

Appendix 4.12-7 RM10 Buildout Analysis

Technical Memorandum No. 4

To: City of Redding **Date:** June 15, 2018
Attn: Kent Manual **Project:** River Crossing Marketplace Specific Plan (Costco Wholesale Development)
From: Russ Wenham, P.E., T.E.
 Kamesh Vedula, P.E., T.E.
Re: Full RM-10 Development (South of Rivercrest Subdivision) – Impact Assessment **Job No.:** 11145014
File No.: C2226MEM028
CC: Zach Stinger, E.I.T.

Introduction

Omni-Means, a GHD Company, prepared this memorandum to present the trip generation analysis and impacts to the Rivercrest Parkway and Chinook Drive intersections, with Bechelli Lane, from the zoned RM-10 residential development that may occur on vacant land southerly of the south end of Rivercrest Parkway. The Rivercrest area is zoned as RM-10. City staff indicated that the highest number of dwelling units that can be developed will be 121 new multifamily dwelling units.

Trip Generation

The following trip generation calculation was prepared using a 121 dwelling unit development. The source used to estimate vehicular trips generated at the RM-10 zoning area is the Institute of Transportation Engineers (ITE) Publication *Trip Generation Manual 10th Edition*. Table 1 presents the RM-10 zoning area trip generation.

**TABLE 1
RM-10 ZONING AREA TRIP GENERATION**

Land Use Category (ITE Code)	Unit ¹	Daily Trip Rate/Unit ²	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Multifamily Housing (Low-Rise) (220)	DU	7.22	0.47	50%	50%	0.58	63%	37%
Project Name	Quantity (Units)	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
RM-10 Zoning Area	121	874	57	29	29	70	44	26
Net New Project Trips		874	57	29	29	70	44	26

Notes:

1. DU = dwelling unit

2. Trip rates based on ITE Trip Generation Manual 10th edition fitted-curve equations or average rates

As presented in Table 1, the trip generation for the proposed RM-10 zoning area is expected to result in 57 AM peak hour trips and 70 PM peak hour trips. To present a worst-case impact analysis (in the context of the existing Rivercrest subdivision area) all RM-10 zoning area trips are assumed to enter and exit the development via Chinook Drive and Rivercrest Parkway.

Therefore, an additional 57 AM peak hour trips and 70 PM peak hour trips can be expected to occur on Rivercrest Parkway and Chinook Drive.

River Crossing Marketplace Traffic Impact Analysis Report

The November 2017 *River Crossing Marketplace Specific Plan Traffic Impact Analysis Report*, Omni-Means, assumed a total of **119 AM and 105 PM peak hour trips** from the RM-10 zoning area would be added to Chinook Drive and Rivercrest Parkway. These new trips were used for the analysis in the TIAR to overestimate the impacts of future development of the RM-10 zoning area.

The following sections present the intersection operations of the two intersections closest to the project under Year 2020 Plus Project and Year 2040 plus Project conditions.

Year 2020 Plus Project Results

Table 2 presents a summary of the intersection operations for the weekday AM and PM peak hour scenarios for the Year 2020 Plus Project conditions.

**TABLE 2
YEAR 2020 PLUS PROJECT INTERSECTION OPERATIONS**

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
19	Bechelli Ln/ Chinook Dr	TWSC	C	13.0	B	-	13.7	B	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	16.0	C	-	13.6	B	-

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

As shown in Table 2, intersection 19 operates at LOS 'B' in the AM and PM peak hours. Intersection 20 operates at LOS 'C' and 'B' in the AM and PM peak hours, respectively.

Year 2040 Plus Project Results

Table 3 presents a summary of the intersection operations for the weekday AM and PM peak hour scenarios for the Year 2040 Plus Project conditions

**TABLE 3
YEAR 2040 PLUS PROJECT INTERSECTION OPERATIONS**

#	Intersection	Control Type ^{1,2}	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met? ³	Delay	LOS	Warrant Met? ³
19	Bechelli Ln/ Chinook Dr	TWSC	C	14.0	B	-	16.2	C	-
20	Bechelli Ln/ Rivercrest Pkwy	TWSC	C	16.3	C	-	15.9	C	-

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

As shown in Table 3, intersection 19 operates at LOS 'B' and 'C' in the AM and PM peak hours, respectively. Intersection 20 operates at LOS 'C' in the AM and PM peak hours.

Conclusion

The November 2017 TIAR overestimates the potential impact of full development of the RM-10 zoning area.

