

Received
8/1/22
Planning
Dept.

July 28, 2022

Mr. Eric R. Pluim
GATEWAY PARK DEVELOPMENT PARTNERS
133 Old Wards Ferry Road, Suite G
Sonora, CA 95370

RE: MISSION AVENUE DESIGN ASSESSMENT, MERCED, CA

Dear Mr. Pluim:

Thank you for contacting KD Anderson & Associates (KDA) regarding the traffic analysis needed by the City of Merced to address the ultimate design requirements of Mission Avenue east of State Route 99 (SR 99).

Background

Purpose of Analysis. As we understand, Dickenson Ferry Road-Mission Avenue extends east-west across southern Merced from Gurr Road on the west across SR 99 to Arboleda Drive on the east, as indicated in Figure 1. The City of Merced General Plan Circulation Element notes that the route will be improved to a multi-lane arterial in the area from Thornton Road on the west to Tower Road on the east. However, with the implementation of Campus Parkway, the segment east of SR 99 (i.e., E. Mission Avenue) no longer has direct access to the freeway, and recent improvements to the SR 99 / Arboleda Drive / Le Grand Road interchange provide another truck route to SR 99 as well. You have suggested to the City of Merced that a four-lane arterial street, as designed in the General Plan is no longer needed east of SR 99. City of Merced staff has indicated that analysis of long-term traffic conditions that represent full buildout of land uses in the area that will be tributary to E. Mission Avenue is needed to address this issue. By comparing “build out” traffic volumes with the roadway capacity threshold included in the General Plan, the analysis herein provides the evidence needed to support or deny the change you request.

Approach. The analysis summarized herein presents long term daily traffic volumes and resulting traffic conditions under the current General Plan circulation plan. This work has involved identifying long term land use assumptions for the southeastern Merced area, including the Industrial areas east of Campus Parkway. The travel demand forecasting model created for the *Merced Gateway EIR* was modified for this purpose, including incorporating relevant future roadways (i.e., Coffee Street and Pluim Drive extensions to Marino Way). The applicable roadway section for Mission Avenue was then determined based on daily traffic volume and the General Plan’s applicable LOS thresholds (i.e., Table 1).

TABLE 1 LEVEL OF SERVICE THRESHOLDS FOR ROADWAY SEGMENTS					
Roadway Type	Daily Roadway Segment Level of Service Thresholds				
	LOS A	LOS B	LOS C	LOS D	LOS E
6 lane Freeway	25,900	42,600	57,800	68,400	76,000
4 lane Freeway	40,000	65,800	89,200	105,600	117,400
4 lane Expressway		3,000	27,800	36,000	37,800
6 lane Expressway		5,900	38,900	48,900	51,300
2 lane Arterial	-	-	11,600	16,000	16,800
4 lane Arterial	-	4,100	26,800	33,700	35,400
6 lane Arterial	-	6,600	41,800	50,700	53,200
2 lane Collector	-	-	4,800	10,300	13,200
4 lane Collector	-	-	11,300	22,200	26,400
2 lane County Road	-	-	7,700	15,000	16,100
Source: Merced Vision 2030 General Plan, 2010					

Current Traffic Volumes / Levels of Service. New 24-hr counts were collected for study area roads on May 27, 2021 to provide perspective on current traffic conditions on relevant segments. These volumes and Levels of Service are shown in Figure 2 and summarized in Table 2.

TABLE 2
CURRENT DAILY TRAFFIC VOLUMES / LEVEL OF SERVICE

Street	Location	Class	Lanes	Daily Volume			LOS
				Total	Trucks	Truck %	
Campus Pkwy	Coffee St to Gerard Ave	Expressway	4	4,432	426	10%	A
	Gerard Ave to Childs Ave		4	3,398	499	15%	A
	Childs Ave to Yosemite Ave (SR 140)		4	1,039	64	6%	A
Yosemite Ave (SR 140)	Campus Pkwy to Tower Rd	Divided Arterial	2	7,178	625	9%	B
Childs Avenue	Campus Pkwy to Tower Rd	Minor Arterial	2	5,044	506	10%	C
Gerard Avenue	Campus Pkwy to Tower Rd	Collector	2	487	35	7%	C
Mission Avenue	Coffee St to Tower Rd	Divided Arterial	2	375	28	7%	C
	Tower Rd to Arboleda Dr	Divided Arterial	2	109	14	13%	C
Coffee Street	Campus Pkwy to Mission Ave	Collector	2	1,548	134	9%	C
	Mission Ave to Marino Way	Collector	2	1,211	121	10%	C
Marino Way	Coffee St to Le Grand Rd	Merced County ¹	2	375	41	11%	C
Kibby Road	SR 140 to Childs Ave	Collector	2	1,336	217	16%	C
Tower Road	SR 140 to Gerard Ave	Collector	2	335	51	15%	C
Arboleda Drive	SR 140 to Mission Ave	Merced County ¹	2	2,224	275	12%	C
	Mission Ave to Le Grand Rd	Merced County ¹	2	934	222	24%	C

¹ LOS based on 2 lane County Road threshold

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Development Characteristics. This analysis makes use of land use assumptions for the cumulative analysis presented in the Merced Gateway EIR (MGEIR) traffic study but modifies those assumptions to create a “worst case” assessment of the area’s traffic volumes. The MGEIR originally assumed cumulative development that was consistent with the Merced County Association of Governments (MCAG) regional travel demand forecasting model for the Year 2035. The MGEIR analysis added build out of the Merced Gateway project.

The analysis contained herein assumes that the non-residential land uses in the southeast Merced area are built out. Figure 3 notes these areas, and the land use assumptions for each area are listed in Table 3. As indicated, this “Build Out” analysis assumes that the southeast Merced area could eventually contain more than 17,000 employees. Because development of the reserves was not assumed in the City of Merced GPEIR and will not proceed without a General Plan amendment, this analysis does not address future conditions with reserve area development.

TABLE 3 SOUTHEAST MERCED DEVELOPMENT ASSUMPTIONS					
Area	Land Use	MGEIR Cumulative		Assumed	
		Development Level	Employees	Development Level	Employees
1	Industrial	Partial	3,176	Build Out	15,544
2	BP	Partial	440	Build Out	963
3	Merced Gateway	Build Out	720	Build Out	720
Total			4,336		17,227
Retail Commercial density 27.4 employees per acre Office Commercial density 21.4 employees per acre Industrial density 17.6 employees per acre					

Circulations System Assumptions. The volume of traffic in the future on study area roads could vary based on assumptions for improvements to area roadways. This analysis assumes that improvements identified in the City of Merced General Plan will be made, as noted in Table 4.

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TABLE 4 CIRCULATION IMPROVEMENTS ASSUMPTIONS			
Roadway	Location	Existing	Improvements
SR 99	Through Merced	4-6 lanes	Widen to 6 lanes
AME	Greensands Ave to Bellevue Rd	-	Construct to 4 lanes
Campus Parkway	SR 99 to Childs Ave	4 lanes	Widen to 6 lanes
	Childs Ave to SR 140	4 lanes	No change
	SR 140 to Yosemite Ave	-	Construct 4 lane
	Yosemite Ave to UCM	-	Construct 4 lanes
Coffee Street	Campus Pkwy to Mission Ave	2 lanes	Widen to 4 lanes
Pluim Drive	Campus Pkwy to Mission Ave	-	Construct 4 lanes
Tower Road	Gerard Ave to Mission Ave	-	Construct 2 lanes
Parsons Avenue	SR 140 to N. Bear Creek Rd	0-4 lanes	Complete to 4 lanes
	N. Bear Creek Rd to Yosemite Ave	2-4 lanes	Complete to 4 lanes
	Yosemite Ave to Bellevue Ave	0-2 lanes	Complete to 4 lanes
Mission Avenue	Coffee St to Pluim Drive	2 lanes	Collector

Results

Traffic Volume Forecasts. The MCAG traffic model was run to produce roadway segment daily traffic volumes, as noted in Figure 4. Level of Service was identified based on GPEIR thresholds in Table 5. For comparison, the daily traffic volumes and Level of Service reported in the GPEIR have also been presented.

Conditions on Mission Avenue. The unconstrained daily traffic volume on Mission Avenue east of Coffee Street falls below the minimum LOS D threshold for a two-lane Collector street. Thus, Merced General Plan standards will be satisfied with the proposed two-lane facility.

TABLE 5
FUTURE DAILY TRAFFIC VOLUMES / LEVEL OF SERVICE

Street	Location	Class	Future Lanes	Daily Volume				
				Existing	Future		GPEIR	
					Volume	LOS	Volume	LOS
Campus Pkwy	SR 99 to Coffee St	Expressway	6	n.a.	37,950	C	46,200	D
	Coffee St to Pluim Dr		6	4,432	27,450	C		
	Pluim Drive to Gerard Ave		6	4,432	19,950	C		
	Gerard Ave to Childs Ave		6	3,398	22,050	C		
	Childs Ave to Yosemite Ave (SR 140)		4	1,039	18,900	C	35,110	D
Yosemite Blvd (SR 140)	Campus Pkwy to Tower Rd	Divided Arterial	2	7,178	27,000	F	n.a.	
Childs Avenue	Campus Pkwy to Tower Rd	Minor Arterial	2	5,044	6,750	C	19,300	F
Gerard Avenue	Campus Pkwy to Tower Rd	Collector	2	487	10,650	C	7,640	D
Mission Avenue	Coffee St to Pluim Dr	Collector	2	375	5,000	D	1,890	C
	Pluim Dr to new BP	Collector	2	375	5,000	D		
	New BP to Tower Road	Divided Arterial	2	375	2,850	C		
	Tower Rd to Arboleda Dr	Divided Arterial	2	109	200	C	n.a.	
Coffee Street	Campus Pkwy to Mission Ave	Collector	2	1,548	6,050	D	n.a.	
	Mission Ave to Marino Way	Collector	2	1,211	1,250	C	n.a.	
Pluim Drive	Campus Pkwy to Mission Ave	Collector	2	n.a.	6,150	D	n.a.	
Marino Way	Coffee St to Le Grand Rd	Merced County ¹	2	375	450	C	n.a.	
Kibby Road	SR 140 to Childs Ave	Collector	2	1,336	7,350	D	n.a.	
Tower Road	SR 140 to Gerard Ave	Collector	2	335	2,300	C	n.a.	
Arboleda Drive	SR 140 to Mission Ave	Merced County ¹	2	2,224	2,250	C	n.a.	
	Mission Ave to Le Grand Rd	Merced County ¹	2	934	1,050	C	n.a.	

¹ LOS based on 2 lane County Road threshold

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*Mr. Eric Pluim
Gateway Park Development Partners
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Thank you for reviewing this information. Please feel free to call me if you have any questions.

Sincerely yours,

KD Anderson & Associates, Inc.

A handwritten signature in black ink, appearing to read 'K. Anderson', with a long horizontal flourish extending to the right.

Kenneth D. Anderson, P.E.
President

Attachment: figures, traffic counts

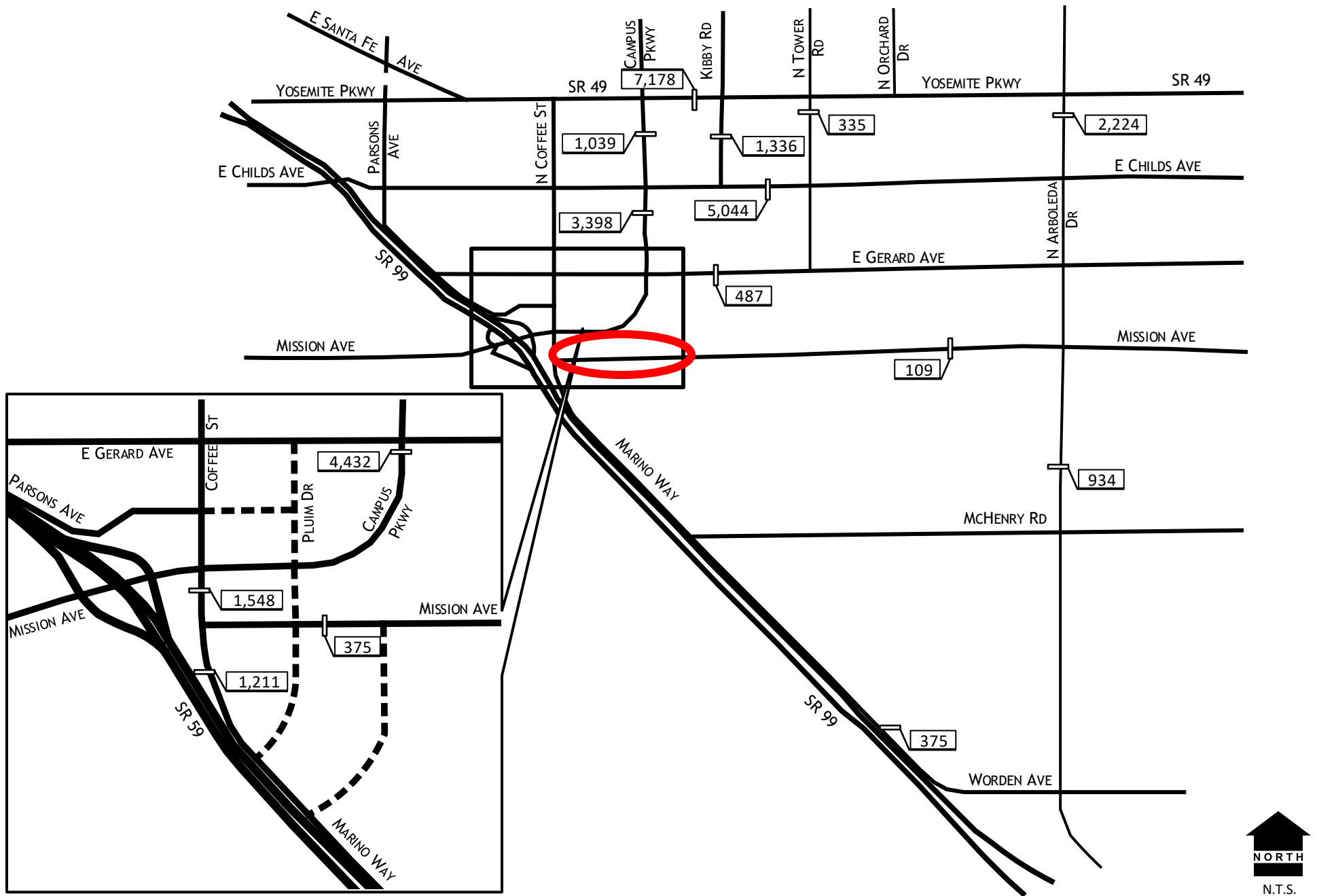
NOTE: Traffic counts available upon request.

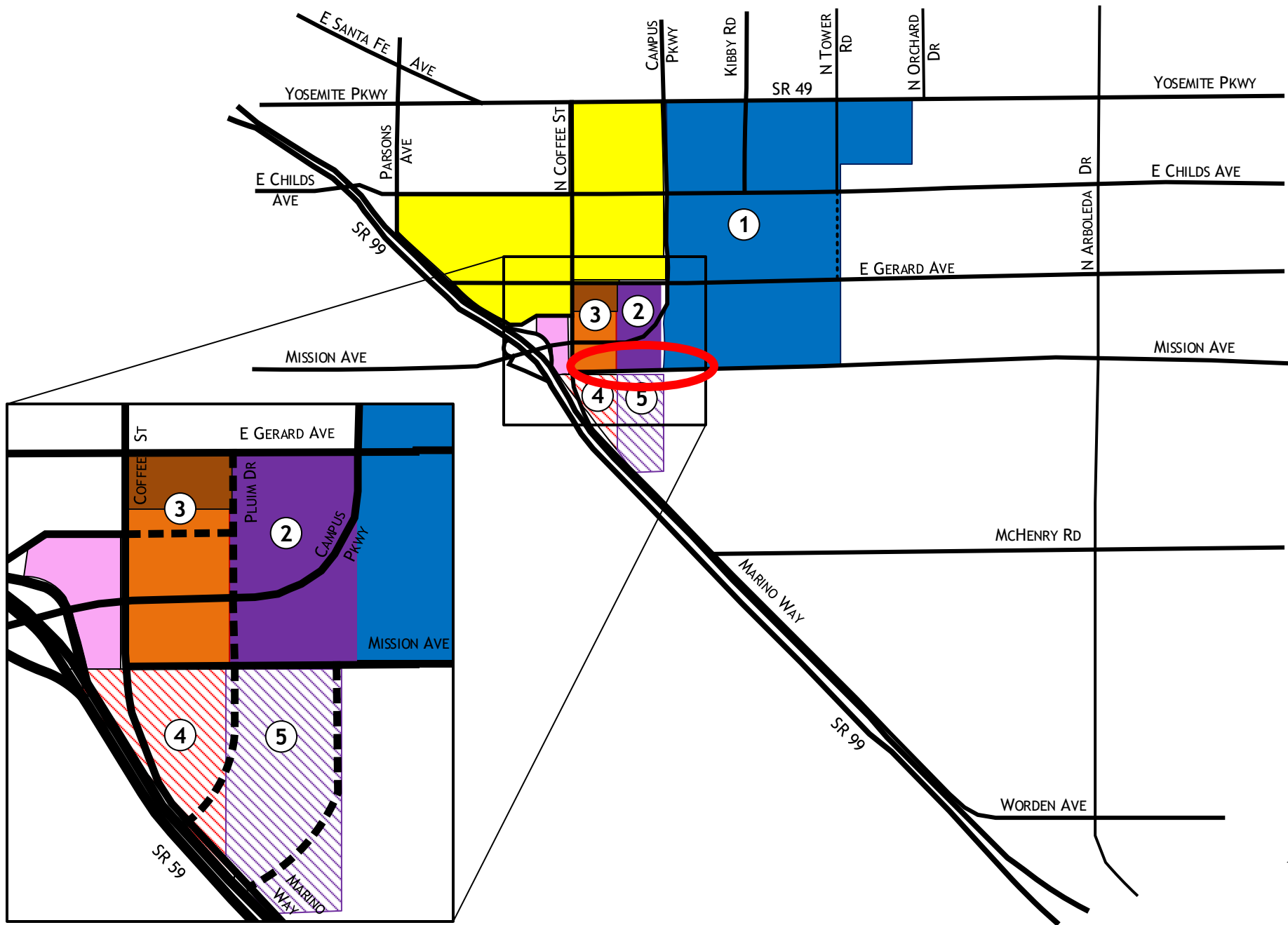
Mission Avenue Design Analysis 7 28 22.ltr

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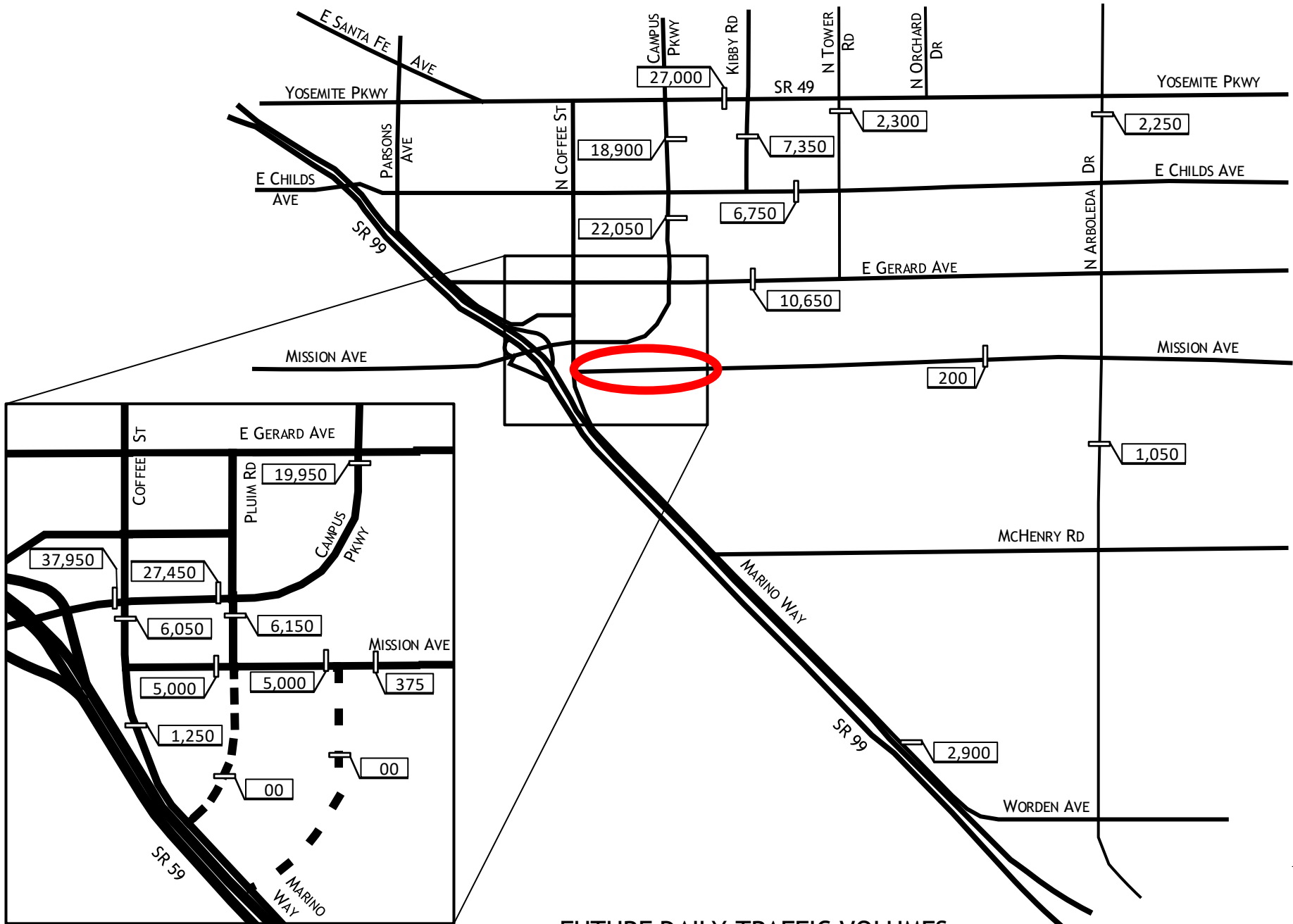
VICINITY MAP





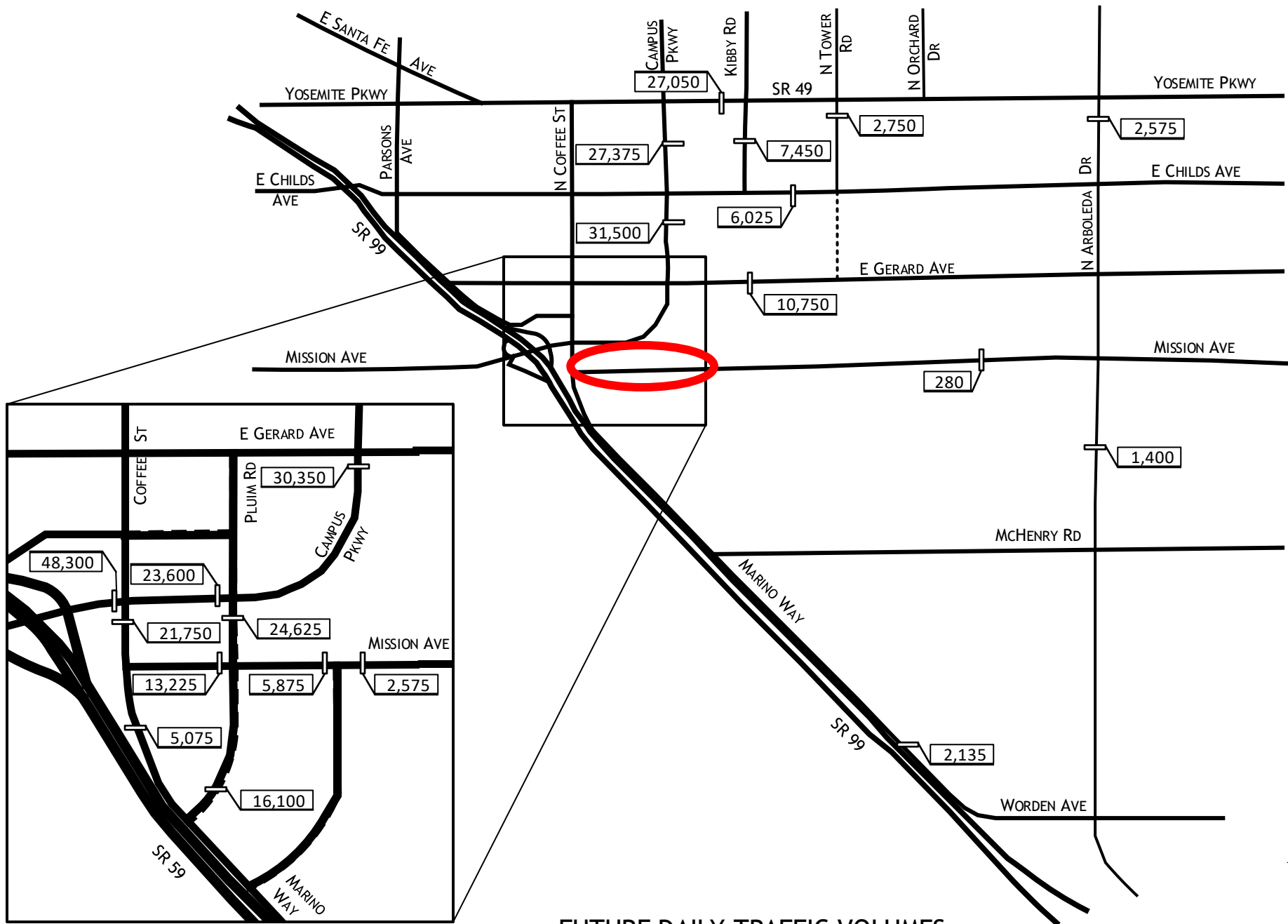
LAND USE MAP





FUTURE DAILY TRAFFIC VOLUMES
WITHOUT RESERVES





FUTURE DAILY TRAFFIC VOLUMES
WITH RESERVES

