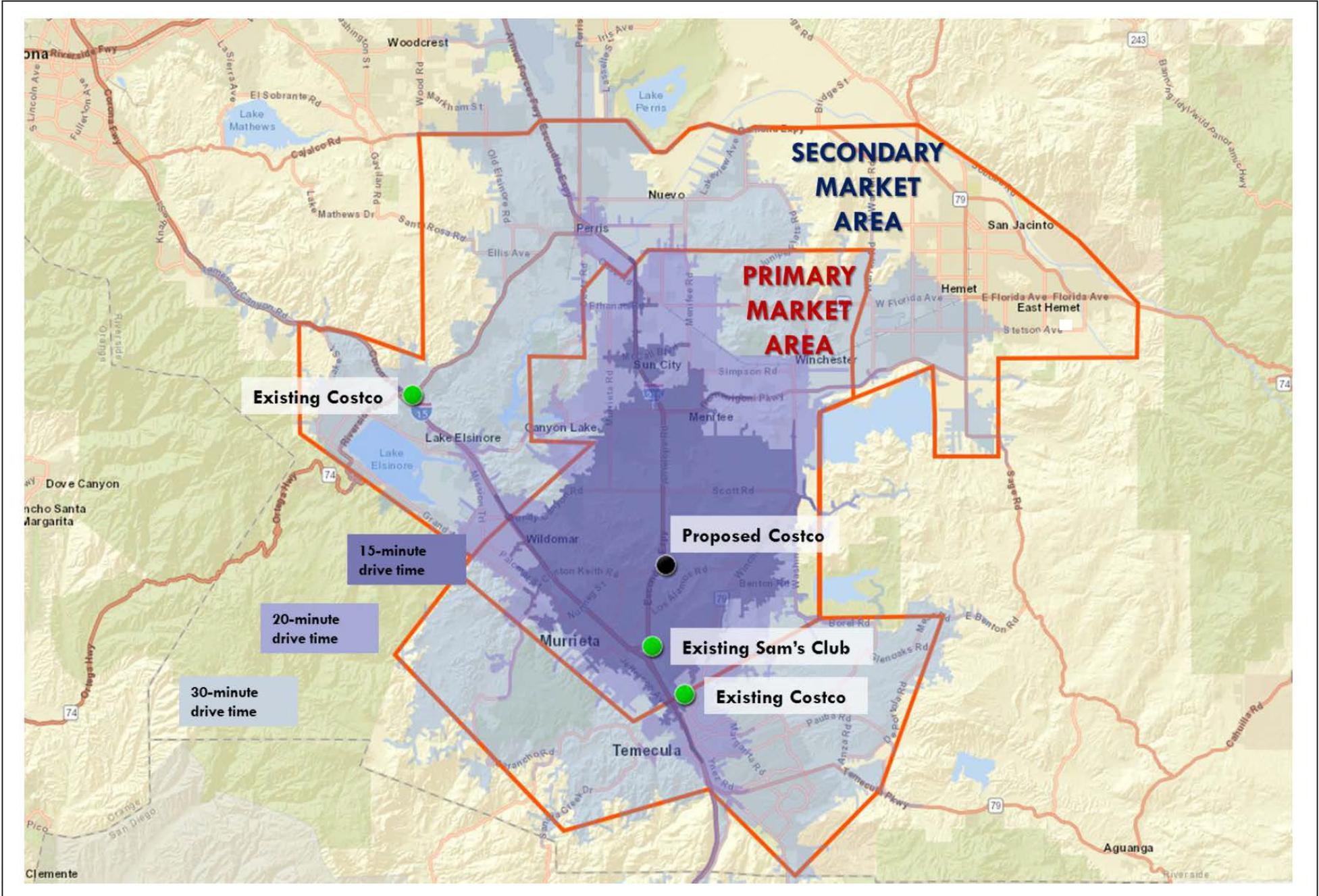
Nevertheless, a sales impact of 5.8% and 2.7% for the grocery store goods and general merchandise categories, respectively, is highly unlikely to lead to store closures, especially if the impact is spread across more than one store. The lawn and garden market in the PMA and SMA is currently comprised primarily of lawn and garden sections within larger big box stores. Even if the lawn and garden equipment and supply sections of these larger stores are impacted by the

cumulative projects, it is unlikely this impact will lead to store closures because the lawn and garden sections generally represent less than 10% of store sales. Therefore, cumulative impacts would be less than significant.

5.5 References Cited

SCAG (Southern California Association of Governments). 2019. *Profile of the City of Murrieta: Local Profiles Report 2019*. May 2019. Accessed March 2020. <https://www.scag.ca.gov/Documents/Murrieta.pdf>.

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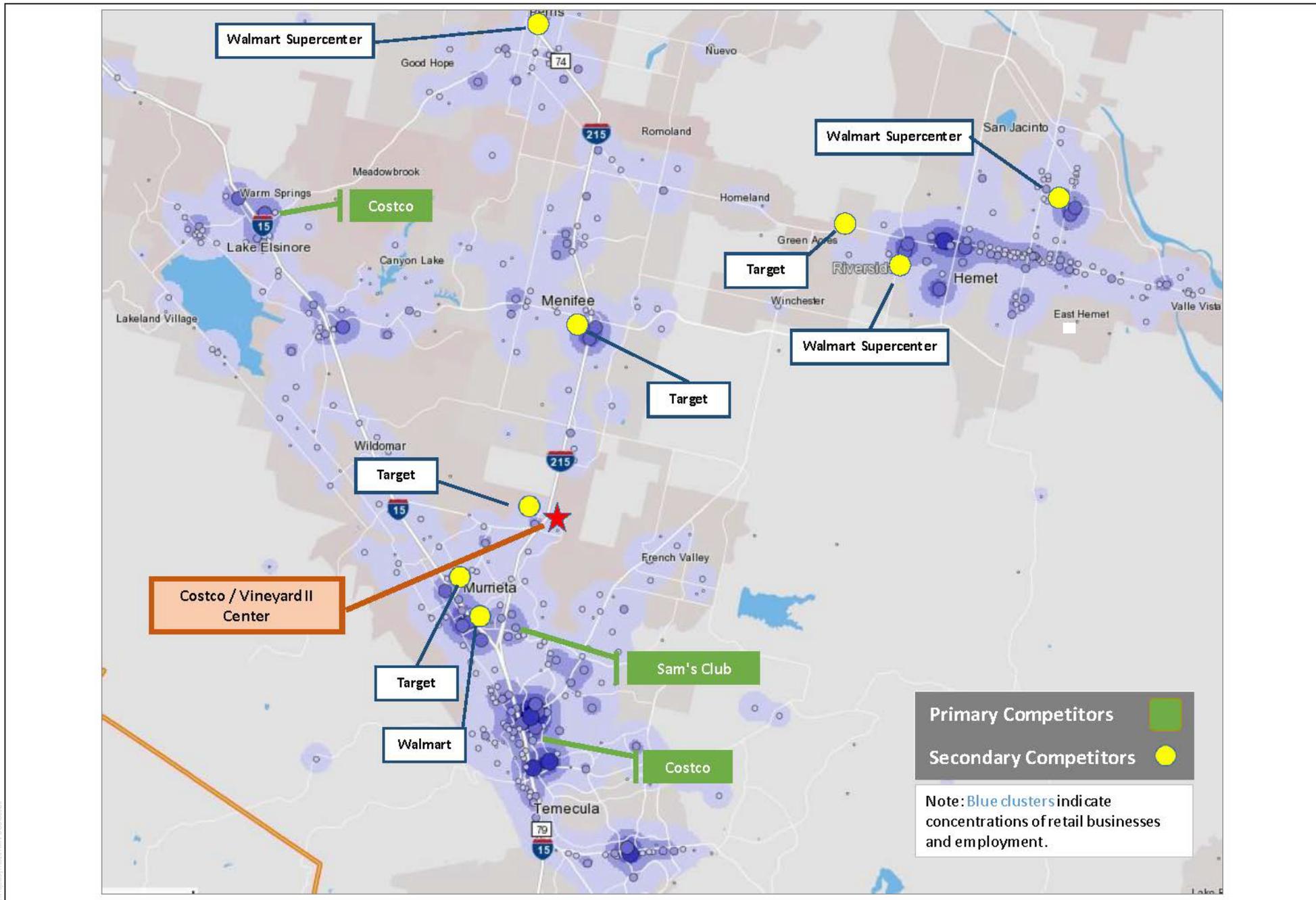


SOURCE: HR&A Advisors, Inc. 2019



FIGURE 5-1
Primary and Secondary Market Area Map
 Costco/Vineyard II Retail Development Project, City of Murrieta, California

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SOURCE: HR&A Advisors, Inc. 2019

FIGURE 5-2
 Location of Primary and Secondary Competitive Supply
 Costco/Vineyard II Retail Development Project, City of Murrieta, California

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6 Alternatives

The California Environmental Quality Act (CEQA) requires that environmental impact reports (EIRs) “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives” (14 CCR 15126.6[a]). The CEQA Guidelines direct that the selection of alternatives be governed by “a rule of reason” (14 CCR 15126.6[a], [f]). As defined by the CEQA Guidelines, “The range of alternatives required in an EIR is governed by a ‘rule of reason’ that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR needs to examine in detail only the ones that the Lead Agency determines could feasibly attain most of the basic objectives of the project” (14 CCR 15126.6[f]).

As presented in prior sections of this EIR, the proposed Costco/Vineyard II Retail Development Project (project) would result in significant and unavoidable construction and operational impacts with respect to air quality and operational impacts with respect to traffic. These impacts are summarized below:

Air Quality. The proposed project would exceed significance thresholds of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) during operation even with implementation of **Mitigation Measure (MM) AQ/GHG-2**; thus, the impact related to the project’s potential to conflict with or obstruct implementation of the South Coast Air Quality Management District (SCAQMD) 2016 Air Quality Management Plan (SCAQMD 2017) would remain significant and unavoidable. Because the proposed project’s operational VOC and NO_x emissions would exceed SCAQMD thresholds, the proposed project would result in a cumulatively considerable increase in criteria air pollutant emissions. During project construction, maximum daily on-site emissions of course and fine particulate matter (PM₁₀ and PM_{2.5}) would exceed the SCAQMD’s localized significance thresholds; therefore, impacts associated with the exposure of sensitive receptors to substantial pollutant concentrations would be significant and unavoidable even with implementation of **MM-AQ-1**. Because operation-generated VOC and NO_x emissions would exceed SCAQMD thresholds, and because **MM-AQ/GHG-2** cannot be quantified due to uncertainty of quantified reductions, the potential for the proposed project to contribute to regional health effects associated with ozone, VOC, and NO_x during project operation would remain significant and unavoidable.

Traffic. The proposed project would result in project-level level-of-service impacts to the intersections of Salida Del Sol and Clinton Keith Road, Elizabeth Lane and Clinton Keith Road, and Max Gillis Boulevard/Thompson Road and State Route 79 that could not be mitigated to a less-than-significant level.

California Oaks Road and Clinton Keith Road: With the implementation of the proposed **MM-TRAF-1**, the impact at California Oaks Road and Clinton Keith Road would be less than significant. Despite implementation of **MM-TRAF-9**, this queuing impact remains significant and avoidable because timing for implementation cannot be guaranteed by project build-out.

Greer Road/Murrieta Oaks Avenue and Clinton Keith Road: With implementation of **MM-TRAF-2**, the impact is less than significant.

Mitchell Road/Murrieta Oaks Avenue and Clinton Keith Road: With implementation of the proposed **MM-TRAF-3**, the queuing impact is less than significant. Despite implementation of **MM-TRAF-6**, the LOS impact to this intersection is significant and unavoidable because the timing of the mitigation cannot be guaranteed by project

build-out. Despite implementation of **MM-TRAF-6**, the cumulative queuing impact to this intersection is significant and unavoidable because timing of the mitigation cannot be guaranteed by project build-out.

High School Driveway West/Warm Springs Parkway and Clinton Keith Road: With the implementation of the proposed **MM-TRAF-4** and **MM-TRAF-7**, the impacts at High School West Driveway/Warm Springs Parkway and Clinton Keith Road would be less than significant.

Whitewood Road and Clinton Keith Road: While the project applicants would pay a proportional fair share to the City's CIP (project #8389) to provide the dual northbound and southbound left turn lanes at part of **MM-TRA-5**, right-of-way restrictions prohibit extending the turn lanes to the total length needed and full funding is not guaranteed by project build-out. This impact remains significant and unavoidable.

Nutmeg Street and Clinton Keith Road: Despite implementation of the proposed **MM-TRAF-8**, full funding for implementation is not guaranteed by project build-out. This queuing impact remains significant and unavoidable.

I-215 Southbound Ramps and Clinton Keith Road: Queuing impacts remain significant and unavoidable because it is not possible to extend storage due to right-of-way restrictions and spacing to the adjacent traffic signal.

Bronco Way and Clinton Keith Road: The cumulative condition queuing impact is significant and unavoidable because funding and implementation of **MM-TRAF-10** cannot be guaranteed by project opening.

Whitewood Road and Baxter Road: The cumulative condition queuing impact is significant and unavoidable because the implementation of **MM-TRAF-12** cannot be guaranteed by project build-out.

Consistent with CEQA, the analysis presented in this chapter considers whether a reasonable range of alternatives to the proposed Costco/Vineyard II Retail Development Project (project) could reduce those impacts.

The selection of alternatives and their discussion must “foster informed decision-making and public participation” (14 CCR 15126[a]). Therefore, this chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

The CEQA Guidelines require the analysis of a “no project” alternative and, depending on the circumstances, evaluation of alternative location(s) for the proposed project, if feasible. Based on the alternatives analysis, an environmentally superior alternative is to be designated. In general, the environmentally superior alternative is the alternative with the least adverse impacts on the environment. If the environmentally superior alternative is the no project alternative, the EIR shall also identify another environmentally superior alternative among the other alternatives (14 CCR 15126.6[e][2]).

Section 15126.6(d) of the CEQA Guidelines states that alternatives analysis need not be presented in the same level of detail as the assessment of the proposed project. Rather, the EIR is required to provide sufficient information to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant impacts in addition to those of the proposed project, analysis of those impacts is to be discussed, but in less detail than for the proposed project. Furthermore, the alternatives analysis only examines those resources that could have impacts across the alternatives. For example, if the project site does not contain agricultural, forestry or mineral resources (see Appendix A for the Initial Study which contains the analysis for these subjects), then an analysis of these topics across the alternatives is not informative, as the site does not contain these resources. For resources in which there is no impact as established in the Initial Study, there is also no reason to analyze these subjects across the alternatives, as there is also no impact from a reduced alternative

if the proposed project did not have an impact (e.g., physical division of an established community or conflicts with applicable land use plans, policies or regulations).

6.1 Project Objectives

The proposed project has been designed to meet the following series of objectives:

- Provide a mix of retail, restaurant, and anchor tenants that provide residents with additional shopping, dining, and fueling options in a location that is convenient for its customers and employees to travel to shop and work
- Enhance the City of Murrieta (City) with an economically viable development by establishing anchored retail required to support brick and mortar retail in the current online-oriented retail environment
- Provide a gasoline fueling station adjacent to major roadways and the regional highway system
- Generate additional revenues to the City in the form of increased sales and property tax revenues
- Create jobs in the City and improve the local job/housing balance
- Design a project that is consistent with the City's General Plan and Development Code
- Create a new opportunity for a wide range of integrated retail goods and services to meet the needs of the growing Murrieta community
- Design a site plan that minimizes circulation conflicts between automobiles and pedestrians

6.2 Alternatives Considered and Eliminated During the Scoping/Project Planning Process

The CEQA Guidelines provide that this EIR should “identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the Lead Agency’s determination” (14 CCR 15126.6[c]). The following is a discussion of the proposed project alternatives during the scoping and planning process and the reasons they were not selected for detailed analysis in this EIR.

With respect to the feasibility of potential alternatives to the proposed project, CEQA Guidelines Section 15126.6(t)(I) states, “Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries ... and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site.”

In determining an appropriate range of project alternatives to be evaluated in this EIR, a number of possible alternatives were initially considered and then rejected. Project alternatives were rejected because they could not accomplish the basic objectives of the proposed project; they would not have resulted in a reduction of significant adverse environmental impacts; or they were considered infeasible to construct or operate. For example, the size of the Costco being proposed is the smallest size Costco that Costco now builds so alternatives that contemplate reduced size Costco warehouses is not feasible.

Reduced Size Costco

The proposed project includes a 153,362 square-foot Costco which is the smallest warehouse planned and constructed by Costco (Murillo 2020). Because Costco is a wholesaler, a smaller size store inhibits the ability to provide items in large sizes and volumes to support businesses. Products are shipped to the warehouse on pallets, stored in the warehouse on pallets, and are unpacked for purchase, as needed. The stores have concrete floors, wide aisles, very high shelving, and few obstructions for bobcats to move pallets around. It is not feasible to do this in small stores because of the size of the pallets and the volume of product that comes to the warehouse. In addition, a smaller warehouse does not reduce environmental impacts because Costco warehouses are placed in certain market/trade areas to be centrally located to a base of customers. Therefore, a smaller warehouse may be more crowded, it might require more frequent trips to purchase all the products needed if they cannot be offered regularly and have to rotate based on space and customers will travel out of the market area to go to another Costco that does carry a wider range of products, increasing transportation and air quality impacts. Thus, alternatives that include a smaller sized Costco were rejected as unlikely to reduce environmental impacts.

Vineyard II Retail Development without Costco

An alternative that would double the proposed square feet of Vineyard II to 144,000 square feet of retail similar to that proposed for the Vineyard II site and without a Costco was considered. Under this alternative, the proposed Vineyard II project would proceed and a retail center similar in size and uses to the Vineyard II would be constructed on the west side of Warm Springs Parkway in lieu of the Costco. The trips generated by 144,000 square feet of retail development are estimated to be 8,804 daily trips. This number of daily trips exceeds the number of daily trips of a Costco warehouse alone (8,378 daily trips as shown in the Kittelson TIA in Appendix I). Therefore, an alternative with less square footage across the site that removes the Costco does not reduce daily trips or emissions and does not avoid a significant impact. Therefore, this alternative was rejected because it does not achieve the basic purpose of an alternative which is to reduce or avoid significant impacts (CEQA Guidelines Section 15126.6[c]). Furthermore, one of the project objectives is to provide a retail development with an anchor which would help support traditional brick and mortar retail in an environment of increasing online retail competition. This alternative would not meet that project objective.

Costco Without a Fueling Station

Costco builds all new warehouses with fueling stations and has gone back to retrofit many older Costco buildings, which were purchased from other owners, with fueling stations. Therefore, it is not in Costco's business model to construct new warehouses without fueling stations. Thus, this alternative was rejected as infeasible as Costco does not build new Costco warehouses without the fueling station.

Residential Development

The City's General Plan Land Use Map designates the project site as Commercial (C) and the City's Zoning Map shows the site as zoned Regional Commercial (RC), therefore, it would require a General Plan Amendment and zoning map change to allow residential development, which is not consistent with the city's vision for maximizing the use of the site which is freeway-facing and along a major arterial roadway, making it optimal for commercial development. Furthermore, residential development does not further the project objectives and thus, it was rejected as infeasible for this site.

Office Development

The City's General Plan Land Use Map designates the project site as Commercial (C) and the City's Zoning Map shows the site as zoned Regional Commercial (RC), therefore, it would require a General Plan Amendment and zoning map change to allow office development, which is not consistent with the city's vision for maximizing the use of the site which is freeway-facing and along a major arterial roadway, making it optimal for commercial development. Furthermore, office development does not further the project objectives and thus, it was rejected as infeasible for this site.

Continuation of Mass Grading Operation

As described in the project description, North County Sand and Gravel has been conducting a mass grading operation on the site intermittently since approximately 2006. This work was initially undertaken to provide fill material for the Interstate 215/Clinton Keith Road interchange improvements project. The mass grading operation ceased in December 2019 when the grading permit term concluded with completion of the implementation of best management practices (BMPs) in January 2020. An alternative which considers the continuation of the mass grading operation was rejected because the work under the permit has been completed and there is a limited amount of additional grading that could be carried out on site since there is a need to preserve grade with the future Warm Springs Parkway that will be extended from Clinton Keith Road. Therefore, this alternative was not carried forward for further evaluation.

Alternate Site Locations

CEQA does not require that an analysis of alternate sites always be included in an EIR. CEQA Guidelines Section 15126.6(f)(2) provides guidance regarding consideration of one or more alternative location(s) for a proposed project, stating that putting the project in another location should be considered if doing so would allow significant effects of the project to be avoided or substantially lessened. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. However, if the surrounding circumstances make it reasonable to consider an alternate site, then a project alternative should be considered and analyzed in the EIR. Pursuant to CEQA Guidelines Section 15126.6(f)(2), in making the decision to include or exclude analysis of an alternate site, the "key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR."

During the planning process, alternative locations for a Costco Wholesale (Costco) warehouse were considered. Costco did extensive market research and selected Murrieta as a location that needs more services and the appropriate location to maintain sufficient distance between other Costco locations based on customer home addresses and an average travel distance. Within Murrieta, a number of locations were considered including the existing Orchard Shopping Center south of Target across the Interstate 215. However, the Orchard Shopping Center location was ultimately rejected by Costco because it was too small, with an awkward shape that made access difficult. Additionally, there was also a property restriction on the Orchard Shopping Center location prohibiting the sale of gasoline by a competitor. Costco's approach for new projects is to build the warehouse and gasoline station together; thus, the Orchard Shopping Center location was rejected by Costco because they could not build both the warehouse and gasoline station.

A second site was considered by Costco in Menifee at Scott Road and the Interstate 215. However, this site is too close to the Lake Elsinore Costco and would potentially pull business away from that warehouse. Secondly, the improvements on the Scott Road/Interstate 215 interchange are not anticipated to be completed for several more years, and those improvements are needed first. It is likely that because those improvements were not in place, the traffic and circulation impacts in that location would have been significant and unavoidable, thus, not meeting the intent of an alternative to reduce impacts.

6.3 Alternatives Selected for Further Analysis

This section discusses a reasonable range of alternatives to the proposed project, including a no project alternative, in compliance with CEQA Guidelines Section 15126.6(e). These alternatives include the following:

- Alternative 1: No Project/No Development Alternative
- Alternative 2: Reduced Project/Reduced Vineyard II Development
- Alternative 3: Reduced Project/No Vineyard II Development

Each alternative's environmental impacts are compared to the proposed project and determined to have fewer impacts, similar or the same impacts, or greater impacts.

6.3.1 Alternative 1: No Project/No Development Alternative

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate and analyze the impacts of a no project alternative. The "purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (14 CCR 15126.6[e][1]). When defining the no project alternative, the analysis shall be informed by "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (14 CCR 15126.6[e][2]).

The No Project Alternative

The CEQA Guidelines state that "in certain instances, the no project alternative means 'no build' wherein the existing environmental setting is maintained. Where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment" (14 CCR 15126.6[e][3][B]). In the case of the No Project/No Development Alternative, the existing site would be vacant as the mass grading operation's permit term concluded in December 2019 and even with permit renewal, limited additional grading could be carried out since the grade requirements for the project site and Warm Springs Parkway have essentially been met. The construction of Warm Springs Parkway north of Clinton Keith is included in the General Plan, but it is contingent upon development occurring in the vicinity to drive the need for the road. Thus, if no development occurs on the proposed project site, and there is no pending application for development to the north, construction of Warm Springs Parkway is not reasonably foreseeable. Therefore, under the No Project Alternative, the proposed project would not be built and no significant infrastructure improvements would be implemented.

Analysis

Aesthetics

Under the No Project/No Development Alternative, the project site would be vacant. The project site displays a disturbed visual character that is reinforced by the presence of large amounts of dirt that have been moved around the site. The No Project/No Development Alternative would maintain the current visual quality of the site and would not add new lighting sources. The No Project/No Development Alternative would not enhance the appearance of the area by developing the site with a new retail shopping center and the site would remain visually incompatible with the surrounding area which has a suburban character. Therefore, although neither the proposed project nor the No Project/No Development Alternative would have significant impacts, the proposed project is considered to have fewer visual impacts compared to the No Project Alternative which leaves the site vacant and unimproved with exposed dirt, dirt piles and scrubby brush. Therefore, the No Project/No Development has more visual impacts than the proposed project.

Air Quality

Construction Emissions

Under the No Project/No Development Alternative, there would be no development of the project site. No construction activities would occur, and therefore, there would be no construction air pollutant emissions. Under the proposed project, construction emissions of NO_x would exceed the SCAQMD threshold, as a result of haul truck trips, rock crushing, rock popping activities, and grading. **MM-AQ-1** would be applied to the proposed project and would reduce impacts associated with construction emissions of NO_x to less-than-significant levels. However, the maximum daily construction-generated on-site emissions would exceed the SCAQMD localized significant thresholds for PM₁₀ and PM_{2.5} and would be significant and unavoidable even with implementation of **MM-AQ/GHG-1**. Therefore, the No Project/No Development Alternative would have less environmental impact than the proposed project with regard to construction emissions.

Operational Emissions

Under the No Project/No Development Alternative, the project site would be vacant and no further grading would occur. No new buildings or improvements would occur and no fueling station would be located on the project site, which would result in no VOC emissions from gas station loading, breathing, refueling, hose permeation, and spillage emissions, fuel delivery truck and vehicle trip travel and idling emissions. Under the No Project/No Development Alternative there would be no operational pollutant emissions that would occur on the project site. As shown in Table 4.2-7, Estimated Maximum Daily Operational Criteria Air Pollutant Emissions – Unmitigated, in Section 4.2, Air Quality, of this EIR, the implementation of the proposed project would exceed SCAQMD thresholds for VOC and NO_x, primarily due to mobile emissions. Impacts would be significant and unavoidable with implementation of **MM-AQ/GHG-2**. Therefore, the No Project/No Development Alternative would have less environmental impact than the proposed project with regard to operational emissions.

Biological Resources

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. As described in Section 4.3, Biological Resources, construction of the proposed project could result in indirect impacts to special-status plants, special-status wildlife species, nesting birds, and burrowing owl (*Athene cunicularia*). The

construction period mitigation measures proposed (**MM-BIO-1**, General Avoidance and Minimization Measures, **MM-BIO-2**, Burrowing Owl Pre-Construction Survey, and **MM-BIO-3**, Pre-Construction Nesting Bird Survey, if construction occurs during the nesting season, and **MM-BIO-4**, Implementation of Urban/Wildlands Interface Guidelines) would minimize impacts to a less-than-significant level. As the No Project/No Development Alternative would not result in any further grading on the project site, the No Project/No Development Alternative would have less environmental impact than the proposed project with regard to impacts to biological resources.

Cultural Resources

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. Therefore, there would be no potential for impacts to cultural resources. As described in Section 4.4, Cultural Resources, construction of the proposed project could result in impacts to cultural resources. Although mitigation measures (**MM-TCR-1** through **MM-TCR-5**) are proposed that would minimize these potential impacts to a less-than-significant level, less-than-significant impacts to cultural resources on the project site could occur. As the No Project/No Development Alternative would not result in any further grading on the project site, the No Project/No Development Alternative would have less environmental impact than the proposed project with regard to cultural resources impacts.

Geology and Soils

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. Under current conditions, substantial soil erosion and loss of topsoil is likely, due to the disturbed, undeveloped ground surface. A debris basin was installed to capture siltation from traveling off site; however, sediments are exposed across the project site. Excavations and grading for the proposed project would result in disturbance of existing sediments, such that erosion could be exacerbated during precipitation or high-wind events. However, proposed project grading and construction would be completed in accordance with a Stormwater Pollution Prevention Plan (SWPPP), as mandated by the National Pollutant Discharge Elimination System (NPDES), which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. Upon implementation of the proposed project, the site would be graded and paved, greatly reducing the possibility for soil erosion or loss of topsoil compared to current conditions. Although the No Project/No Development Alternative could result in substantial erosion and loss of topsoil, NPDES would apply to the former mass grading operations, and BMPs would be required to be implemented on the site. Implementation of BMPs would reduce impacts of the No Project/No Development Alternative to a less-than-significant level. Therefore, neither the proposed project nor the No Project/No Development Alternative would have significant environmental impacts, and the No Project/No Development Alternative would have similar environmental impacts as the proposed project with regard to geology and soils.

Greenhouse Gas Emissions

Under the No Project/No Development Alternative, no further grading would occur on the project site. Therefore, there would be no greenhouse gas (GHG) emissions associated with construction, including grading, off-road construction equipment, rock crushing, rock popping, blasting, haul trucks, vendor trucks, and worker vehicle trips, or future operations. The proposed project would generate vehicular trips from customers, employees, and deliveries, and would require building energy, compressed natural gas forklifts, landscape and maintenance, solid waste, and water supply and wastewater treatment, which would result in additional GHG emissions when compared to a vacant and unutilized site. Therefore, although neither the proposed project nor the No Project/No Development Alternative would have significant energy impacts, the No Project/No Development Alternative would have less environmental impact than the proposed project in terms of GHG emissions impacts with respect to construction and operations.

Hazards and Hazardous Materials

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. Construction of the proposed project would involve the transport, use, or disposal of hazardous materials on or off site. These materials would include gasoline, diesel fuel, lubricants, and other petroleum-based products used to operate and maintain construction equipment. Under the proposed project, all hazardous materials generated and/or used on the property would be managed in accordance with all relevant federal, state, and local laws. The proposed project includes operation of a shopping center with a Costco and a gas station, and associated infrastructure improvements. Operation of these facilities would involve the routine handling, transport, use, and disposal of hazardous materials, including gasoline, cleaning solvents and disinfectants, petroleum-based lubricants, photo-processing chemicals, automobile batteries, detergents, chlorine, bleach, and other chemicals. The No Project/No Development Alternative would not involve the handling of these materials. Therefore, although neither the proposed project nor the No Project/No Development Alternative would have significant environmental impacts, the No Project/No Development Alternative would have less environmental impact than the proposed project in terms of hazards and hazardous materials impacts.

Hydrology and Water Quality

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. No changes would be made to the current drainage patterns on the project site, and no changes with regard to hydrology and water quality would occur.

The project site is underlain by granitic bedrock that is not an area of groundwater recharge. The proposed project and the No Project/No Development Alternative would not interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Under current conditions, substantial soil erosion and loss of topsoil is highly likely due to the disturbed, undeveloped ground surface. Excavations and grading for the proposed project would result in disturbance of existing sediments, such that erosion could be exacerbated during precipitation or high-wind events. Proposed project grading and construction would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. Upon proposed project implementation, the site would be graded and paved, greatly reducing the possibility for soil erosion or loss of topsoil compared to current conditions. Under the Project/No Development Alternative substantial soil erosion and loss of topsoil would remain highly likely. However, NPDES would apply to the former sand and gravel permit operations, and BMPs would be required to be implemented on the site. Implementation of BMPs would reduce impacts of the No Project/No Development Alternative to a less-than-significant level.

The project site is underlain by dense, generally impermeable rock; therefore, soil infiltration would be limited. When brought to grade, the proposed project site will become much flatter than its natural condition, and all impervious areas would be designed to drain to drainage management areas that utilize biofiltration or hydromodification or to water quality basins. Therefore, although the proposed project would alter the existing drainage pattern of the site, it would not substantially alter the existing drainage pattern of the site such that substantial erosion or siltation would occur. Peak discharges were designed to be equal to or less than pre-development flows. The Project/No Development Alternative as compared to the proposed project, would be similar. Therefore, the No Project/No Development Alternative is considered environmentally similar to the proposed project in terms of hydrology and water quality impacts.

Noise

Construction Noise

Under the No Project/No Development Alternative, no further grading would occur. Under the proposed project, construction noise from the use of construction equipment, such as heavy equipment, haul trucks, and additional worker trips, would occur, although with implementation of mitigation measures (**MM-NOI-1** through **MM-NOI-3**) impacts would be less than significant. Therefore, the No Project/No Development Alternative would have fewer impacts compared to the proposed project in terms of construction noise.

Operational Noise

Under the No Project/No Development Alternative, there would be no development of the project site and no further grading would occur. The proposed project would introduce new on-site mechanical noise, parking lot noise, and traffic noise. Although the proposed project would not result in significant noise impacts and no operational noise mitigation measures would apply, the proposed project would result in new noise sources that would not occur as part of a vacant site. The No Project/No Development Alternative would have fewer impacts compared to the proposed project in terms of operational noise impacts.

Population and Housing

Under the No Project/No Development Alternative, the site would remain vacant and no further grading would occur. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development would employ approximately 35 full-time employees, for a maximum of 285 full-time employees all of whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR. As the No Project/No Development Alternative would not increase jobs or increase the need for housing, it would not result in additional construction or demand for additional services. Therefore, although the proposed project would not have significant environmental impacts, the No Project/No Development Alternative would have fewer impacts than the proposed project in terms of population and housing impacts.

Public Services

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development would employ approximately 35 full-time employees, for a maximum of 285 full-time employees all of whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR. As such, the proposed project would result in an increase in employees in the area, which would increase demand for fire protection services, police protection services, schools, and parks. The No Project/No Development Alternative would not increase jobs or increase the need for housing, and therefore would not result in increased demand for public services. Therefore, although the proposed project would not have significant environmental impacts, the No Project/No Development Alternative would have fewer impacts than the proposed project in terms of impacts to public services.

Recreation

Under the No Project/No Development Alternative, the site would be vacant. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development would employ approximately 35 full-time employees, for a maximum of 285 full-time employees all of

whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR. As such, the proposed project is conservatively assumed to result in an increase in residents and employees in the area, which could increase demand for recreational facilities. The No Project/No Development Alternative would not increase jobs or increase the need for housing, and therefore would not result in increased demand for recreational facilities. Therefore, the No Project/No Development Alternative would have fewer impacts compared to the proposed project in terms of recreation impacts.

Transportation

Construction Traffic

Under the No Project/No Development Alternative, there would be no development of the project site and no further grading would occur. Under the proposed project, haul trucks and worker trips associated with project construction would contribute to traffic in the area, and construction of the proposed project would result in more of these trips on a daily basis than a vacant site. While construction traffic for the proposed project is considered to be less than significant, in the absence of construction the No Project/No Development Alternative would have less impact than the proposed project in terms of construction traffic impacts.

Operational Traffic

Under the No Project/No Development Alternative, the site would be vacant. Operation of the proposed project would result in new trips that have significant and unavoidable impacts to multiple intersections. The No Project/No Development Alternative would not generate any trips. Therefore, the No Project/No Development Alternative would have fewer transportation impacts compared to the proposed project in terms of operational traffic impacts.

Vehicle Miles Traveled (Analyzed for Informational Purposes Only)

Under the No Project/No Development Alternative, the site would be vacant. No vehicle trips would be generated. Thus, the impacts for VMT would be less than the proposed project's VMT which is considered significant and unavoidable.

Tribal Cultural Resources

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. Therefore, there would be no potential for impacts to tribal resources. As described in Section 4.14, Tribal Cultural Resources, construction of the proposed project could result in impacts to these resources. Although mitigation measures are proposed (**MM-TCR-1** through **MM-TCR-5**) that would minimize these potential impacts to a less-than-significant level, less than significant impacts to tribal cultural resources on the project site could occur. As the No Project/No Development Alternative would not result in any further grading on the project site, the No Project/No Development Alternative would not have any impacts with respect to Tribal Resources and therefore would have less environmental impact than the proposed project.

Utilities and Service Systems

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. No improvements to the existing utilities would occur, including the construction of new sewer lines, water lines, storm drainage facilities, electric power lines, natural gas lines, or telecommunication lines. As the No Project/No Development Alternative would not result in any further grading on the project site and therefore would not require the development or use of utilities systems, there would be no impacts on utilities and service systems under the No Project/No Development Alternative and this alternative therefore would have less environmental impact than the proposed project with respect to impacts to utilities and service systems.

Urban Decay

Under the No Project/No Development Alternative, the site would be vacant and no further grading would occur. Because no development would occur, there would be no possibility of creating multiple long-term store vacancies or result in the abandonment of multiple buildings within the retail market served by the proposed project or any impacts to the proper utilization of properties or structures, which impairs the health, safety, and welfare of the surrounding community. The proposed project is not anticipated on its own or cumulatively with other projects to have a significant impact with respect to urban decay. However, the No Project/No Development Alternative has fewer impacts than the proposed project in this regard.

Energy

Construction Energy

Under the No Project/No Development Alternative, no grading, off-road construction equipment, haul trucks, vendor trucks, and worker vehicle trips would occur on the project site, and therefore no energy use would be associated with construction. Under the proposed project, construction would occur, and thus would result in the consumption of energy associated with haul trucks, vendor trucks, worker trips, rock crushing, rock popping, blasting, and construction equipment. As the No Project/No Development Alternative would not result in any further construction or grading on the project site and therefore would not require use of utilities systems or petroleum consumption for construction or development of utilities systems for future use, there would be no impacts on utilities systems or petroleum consumption under the No Project/No Development Alternative. Thus, in terms of construction energy use, the No Project/No Development Alternative would have fewer impacts compared to the proposed project.

Operational Energy

Under the No Project/No Development Alternative, the site would remain vacant and therefore would not require use of utilities systems, including consumption of electricity and natural gas for building heating and cooling, lighting, and appliances, including refrigeration, electronics, equipment, and machinery; energy consumption related to water usage, solid waste disposal, and electric vehicle trips. Furthermore, the No Project/No Development Alternative would not generate mobile trips fueled with gasoline, diesel, or alternative fuels. As such, there would be no increase in energy demand under the No Project/No Development Alternative, and the No Project/No Development Alternative is considered to have fewer impacts compared to the proposed project in terms of energy consumption.

Wildfire

Under the No Project/No Development Alternative, the site would remain vacant and no more grading would occur. The project site is surrounded by vacant land to the north, Vista Murrieta High School to the south, existing residential development to the east, and Interstate 215 to the west. The project site is identified by the City's General Plan EIR as occurring within a Very High FHSZ (City of Murrieta 2011), and thus is subject to the regulations regarding wildfire hazards in the Murrieta Municipal Code (Section 15.24) (Exhibit 12-8). The proposed project would introduce new structures and new sources of ignition to the project site, but would reduce fire risk by replacing readily ignitable vegetation with fire resistant structures and landscaping, which would reduce ignitability risk when compared to the existing vacant site. Therefore, the No Project/No Development Alternative would have greater impacts compared to the proposed project in terms of wildfire impacts.

Conclusion

The No Project/No Development Alternative would not include grading, construction, or other development of the project site; therefore, the project site would remain vacant for the foreseeable future. The No Project/No Development Alternative would have more impacts compared to the proposed project in terms of aesthetics and wildfire. The No Project/No Development Alternative would have fewer impacts compared to the proposed project in terms of construction and operational air quality, biological resources, cultural resources, GHG emissions, hazards and hazardous materials, construction and operational noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and energy. The No Project/No Development Alternative would be similar to the proposed project in terms of geology and soils and hydrology and water quality impacts.

Furthermore, in terms of achieving the proposed project objectives, the No Project/No Development Alternative would not provide a mix of retail, restaurant, and anchor tenants which would provide residents with additional shopping, dining, and fueling options in a convenient location, enhance the city with an economically viable development establishing anchored retail required to support new brick and mortar retail in the current on-line oriented retail environment, provide a gasoline fueling station adjacent to major roadways and the regional highway system, generate additional revenues to the City in the form of increased sales and property tax revenues, create jobs to improve the city's jobs-housing imbalance, or design a project that is consistent with the City's General Plan and Zoning Ordinance. Therefore, the No Project/No Development Alternative would accomplish none of the proposed project objectives.

6.3.2 Alternative 2: Reduced Project/Reduced Vineyard II Development Alternative

The reduced project under this alternative would have a 153,362-square-foot Costco warehouse, but the retail development would be reduced by 37,000 square feet (minus the fitness center). This reduces the development footprint from 225,362 square feet to 188,362 square feet, a 16% reduction in project size. The pad that would remain undeveloped would remain unpaved with sandbags for erosion control and a soil stabilizer for dust control.

Analysis

Aesthetics

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project. The proposed project and Alternative 2 would enhance the appearance of the area by redeveloping the site with a new retail shopping center, which would be compatible with the surrounding area. Both the proposed project and Alternative 2 would introduce new sources of lighting to the area, but slightly less lighting than Alternative 1. The fitness center would not be developed under this alternative, and thus, the fitness center building would not block parking lot lighting from nearby residences. Therefore this alternative, while it might have less overall lighting, could have a greater lighting impact to nearby residences by providing a “window” into the center by which night lighting would be visible. Therefore, Alternative 2 would be considered less appealing compared to the proposed project and would have greater impacts with regard to aesthetics.

Air Quality

Construction Emissions

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project; thus, construction activities for the retail development would be reduced as compared to the proposed project. Construction criteria air pollutant emissions would be less than the proposed project. However, similar to the proposed project, it is likely that emissions associated with Alternative 2 construction would exceed NO_x thresholds, and mitigation would be required to reduce this impact to less than significant. Further, under Alternative 2, as with the proposed project, the maximum daily construction-generated on-site emissions would exceed the SCAQMD localized significant thresholds for PM₁₀ and PM_{2.5} emissions and PM₁₀ and PM_{2.5} emissions would be significant and unavoidable with implementation of **MM-AQ/GHG-1**. These impacts would be similar to the proposed project, although slightly reduced. Thus, in terms of construction air pollutant emissions, Alternative 2 would result in slightly less emissions than the proposed project, but with similar impacts as the proposed project.

Operational Emissions

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project. Under both Alternative 2 and the proposed project, operational criteria air pollutant emissions would occur on the project site from customer, employee, and delivery trips; fueling operations; area sources, including consumer products, architectural coating for repainting, and landscape maintenance equipment; compressed natural gas forklifts; and energy sources. As shown in Table 4.2-7 of this EIR, the implementation of the proposed project would result in criteria air pollutant emissions that exceed the SCAQMD thresholds for VOC and NO_x, primarily due to mobile emissions, and thus, the proposed project impacts would be significant and unavoidable with implementation of **MM-AQ/GHG-2**. Alternative 2 would result in less retail development, which would result in reduced emissions from area, energy, and mobile sources. The mobile trips on the Vineyard II site would be reduced from 4,404 to 2,938 daily trips, and while conservatively assuming area, energy, and forklift emissions would remain the same, the total NO_x emissions generated by Alternative 2 would be reduced to 55.11 pounds per day (lb/day) and VOC emissions would be reduced to 73.93 lb/day. Even with implementation of **MM-AQ/GHG-2**, Alternative 2 would still result in emissions that would exceed the NO_x and VOC significance thresholds, although to a lesser extent than the proposed project. Therefore, Alternative 2 would result in a similar impact compared to the proposed project with regard to operational emissions impacts.

Biological Resources

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. As described in Section 4.3 of this EIR, construction of the proposed project could result in indirect impacts to special-status plants, special-status wildlife species, nesting birds, and burrowing owl. Therefore, mitigation is proposed, which would minimize impacts to a less-than-significant level. Although Alternative 2 would result in slightly less site disturbance during construction, it could also result in indirect impacts to special-status plants, special-status wildlife species, nesting birds, and burrowing owl. As with the proposed project, mitigation measures proposed (**MM-BIO-1**, General Avoidance and Minimization Measures, **MM-BIO-2**, Burrowing Owl Pre-Construction Survey, and **MM-BIO-3**, Pre-Construction Nesting Bird Survey, if construction occurs during the nesting season, and **MM-BIO-4**, Implementation of Urban/Wildlands Interface Guidelines) would minimize impacts to a less-than-significant level. Therefore, Alternative 2 would have similar biological resources impacts to the proposed project.

Cultural Resources

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. However, although one pad would not be developed under Alternative 2, site grading would remain the same under both the proposed project and Alternative 2. In each case there would be potential to uncover cultural resources as part of grading for the proposed project. Under the proposed project, impacts to archaeological and/or cultural resources require mitigation, which would also be required for Alternative 2. Although mitigation measures (**MM-TCR-1** through **MM-TCR-5**) are proposed that would minimize these potential impacts to a less-than-significant level, less-than-significant impacts to cultural resources on the project site could occur under Alternative 2 as well as under the proposed project. Therefore, Alternative 2 would have similar cultural resources impacts to the proposed project.

Geology and Soils

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. Excavations and grading for the proposed project would result in disturbance of existing sediments, such that erosion could be exacerbated during precipitation or high-wind events. As with the proposed project, grading and construction would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. At operation, the site would be graded and paved, greatly reducing the possibility for soil erosion or loss of topsoil compared to current conditions. Both the proposed project and Alternative 2 would have less-than-significant impacts with respect to geology and soils. Therefore, Alternative 2 would have similar geology and soils impacts compared to the proposed project.

Greenhouse Gas Emissions

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project. With the reduction in the scope of construction, GHG emissions would be less for Alternative 2 than the proposed project. Under both Alternative 2 and the proposed project, GHG emissions would be generated during operations. Alternative 2 would result in less building development, which would result in less area source, energy use, solid waste disposal, and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment, and mobile trips to

the project site. The mobile trips on the Vineyard II site would be reduced to 2,938 daily trips, and while conservatively assuming area, energy, waste, water, and forklift emissions would remain the same, the operational emissions generated by Alternative 2, including amortized construction emissions, would be 16,934 metric tons of carbon dioxide equivalent (MT CO₂e) per year, which would be less than the proposed project. Furthermore, Alternative 2 and the proposed project would be consistent with the Scoping Plan, 2016 Regional Transportation Plan/Sustainable Communities Strategy, the City of Murrieta's General Plan, the City of Murrieta's Climate Action Plan, Senate Bill 32, and Executive Order S-3-05. As with the proposed project, Alternative 2 would have less-than-significant impacts with respect to GHG. Because Alternative 2 has a smaller construction footprint and less development, Alternative 2 would be considered to have slightly less GHG emissions impacts when compared to the proposed project, and each would have less-than-significant impacts.

Hazards and Hazardous Materials

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. Construction of the proposed project would involve the transport, use, or disposal of hazardous materials on or off site. These materials would include gasoline, diesel fuel, lubricants, and other petroleum-based products used to operate and maintain construction equipment. The same materials would be required for Alternative 2. Under Alternative 2 and the proposed project, all hazardous materials generated and/or used on the property would be managed in accordance with all relevant federal, state, and local laws. Both the proposed project and Alternative 2 include operation of retail pads, a gas station, a tire installation facility, and associated infrastructure improvements. These facilities would involve the routine handling, transport, use, and disposal of hazardous materials, including cleaning solvents and disinfectants, petroleum-based lubricants, photo-processing chemicals, automobile batteries, detergents, chlorine, bleach, and other chemicals. Therefore, Alternative 2 is considered to have similar impacts compared to the proposed project in terms of hazards and hazardous materials, and each would have less-than-significant impacts.

Hydrology and Water Quality

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. The project site is underlain by granitic bedrock that is not an area of groundwater recharge. The proposed project and Alternative 2 would not interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Under current conditions, substantial soil erosion and loss of topsoil is highly likely due to the disturbed, undeveloped ground surface. Excavations and grading for both the proposed project and Alternative 2 would result in disturbance of existing sediments, such that erosion could be exacerbated during precipitation or high-wind events. Proposed project and Alternative 2 grading and construction would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. Upon implementation of the proposed project, the site would be graded and paved, greatly reducing the possibility for soil erosion or loss of topsoil compared to current conditions. Under Alternative 2, the undeveloped pad would be left as dirt with sandbags to control erosion and application of a soil stabilizer to reduce the potential for dust.

Although the proposed project and Alternative 2 would alter the existing drainage pattern of the site, the proposed project and Alternative 2 are designed to match pre-development drainage conditions as much as possible and would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on

or off site. Therefore, Alternative 2 is considered to have similar impacts compared to the proposed project in terms of hydrology and water quality and each would have less-than-significant impacts.

Noise

Construction Noise

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. Under both the proposed project and Alternative 2, construction noise from the use of construction equipment, such as heavy equipment, haul trucks, and additional worker trips, would occur. For both the proposed project and Alternative 2, mitigation would be required. As with the proposed project, with implementation of mitigation measures (**MM-NOI-1** through **MM-NOI-3**), Alternative 2 would have a less-than-significant impact with respect to construction noise. However, as the total amount of construction would be reduced under Alternative 2 as compared with the proposed project, Alternative 2 is considered to have reduced construction noise impacts compared to the proposed project.

Operational Noise

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. The proposed project and Alternative 2 would both introduce new on-site mechanical noise, parking lot noise, and traffic noise. As with the proposed project, Alternative 2 would have a less-than-significant impact with respect to operational noise. However, as compared with the proposed project, Alternative 2 would have greater operational noise impacts because the fitness center building would not screen the residences to the east from noise from the parking lot. Therefore, Alternative 2 is considered to have greater operational noise impacts compared to the proposed project.

Population and Housing

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development would employ approximately 35 full-time employees, for a maximum of 285 full-time employees, all of whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR. Alternative 2 would require slightly fewer employees as compared to the proposed project and therefore conservatively would be projected to induce a smaller demand for housing. Therefore, although the proposed project would not have significant environmental impacts, Alternative 2 would have fewer impacts than the proposed project in terms of population and housing.

Public Services

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. The proposed project would result in an increase in employees in the area, all of whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR, which would increase demand for fire protection services, police protection services, schools, and parks by employees and future residents. Alternative 2 would require slightly fewer employees as compared to the proposed project, and therefore conservatively would be projected to induce a smaller demand for housing. Therefore, although the proposed project would not have significant environmental impacts, Alternative 2 would have fewer impacts than the proposed project in terms of impacts to public services.

Recreation

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development would employ approximately 35 full-time employees, for a maximum of 285 full-time employees, all of whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR. As such, the proposed project is conservatively assumed to result in an increase in residents and employees in the area, which could increase demand for recreational facilities. As indicated in the EIR, the City's current and ongoing plans for additional parkland, as funded by the City's Development Impact Fee, would offset any increased use of parkland and recreational facilities as a result of the proposed project, and there would be less-than-significant impacts. Alternative 2 would require fewer employees and therefore would reduce the demand for new housing and have less of a demand on parkland and recreational facilities. Therefore, although the proposed project would not have significant environmental impacts, Alternative 2 would have fewer impacts than the proposed project with respect to recreation impacts.

Traffic and Circulation

Construction Traffic

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail construction would be reduced as compared to the proposed project. Under both the proposed project and Alternative 2, haul trucks and worker trips associated with project construction would contribute to traffic in the area, however there would be slightly fewer construction trips to construct Alternative 2. Therefore, while construction traffic for the proposed project and Alternative 2 would each be less than significant, Alternative 2 is considered to have fewer construction traffic impacts than the proposed project.

Operational Traffic

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. Under the proposed project, employee and customer trips associated with project operations would contribute 10,953 daily trips to traffic in the area and would require mitigation. Even with mitigation, the traffic impacts of the proposed project would remain significant and unavoidable. Implementation of Alternative 2 would reduce trips, but would still require mitigation and result in significant and unavoidable impacts. Therefore, Alternative 2 would have fewer impacts than the proposed project in terms of operational traffic impacts, but would not eliminate any significant unavoidable impacts.

Vehicle Miles Traveled

This EIR considers, for informational purposes, the operational traffic impacts of the proposed project utilizing a VMT standard. Because the City has not adopted a threshold of significance for VMT, project impacts and cumulative impacts with respect to VMT are considered significant and unavoidable, even with implementation of **MM-AQ/GHG-2**. Under Alternative 2, VMT would remain significant and unavoidable, as VMT would increase compared to the existing condition. Alternative 2 is similar to the proposed project in terms of VTM impacts.

Tribal Cultural Resources

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. There would be potential to uncover tribal cultural resources as part of both proposed project construction and Alternative 2 construction. Although mitigation measures are proposed that would minimize these potential impacts to a less-than-significant level, less-than-significant impacts to cultural resources on the project site could occur under Alternative 2 as well as under the proposed project. As Alternative 2 would result in similar grading requirements as the proposed project and would employ the same mitigation measures to reduce impacts, Alternative 2 would have similar impacts to the proposed project with regard to impacts to tribal cultural resources.

Utilities and Service Systems

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. Improvements to the existing utilities would occur under Alternative 2, including the construction of new sewer lines, water lines, storm drainage facilities, electric power lines, natural gas lines, and telecommunication lines—as would be required for the proposed project. With a reduced retail component, there would be slightly less wastewater generated, slightly less water demand, less electricity usage, and less natural gas usage. Therefore, Alternative 2 is considered to have similar impacts to the proposed project in terms of construction impacts to utilities and service systems, but less usage during operations; in each case impacts would be less than significant.

Urban Decay

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project. Similar to the proposed project, Alternative 2 would not create multiple long-term store vacancies or result in the abandonment of multiple buildings within the retail market served by the proposed project or any impacts to the proper utilization of properties or structures, which impairs the health, safety, and welfare of the surrounding community. Urban decay impacts under Alternative 2 would be similar to the proposed project and in each case impacts would be less than significant.

Energy

Construction Energy

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project. Construction energy use would be comparable under both the proposed project and Alternative 2, including petroleum consumption from off-road equipment, haul trucks, vendor trucks, and worker vehicle trips. However, a reduced building development would result in reduced off-road equipment use, vendor truck and worker vehicle trips. Therefore, although both the proposed project and Alternative 2 would have less-than-significant impacts with respect to construction energy use, Alternative 2 is considered to have slightly less impact than the proposed project in terms of construction energy consumption.

Operational Energy

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development on the Vineyard II site would be reduced as compared to the proposed project. Both the proposed project and Alternative 2 would generate vehicular trips and would require electricity and natural gas for building heating and cooling, lighting, and appliances, including refrigeration, electronics, equipment, and machinery; energy consumption related to water usage, solid waste disposal, and electric vehicle trips. However, Alternative 2 would incorporate the same project design features even though the development size would be reduced and consumption from electricity and natural gas would be less than the proposed project due to the reduced development. Furthermore, the mobile trips would be reduced by 1,464 daily trips, and thus, the combined Alternative 2 mobile source annual gasoline and diesel consumption from operation would result in 1.64 million gallons and 78,663 gallons, respectively. Therefore, although both the proposed project and Alternative 2 would have less-than-significant impacts with respect to operational energy use, Alternative 2 is considered to have slightly less impact than the proposed project in terms of energy consumption.

Wildfire

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. The project site is surrounded by vacant land to the north, Vista Murrieta High School to the south, existing residential development to the east, and Interstate 215 to the west. The project site is identified by the City's General Plan EIR as occurring within a Very High FHSZ (City of Murrieta 2011), and thus is subject to the regulations regarding wildfire hazards in the Murrieta Municipal Code (Section 15.24) (Exhibit 12-8). However, the project site is located in a predominantly urbanized area. Although the proposed project would not result in wildfire impacts, the proposed project would introduce new structures to the project site, which reduces fire risk by replacing readily ignitable vegetation with fire resistant structures and landscaping when compared to the existing conditions. Alternative 2 would also introduce new structures throughout most of the site and would leave a maintained undeveloped pad on the project site. Therefore, the Alternative 2 would have similar impacts to the proposed project in terms of wildfire, and in each case, impacts would be less than significant.

Conclusion

Under Alternative 2, a 153,362-square-foot Costco warehouse would be constructed, but retail development would be reduced as compared to the proposed project. Alternative 2 would have fewer impacts compared to the proposed project in terms of operational air quality, greenhouse gas emissions, construction noise, population and housing, public services, recreation, construction and operational traffic, utilities and service systems, and energy. Alternative 2 would have similar impacts as to the proposed project in terms of construction air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, tribal cultural resources, urban decay, VMT, and wildfire. Alternative 2 would have greater aesthetic and operational noise impacts than the proposed project. Alternative 2 would reduce but not eliminate any of the significant and unavoidable impacts of the proposed project.

Furthermore, in terms of achieving the proposed project objectives, Alternative 2 would generally still meet the project objectives, which are to provide a mix of retail, restaurant, and anchor tenants which provide residents with additional shopping, dining, and fueling options in a location that is convenient for its customers and employees to travel to shop and work, enhance the City with an economically viable development by establishing anchored retail required to support new brick and mortar retail in the current on-line oriented retail environment, provide a gasoline fueling station adjacent to major roadways and the regional highway system, generate additional revenues to the

City in the form of increased sales and property tax revenues, provide a development in a location that is convenient for its customers and employees to travel to shop and work, create jobs in the City and improve the local job/housing balance, design a project that is consistent with the City's General Plan and Development Code, create a new opportunity for a wide range of integrated retail goods and services to meet the needs of the growing Murrieta community and design a site plan that minimizes circulation conflicts between automobiles and pedestrians. However, Alternative 2 would not contribute to the City's sales tax base and property tax revenues, increase jobs in the City, and expand the opportunity for integrated retail goods and services to the extent that the proposed project would. Additionally, Alternative 2 would not fully utilize the site to the extent that the proposed project would, and in that sense, could not provide as many supporting uses in the retail center, which maximizes the efficiency of the plan. Most importantly, Alternative 2 reduces the project size without eliminating the significant and unavoidable impacts of the proposed project, which means it is not an optimal alternative.

6.3.3 Alternative 3: Reduced Project/No Vineyard II Development Alternative

The reduced project under this alternative would have a Costco warehouse only; no additional retail development would be included as part of the project. This reduces the development footprint from 225,362 square feet to 153,362 square feet, a 32% reduction in size. Only the portion of the site with the Costco, west of Warm Springs Parkway would be paved. The Vineyard II site would remain ungraded and unpaved with sandbags for erosion control and application of a soil stabilizer to control dust emissions.

Analysis

Aesthetics

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed on the west side of Warm Springs Parkway, but the east side of Warm Springs Parkway would remain undeveloped. Both the proposed project and Alternative 3 would enhance the appearance of the area by redeveloping the site with a commercial use, which would be compatible with the surrounding area. Both the proposed project and Alternative 3 would introduce new sources of lighting to the area, but a reduced amount of lighting. Also because this Alternative would leave the portion of the site east of Warm Springs Parkway undeveloped, that side of the site would not be visually enhanced, although this would not be visible from Clinton Keith Road when the Vineyard I development between the Costco and Clinton Keith Road is constructed. Therefore, Alternative 3 would be considered to have greater impacts to the proposed project with regard to aesthetics.

Air Quality

Construction Emissions

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the Vineyard II site. Construction criteria air pollutant emissions associated with Alternative 3 would be less than those associated with the proposed project due to reduced building construction, architectural coating, paving activities, vendor trips, and worker trips. However, emissions associated with the Costco warehouse construction would result in 234.73 lb/day of NO_x emissions, which would exceed SCAQMD threshold, because haul truck trips, rock crushing, rock popping activities, and grading would still need to occur throughout the site. **MM-AQ/GHG-1** would be applied to both the proposed project and Alternative 3 and would reduce impacts associated with NO_x such that all construction emissions would be at less-than-significant levels. Furthermore, both

Alternative 3 and the proposed project would exceed the on-site maximum daily PM₁₀ and PM_{2.5} localized significance thresholds even after imposition of **MM-AQ/GHG-1**; this impact is considered significant and unavoidable under both the proposed project and Alternative 3. Thus, in terms of construction air pollutant emissions, Alternative 3 would reduce impacts as compared to the proposed project, but would still result in significant and unavoidable impacts with respect to localized daily emissions of PM₁₀ and PM_{2.5}.

Operational Emissions

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the Vineyard II site. Under both Alternative 3 and the proposed project, operational criteria air pollutant emissions would occur on the project site, however, Alternative 3 would result in reduced emissions from mobile sources, including customer, employee, and delivery trips; area sources, including consumer products, architectural coating for repainting, and landscape maintenance equipment; compressed natural gas forklifts; and energy sources. As shown in Table 4.2-7 of this EIR, the implementation of the proposed project would result in criteria air pollutant emissions that exceed the SCAQMD thresholds for VOC and NO_x, primarily due to mobile emissions, and thus, the proposed project impacts would be significant and unavoidable with implementation of **MM-AQ/GHG-2**. Alternative 3 would result in less building development and fewer mobile trips to the project site and therefore less VOC and NO_x emissions. In particular, development under Alternative 3 would generate NO_x emissions of 43.19 lb/day and VOC emissions of 68.41 lb/day. Thus, while VOC emissions would still exceed significance thresholds, the NO_x emissions would be below the threshold of significance established by SCAQMD and would be less than significant. Under Alternative 3, the Vineyard II site would remain ungraded and unpaved, and the site could potentially generate fugitive dust (PM₁₀ and PM_{2.5}) from wind erosion; however, dust control measures would be implemented, as required by the SCAQMD Rule 403, and PM₁₀ and PM_{2.5} emissions would not likely exceed the SCAQMD thresholds. Therefore, Alternative 3 would eliminate the proposed project's significant unavoidable impact with respect to operational NO_x emissions, and would reduce but not eliminate the proposed project's significant and unavoidable impacts with respect to VOCs. As such, Alternative 3 would have less impact than the proposed project with regard to operational emissions impacts.

Biological Resources

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. As described in Section 4.3 of this EIR, construction of the proposed project could result in indirect impacts to special-status plants, special-status wildlife species, nesting birds, and burrowing owl. Therefore, mitigation is proposed, which would minimize impacts to a less-than-significant level. Because soil would need to be stockpiled on the Vineyard II site during construction of Costco and Warm Springs Parkway, Alternative 3 could also result in indirect impacts to special-status plants, special-status wildlife species, nesting birds, and burrowing owl. As with the proposed project, mitigation measures proposed (**MM-BIO-1**, General Avoidance and Minimization Measures, **MM-BIO-2**, Burrowing Owl Pre-Construction Survey, and **MM-BIO-3**, Pre-Construction Nesting Bird Survey, if construction occurs during the nesting season, and **MM-BIO-4**, Implementation of Urban/Wildlands Interface Guidelines) would minimize impacts to a less-than-significant level. Therefore, Alternative 3 would have similar biological resources impacts to the proposed project.

Cultural Resources

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. As such, although there would be potential to uncover cultural resources as part of construction of Alternative 3, it would be reduced as compared with impacts to the

proposed project because a substantial portion of the project site would not be developed. Under the proposed project, impacts to archaeological and/or cultural resources would be mitigated to a less-than-significant level with imposition of mitigation measures (MM-TCR-1 through MM-TCR-5). These mitigation measures would also be imposed for Alternative 3 and likewise would reduce impacts to a less-than-significant level. However, there would be less ground disturbance with Alternative 3, and therefore, Alternative 3 would have fewer impacts to the proposed project with regard to cultural resources.

Geology and Soils

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. With respect to the west side of Warm Spring Parkway, impacts would be the same as the proposed project, in that excavations and grading would result in disturbance of existing sediments, with the potential for erosion to be exacerbated during precipitation or high-wind events. Grading and construction for this portion of the site would be the same for the proposed project and Alternative 3 and would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. Upon implementation, this portion of the site would be graded and paved, greatly reducing the possibility for soil erosion or loss of topsoil compared to current conditions.

With respect to the eastern portion of the site, under Alternative 3 no grading or construction would take place. However, despite the lack of additional grading, this portion of the site would have similar environmental impacts as the proposed project because NPDES applies to the former sand and gravel permit operations and BMPs would be required to be implemented on the site. Implementation of BMPs would reduce impacts of Alternative 3 to a less-than-significant level. Thus, the proposed project and Alternative 3 would have similar impacts to the proposed project with regard to geology and soils and both would be less than significant.

Greenhouse Gas Emissions

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the Vineyard II site. Construction GHG emissions would be less than those under the proposed project due to reduced building construction, paving activities, vendor trips, and worker trips. Thus, construction of the Costco warehouse would result in 1,495 MT CO₂e over the construction period, which would be less than the proposed project. Under both Alternative 3 and the proposed project, GHG emissions would be generated during operations. Alternative 3 would result in less building development, which would result in less energy use, solid waste disposal; less generation of electricity associated with water supply, treatment, and distribution and wastewater treatment; and fewer mobile trips to the project site. Alternative 3 would result in project-generated operational emissions, including amortized construction emissions, of 13,143 MT CO₂e per year, which would be less than the proposed project. Furthermore, Alternative 3 and the proposed project would be consistent with the Scoping Plan, 2016 Regional Transportation Plan/Sustainable Communities Strategy, the City of Murrieta's General Plan, the City of Murrieta's Climate Action Plan, Senate Bill 32, and Executive Order S-3-05. Therefore, impacts of Alternative 3 would be considered slightly less than those of the proposed project with regard to GHG emissions impacts.

Hazards and Hazardous Materials

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Construction of the proposed project would involve the transport, use, or disposal of hazardous materials on or off-site. These materials would include gasoline, diesel fuel, lubricants, and other petroleum-based products used to operate and maintain construction equipment. The same

materials would be required for Alternative 3. Under both Alternative 3 and the proposed project, all hazardous materials generated and/or used on the property would be managed in accordance with all relevant federal, state, and local laws. Both the proposed project and Alternative 3 include operation of a gas station, a tire installation facility, and associated infrastructure improvements. These facilities would involve the routine handling, transport, use, and disposal of hazardous materials, including cleaning solvents and disinfectants, petroleum-based lubricants, photo-processing chemicals, automobile batteries, detergents, chlorine, bleach, and other chemicals. Therefore, Alternative 3 is considered to have similar impacts compared to the proposed project in terms of hazards and hazardous materials and each would be less than significant.

Hydrology and Water Quality

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. The project site is underlain by granitic bedrock that is not an area of groundwater recharge. Both the proposed project and Alternative 3 would not interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.

Under current conditions, substantial soil erosion and loss of topsoil is highly likely due to the disturbed, undeveloped ground surface. Excavations and grading for both the proposed project and Alternative 3 would result in disturbance of existing sediments, such that erosion could be exacerbated during precipitation or high-wind events. Grading and construction associated with the proposed project and the west side of the project site under Alternative 3 would be completed in accordance with an NPDES-mandated SWPPP, which would include standard BMPs to reduce potential off-site water quality impacts related to erosion and incidental spills of petroleum products and hazardous substances from equipment. Upon implementation of either the proposed project or Alternative 3, the site would be graded and paved, greatly reducing the possibility for soil erosion or loss of topsoil compared to current conditions. The property on the east side of Warm Springs Road would not be graded or developed under Alternative 3 and substantial erosion and loss of topsoil could result. NPDES would apply to the former sand and gravel permit operations, and BMPs would be required to be implemented on the site. Implementation of BMPs would reduce impacts of Alternative 3 to a less-than-significant level. Therefore, neither the proposed project nor Alternative 3 would have significant environmental impacts, and Alternative 3 would have similar environmental impacts as the proposed project with regard to hydrology and water quality.

Based on a project-specific drainage analyses, the proposed project would result in a decrease of unmitigated 100-year runoff flow rates compared to pre-developed project conditions for the western, Costco portion of the project site. Although both the proposed project and Alternative 3 would alter the existing drainage pattern of the site, they have been designed to follow pre-development drainage patterns and, neither would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. Therefore, Alternative 3 is considered to have similar impacts compared to the proposed project in terms of hydrology and water quality.

Noise

Construction Noise

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Under both the proposed project and Alternative 3, construction noise from the use of construction equipment, such as heavy equipment, haul trucks, and additional worker trips, would occur. For the proposed project, mitigation would be required. However, assuming the Costco

under Alternative 3 would be constructed in the same location as it would be under the proposed project (i.e., farther from residential areas to the east), construction noise impacts would be avoided and mitigation would not be required. Therefore, Alternative 3 has fewer impacts than the proposed project in terms of construction noise.

Operational Noise

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Both the proposed project and Alternative 3 would introduce new on-site mechanical noise, parking lot noise, and traffic noise; however, there would be no retail stores in the eastern portion of the project site (near residential areas) under Alternative 3, and the Costco warehouse would be located in the western portion of the site (farther from existing residences). Because the retail development under the proposed project would screen the residences to the east from operational noise on site (parking lot) and from traffic on Warm Springs Parkway, Alternative 3 would have greater operational noise impacts than the proposed project.

Population and Housing

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development under the proposed project would employ approximately 35 full-time employees, for a maximum of 285 full-time employees. Alternative 3 would require 35 fewer employees as compared to the proposed project and therefore conservatively would be projected to induce a smaller demand for housing. Although neither the proposed project nor Alternative 3 would result in significant environmental impacts, Alternative 3 would have fewer impacts than the proposed project in terms of population and housing.

Public Services

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. The proposed project would result in an increase in employees in the area, all of whom are conservatively assumed to move to the City in the analysis of the project in this EIR, which would increase demand for fire protection services, police protection services, schools, and parks. Alternative 3 would require 35 fewer employees as compared to the proposed project. Therefore, although neither the proposed project nor Alternative 3 would result in significant environmental impacts, Alternative 3 would have fewer impacts than the proposed project in terms of public services.

Recreation

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. It is anticipated that the proposed project would employ approximately 250 full-time employees, while the fitness center, restaurants, and retail development would employ approximately 35 full-time employees, for a maximum of 285 full-time employees, all of whom are conservatively assumed to move to the City in the analysis of the proposed project in this EIR. As such, the proposed project is conservatively assumed to result in an increase in residents and employees in the area, which could increase demand for recreational facilities. As indicated in the EIR, the City's current and ongoing plans for additional parkland, as funded by the City's Development Impact Fee, would offset any increased use of parkland and recreational facilities as a result of the proposed project, and impacts would be less than significant. Alternative 3 would require 35 fewer employees as compared to the proposed project, and therefore would reduce the demand

for new housing and thus the demand for parkland and recreational facilities as compared to the proposed project, Therefore, although neither the proposed project nor Alternative 3 would have significant environmental impacts, Alternative 3 would have fewer impacts than the proposed project with respect to recreation impacts.

Traffic and Circulation

Construction Traffic

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Under both the proposed project and Alternative 3, haul trucks and worker trips associated with project construction would contribute to traffic in the area, but there would be fewer construction truck and worker trips. Therefore, Alternative 3 would have fewer construction traffic impacts than the proposed project.

Operational Traffic

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Under the proposed project, employee and customer trips associated with project operations would contribute 8,378 daily trips to traffic in the area and would require mitigation. Even with mitigation, the traffic impacts of the proposed project would remain significant and unavoidable. Implementation of Alternative 3 would result in 8,378 daily trips, but because of the volume of trips, Alternative 3 would still require mitigation and result in significant and unavoidable impacts. Therefore, Alternative 3 would have fewer operational traffic impacts than the proposed project, but implementation of Alternative 3 would not eliminate any significant and unavoidable impacts.

Vehicle Miles Traveled

This EIR considers, for informational purposes, the operational traffic impacts of the project utilizing a VMT standard. Because the City has not adopted a threshold of significance for VMT, project impacts and cumulative impacts with respect to VMT are considered significant and unavoidable, even with implementation of **MM-AQ/GHG-2**. Under Alternative 3, VMT would remain significant and unavoidable, as VMT would increase compared to the existing condition. Alternative 3 is similar to the proposed project in terms of VTM impacts.

Tribal Cultural Resources

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. There would be potential to uncover tribal cultural resources as part of both proposed project construction and Alternative 3 construction. Where grading would take place, Alternative 3 would result in similar grading as the proposed project and would employ the same mitigation measures (**MM-TCR-1** through **MM-TCR-5**) as the proposed project to reduce impacts to a less-than-significant level. However, as there would be less ground disturbance with Alternative 3, Alternative 3 would have fewer impacts than the proposed project with regard to tribal cultural resources.

Utilities and Service Systems

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Improvements to the existing utilities would occur under Alternative 3—including the construction of new sewer lines, water lines, storm drainage facilities, electric power

lines, natural gas lines, and telecommunication lines—as would be required for the proposed project. Without the retail component, there would be less wastewater generated, less water demand, less electricity usage, and less natural gas usage. Therefore, Alternative 3 would have fewer operational impacts than the proposed project in terms of impacts to utilities and service systems.

Urban Decay

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, and no retail development would be constructed east of Warm Springs Parkway. Similar to the proposed project, Alternative 3 would not create multiple long-term store vacancies or result in the abandonment of multiple buildings within the retail market served by the proposed project or any impacts to the proper utilization of properties or structures, which impairs the health, safety, and welfare of the surrounding community. Urban decay impacts under Alternative 3 would be similar to the proposed project.

Energy

Construction Energy

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. As with the proposed project, construction would require energy use. Petroleum consumption from off-road equipment, haul trucks, vendor trucks, and worker vehicle trips would be required for construction of Alternative 3. However, a reduced building development under Alternative 3 would result in reduced petroleum consumption and other energy use from off-road equipment, haul trucks, vendor trucks, and worker vehicle trips. Therefore, although both the proposed project and Alternative 3 would have less-than-significant impacts with respect to construction energy use, Alternative 3 is considered to have slightly less impact than the proposed project in terms of construction energy consumption.

Operational Energy

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Both the proposed project and Alternative 3 would generate vehicular trips and would require electricity and natural gas for building heating and cooling, lighting, and appliances, including refrigeration, electronics, equipment, and machinery; energy consumption related to water usage, solid waste disposal, and electric vehicle trips. However, Alternative 3 consumption from electricity and natural gas would be less than the proposed project due to no development on the Vineyard II site. Further, the 4,402 daily mobile trips from employees, customers, and deliveries on the Vineyard II site would no longer occur, and thus, the Alternative 3 mobile source annual gasoline and diesel consumption from operation would be reduced to 1.31 million gallons and 69,673 gallons, respectively. Therefore, although both the proposed project and Alternative 3 would have less-than-significant impacts with respect to operational energy use, Alternative 3 is considered to have less impact than the proposed project in terms of energy consumption.

Wildfire

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. The project site is surrounded by vacant land to the north, Vista Murrieta High School to the south, existing residential development to the east, and Interstate 215 to the west. The project site is identified by the City's General Plan EIR as occurring within a Very High FHSZ (City of Murrieta 2011), and thus is subject to the regulations regarding wildfire hazards in the Murrieta Municipal Code

(Section 15.24) (Exhibit 12-8). However, the project site is located in a predominantly urbanized area. Although the proposed project would not result in wildfire impacts, the proposed project reduces fire risk by replacing readily ignitable vegetation with fire resistant structures and landscaping. Alternative 3 would also introduce new structures to the site and would reduce fire risk by replacing readily ignitable vegetation with fire resistant structures and landscaping. Even though the area east of Warm Springs Parkway would remain vacant and ungraded, it would be sprayed with a soil stabilizer that would slightly inhibit the ability for weeds to grow, but would not substantially reduce the fire risk to the homes to the east. Therefore, Alternative 3 is considered to have greater impacts to the proposed project in terms of wildfire.

Conclusion

Under Alternative 3, a 153,362-square-foot Costco warehouse would be constructed, but there would be no retail development on the east side of Warm Springs Parkway. Alternative 3 would have fewer impacts compared to the proposed project in terms of construction and operational air quality, cultural resources, greenhouse gas emissions, construction noise, population and housing, public services, recreation, construction and operational traffic, tribal cultural resources, utilities and service systems, and energy. In particular, Alternative 3 would reduce operational NO_x emissions to a less-than-significant level and would reduce other operational impacts from traffic and VOCs, although these would remain significant and unavoidable. Alternative 3 would have similar impacts to the proposed project in terms of biological resources, geology and soils, hazards and hazardous materials, hydrology and water quality, urban decay, and VMT. It would have greater impacts in terms of aesthetics, operational noise impacts, and wildfire.

Furthermore, in terms of achieving the proposed project objectives, Alternative 3 would generate additional revenues to the City's in the form of increased sales and property tax revenues, enhance the City with an economically viable development by establishing anchored retail required to support new brick and mortar retail in the current online-oriented retail environment, increase the number of jobs in the City, provide a gasoline fueling station adjacent to major roadways and the regional highway system, design a project that is consistent with the City's General Plan and Development Code, and design a site plan that minimizes circulation conflicts between automobiles and pedestrians. However, Alternative 3 would not provide a mix of retail, restaurant, and anchor tenants that would provide residents with additional shopping, dining, and fueling options in a location that is convenient for its customers and employees to travel to shop and work or create a new opportunity for a wide range of integrated retail goods and services to meet the needs of the growing Murrieta community. Additionally, Alternative 3 would result in less sales and property tax revenue than the proposed project, would not fully utilize the site to the extent that the proposed project would, and would still result in significant and unavoidable construction and operational air quality and operational traffic impacts.

6.4 Environmentally Superior Alternative

An EIR must identify an “environmentally superior” alternative; and, where the no project alternative is environmentally superior, the EIR is then required to identify an alternative from among the others evaluated as environmentally superior (14 CCR 15126.6[e][2]).

In this case, Alternative 1, No Project/No Development, is the environmentally superior alternative because it reduces air quality, biological resources, cultural resources, GHG emissions, hazards and hazardous materials, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and energy impacts and eliminates significant and unavoidable operational air quality impacts and traffic impacts. However, as noted above, where the no project alternative is the environmentally superior alternative, CEQA requires that a lead agency identify a second alternative as the environmentally superior

alternative (14 CCR 15126.6[e][2]). The environmentally superior alternative is Alternative 3, because it reduces the proposed project's impacts with respect to construction and operational air quality, cultural resources, GHG emissions, construction noise, population and housing, public services, recreation, construction and operational traffic, tribal cultural resources, utilities and service systems, and energy. However, as with the proposed project, Alternative 3 would still result in significant and unavoidable impacts to construction and operational air quality (VOCs) and operational traffic, although it would reduce the level of significant impact of each. Alternative 3 would also reduce the operational air quality impacts of NO_x to a less-than-significant level. As indicated above, Alternative 3 would not meet several of the project objectives and would result in less sales tax and property tax revenue to the City than would the proposed project.

Table 6-1 shows the comparison of alternatives by resource area and determines the total impacts that are environmentally superior to the proposed project.

Table 6-1. Comparison of Alternatives

Impact	Alternative 1: No Project/No Development	Alternative 2: Reduced Project/Reduced Vineyard II Development	Alternative 3: Reduced Project/No Vineyard II Development
Aesthetics	-1	-1	-1
Air Quality – Construction	+1	0	+1
Air Quality – Operation	+1	+1	+1
Biological Resources	+1	0	0
Cultural Resources	+1	0	+1
Geology and Soils	0	0	0
Greenhouse Gas Emissions	+1	+1	+1
Hazards and Hazardous Materials	+1	0	0
Hydrology and Water Quality	0	0	0
Noise – Construction	+1	+1	+1
Noise – Operation	+1	-1	-1
Population and Housing	+1	+1	+1
Public Services	+1	+1	+1
Recreation	+1	+1	+1
Transportation - Construction	+1	+1	+1
Transportation- Operations	+1	+1	+1
VMT	+1	0	0
Tribal Cultural Resources	+1	0	+1
Urban Decay	+1	0	0
Utilities and Service Systems	+1	+1	+1
Energy	+1	+1	+1
Wildfire	-1	0	-1
Total (fewer impacts only)	18	10	13
Eliminates a Significant Impact of the Proposed Project?	Yes (air quality construction and operation and transportation operations)	No	Yes (operational air quality NO _x emissions)

Notes: 0 = environmentally similar; -1 = more impacts; +1 = fewer impacts.

Bold indicates environmental resource categories where the proposed project would result in a significant and unavoidable impact following implementation of all feasible mitigation.

6.5 References Cited

City of Murrieta. 2011a. *City of Murrieta General Plan 2035 Final Environmental Impact Report, Section 5.17, Fire Protection*. SCH no. 2010111084. Prepared by RBF Consulting. Irvine, California: RBF Consulting. July 2011. <https://www.murrietaca.gov/civicax/filebank/blobdload.aspx?BlobID=5204>.

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