Appendix 4.12-6 Review of Traffic Volumes for Rivercrest Park

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Technical Memorandum

To:	City of Redding	**Date:**	December 22, 2017
Attn:	Mr. Kent Manual	**Project:**	River Crossing Marketplace Specific Plan
From:	Mr. Russell Wenham, PE, TE, PTOE Ms. Carole Wigno		
Re:	Review of Traffic Volumes for Rivercrest Park	**Job No.:**	25-1809-01
		File No.:	C2226MEM011
CC:	Ms. Lily Toy		

Introduction

This technical memorandum has been prepared to determine the effects of the traffic generated by Rivercrest Park on the project site. Rivercrest Park is located on Chinook Drive between Rivercrest Parkway, to the south, and Woodacre Drive, to the north.

Figure 1
Rivercrest Park

Public opinion expressed at the Public EIR Scoping Meeting suggested that the number of trips generated by the park, especially on Saturdays, qualified it as a regional park with significant effect on traffic on Bechelli Lane and should therefore be included in the project traffic analysis.

Omni-Means staff observed the park on Saturday, July 1, 2017 and Saturday, July 8, 2017, between 11:00 am and 2:00 pm. The weather was clear both days. However, the temperature was high (>100° F) and it was summer vacation, both of which could potentially lower

attendance levels of the park. An additional day, September 16, 2017, was selected to supplement the July observations. During this observation the weather was cool (~75° F) with light cloud cover and attendance was greater.

Access to the park is available only from the intersection of Chinook Drive and Bechelli Lane and the intersection of Rivercrest Parkway and Bechelli Lane. These intersections are also the only means of access for Rivercrest Estates and the Woodacre Subdivision. For the purposes of analysis, it was assumed that traffic arriving from or departing to the south of the park used the Chinook Drive intersection and that traffic arriving from or departing to the north used the Rivercrest Parkway intersection.

Recent Observations

Two days in July were selected to observe trips arriving and departing from Rivercrest Park. Trips were counted from 11:00 am-2:00 pm and the results are displayed in Table 1. Only cars whose passengers were observed going to the park were counted.

Table 1
Rivercrest Park Arriving and Departing Trips from 11:00 am-2:00 pm

Observation Date	Chinook Drive	Woodacre Drive	Total
7-1-17	2	2	4
7-8-17	1	1	2

An additional observation day was chosen in September because seasonal factors may have reduced traffic volumes in July. The observed arriving and departing trips are presented in Table 2. The trip counts are shown by the hour with the peak hour occurring from 12:30-1:30 pm.

Table 2
Rivercrest Park Arriving and Departing Trips on 9-16-17

	Chinook Drive	Woodacre Drive	Total
11:00 am-12:00 pm	21	3	24
12:00 pm-1:00 pm	15	2	17
1:00pm-2:00pm	17	3	20
Peak Hour 12:30 pm-1:30 pm	27	4	31

Previous Observations

Previous traffic volume counts were conducted on Saturday September 10, 2016 at the intersection of Chinook Drive and Bechelli Lane and the intersection of Rivercrest Parkway and Bechelli Lane. The volumes entering and exiting these roads from Bechelli Lane are presented in Table 3.

Table 3
Traffic Entering/Exiting from Bechelli Lane

Observation Date	Chinook Drive	Rivercrest Parkway	Total
9-10-16	40	77	117

Analysis

To analyze a worst-case scenario that included traffic for Rivercrest Park, the Saturday peak hour traffic volume of 31 vehicles was added to the 2016 count volumes for calculation of delay and LOS at the Chinook Drive/Bechelli Lane intersection and the Rivercrest Parkway/Bechelli Lane intersection. The 31 vehicles were split 25% left in, 25% right out at Rivercrest, and 25% left in, 25% right out at Chinook. All 31 vehicles came from the North. In addition the intersection at Bechelli and Loma Vista was analyzed with an additional 31 vehicles added to both the northbound through and southbound through directions. Analysis was conducted with the additional park volumes and compared to the volumes for Existing Plus Project, 2020 Plus Project, and 2040 Plus Project for Saturday Peak Hour. The target LOS for all intersections is C. The results are shown in the tables below.

Table 4
Existing Plus Project Conditions

#	Intersection	Control Type[1,2]	Target LOS	Saturday Peak Hour		
				Delay	LOS	Warrant Met?[3]
19	Bechelli Ln/ Chinook Dr	TWSC	C	11.0	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	10.7	B	-
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	13.9	B	-

Table 5
Existing Plus Project Plus Park Conditions

#	Intersection	Control Type[1,2]	Target LOS	Saturday Peak Hour		
				Delay	LOS	Warrant Met?[3]
19	Bechelli Ln/ Chinook Dr	TWSC	C	11.1	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	10.8	B	-
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	15.0	B	-

Table 6
Year 2020 Plus Project Conditions

#	Intersection	Control Type[1,2]	Target LOS	Saturday Peak Hour		
				Delay	LOS	Warrant Met?[3]
19	Bechelli Ln/ Chinook Dr	TWSC	C	11.2	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	11.2	B	-
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	15.5	C	-

Table 7
Year 2020 Plus Project Plus Park Conditions

#	Intersection	Control Type[1,2]	Target LOS	Saturday Peak Hour		
				Delay	LOS	Warrant Met?[3]
19	Bechelli Ln/ Chinook Dr	TWSC	C	11.4	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	11.4	B	-
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	16.8	C	-

Table 8
Year 2040 Plus Project Conditions

#	Intersection	Control Type[1,2]	Target LOS	Saturday Peak Hour		
				Delay	LOS	Warrant Met?[3]
19	Bechelli Ln/ Chinook Dr	TWSC	C	12.9	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	12.1	B	-
21	Bechelli Ln/ Loma Vista Dr	TWSC	C	24.0	C	-

Table 9
Year 2040 Plus Project Plus Park Conditions

#	Intersection	Control Type[1,2]	Target LOS	Saturday Peak Hour		
				Delay	LOS	Warrant Met?[3]
19	Bechelli Ln/ Chinook Dr	TWSC	C	13.0	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	12.4	B	-
21	**Bechelli Ln/ Loma Vista Dr**	**TWSC**	**C**	**27.5**	**D**	-

Notes:
1. *TWSC = Two Way Stop Control*
2. *LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for Signal*
3. *Warrant = Based on California MUTCD Warrant 3*

Conclusion

The addition of the park traffic volumes to the Chinook Drive/Bechelli Lane and Rivercrest Parkway/ Bechelli Lane intersections does not significantly increase delay or reduce the LOS for any of the conditions analyzed.

The LOS of the intersection of Bechelli Lane and Loma Vista Drive decreases from C for 2040 Plus Project to D for 2040 Plus Park Plus Project and the delay increases from 24.0 to 27.5. However, due to previous analysis this intersection had already triggered improvement for the 2040 Plus Project condition due to the Weekday AM(PM) Peak Hour Delay of 116.9(OVR) and LOS F(F).

The current recommendation for the intersection of Bechelli Lane and Loma Vista Drive for the 2040 Plus Project condition is to construct a traffic signal with split phasing for the eastbound and westbound approaches, and protected left turn movements on northbound and southbound approaches or to construct a 4-leg, single-lane roundabout. The additional Saturday traffic from the Park does not warrant more extensive improvements.

The traffic from the park, if not already included in the 2016 counts, is not enough to warrant improvements to any intersections within the scope of this project. No further action is recommended.

Appendices

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