

## DRAFT TECHNICAL MEMORANDUM

### Missouri Flat Master Circulation & Financing Plan Phase II

DRAFT Technical Memorandum 1-7

Future Traffic Analysis Results

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Date: January 4, 2018 Project #: 18048  
To: Ms. Natalie Porter, El Dorado County  
From: Mike Aronson, P.E., Aaron Elias, T.E.  
cc:

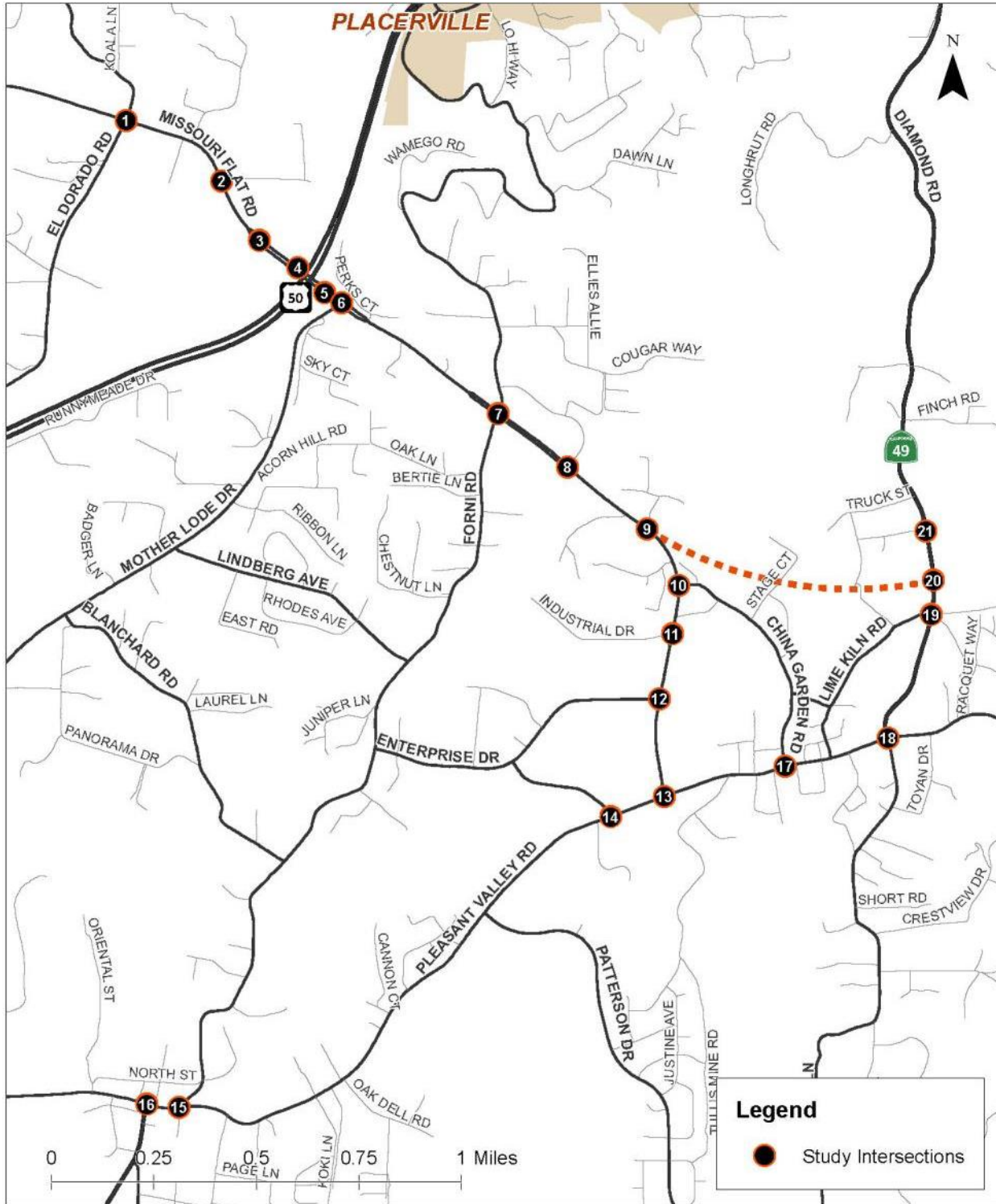
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This initial draft memorandum summarizes the future transportation conditions for the Missouri Flat Master Circulation and Financing Plan Phase II (MC&FP-II) project. The study area includes 23 study intersections, with a particular focus on the operations of the US 50 freeway interchange at Missouri Flat Road (Figure 1).

### SUMMARY

- Traffic forecasts were updated for 2035 and 2040 consistent with the current El Dorado County General Plan and market forecasts of potential commercial development.
- Current El Dorado County market-based growth forecasts are lower than those used in studies prior to the 2008 economic recession, averaging closer to one percent annual growth rather than three percent annual growth in prior forecasts.
- 2040 traffic forecasts are relatively consistent with the 2040 traffic forecasts used for the Diamond Springs Parkway traffic studies.

Figure 1: Study Area



Note: The intersections of US 50 EB Ramps/El Dorado Road and US 50 WB Ramps/El Dorado Road are included in the analysis, but not shown on this figure.

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## TRAFFIC FORECASTS

Traffic forecasts were updated for this evaluation for the 2035 horizon year. The 2035 forecasts were also extrapolated to a 2040 study year. The traffic forecasts were compared with traffic forecasts prepared for the “Diamond Springs Parkway Phase 1B Transportation Analysis Report” (Fehr & Peers, July, 2016).

The traffic forecasts are based on the El Dorado County travel model, starting with the version used for the most recent El Dorado County General Plan and Traffic Impact Mitigation Fee (TIMF). The model includes the roadway network and land use updates described below.

### Road Network Updates

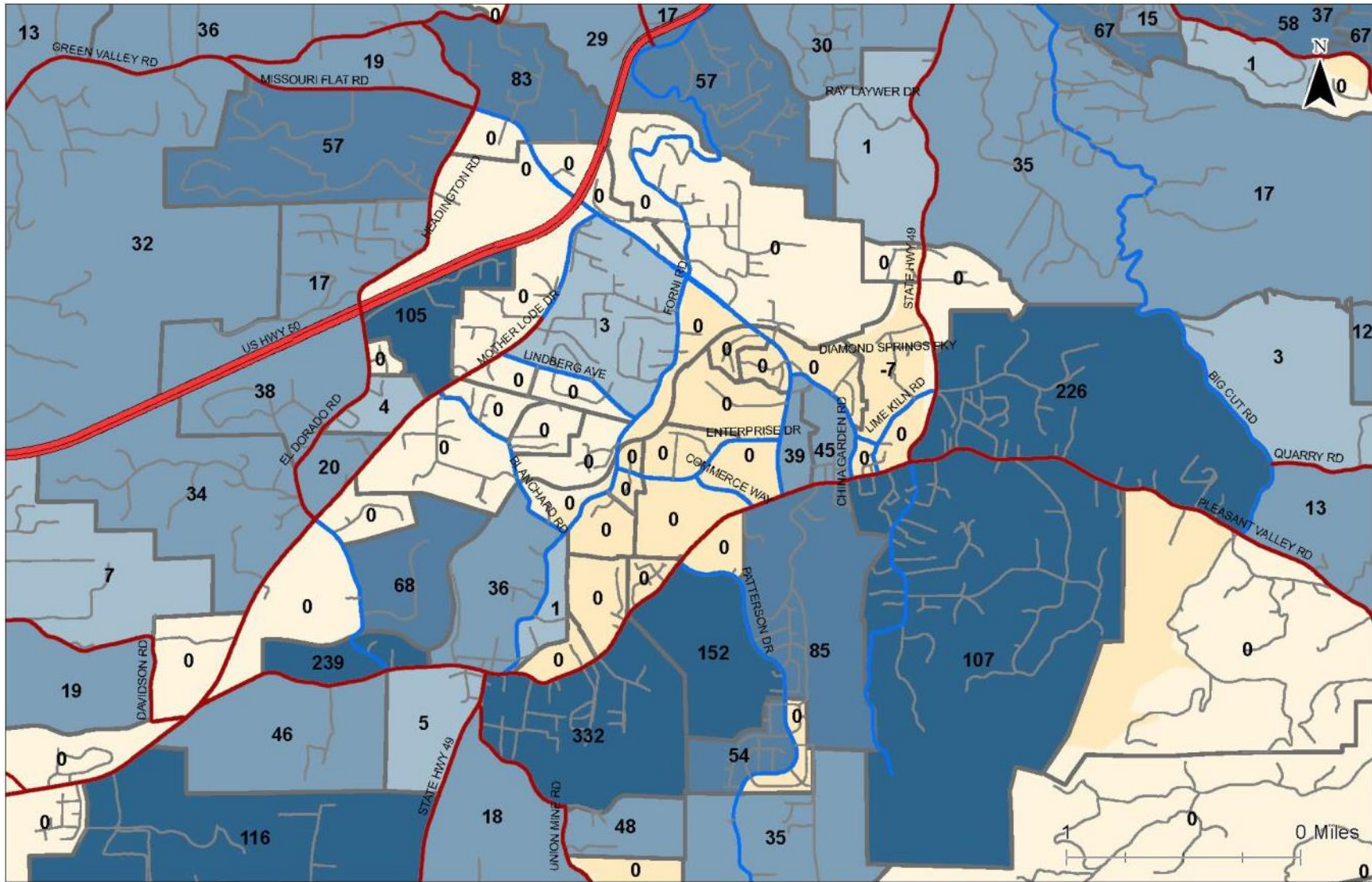
The 2035 road network was modified to include the planned widening of Missouri Flat Road from two to four lanes between China Garden and SR 49. The 2035 network also includes the completion of Diamond Springs Parkway as a four lane facility.

### Land Use Updates

Future land use assumptions were updated in the Missouri Flat area to account for known development projects including the proposed Crossings, Creekside Plaza, and Diamond Dorado shopping centers. They also included residential projects such as Piedmont Oaks and the Diamond Springs Village. The proposed Public Safety complex on Industrial Drive was also added. The overall commercial growth assumed is somewhat higher (about 100,000 square feet) than the market demand analysis prepared by Economic and Planning Systems.

Development assumptions by transportation analysis zone (TAZ) are summarized in Figure 2, Figure 3 and Figure 4.

Figure 2: Growth in Housing Units, 2010 to 2035







## 2035 Traffic Forecasts

The El Dorado County model was run with the updated 2035 assumptions. Peak hour turn movements were extracted for each of the study intersections. These turn movements were not used directly, but were adjusted incrementally based on the following:

$$2035 \text{ turn movement} = 2015 \text{ traffic count} + (2035 \text{ model} - 2015 \text{ model})$$

This incremental adjustment compensates for errors in the base year model and provides continuity of traffic flow for the future projections. Traffic forecasts at the four interchange study intersections are summarized in Table 1 and Table 2.

## 2040 Traffic Forecasts

The 2040 traffic forecasts on each turn movement were extrapolated from the 2035 forecasts:

$$2040 \text{ turn movement} = 2015 \text{ traffic count} + (2035 \text{ model} - 2015 \text{ model}) * 25/20$$

This extrapolation methodology is similar to the methodology recently reviewed by Caltrans District 3 for the Cameron Park Drive interchange study.

The updated 2035 traffic forecasts show about 30 percent growth compared to 2015 traffic counts at the interchange intersections, averaging about 1.5 percent annual growth. The 1.5 percent annual growth is projected to continue through 2040.

The updated 2040 traffic forecasts are relatively consistent with the 2040 traffic forecasts used in the Diamond Springs Parkway TAR. The updated MC&FP forecasts are higher on some of the turn movements to and from freeway ramps, and are lower on certain through movements on Missouri Flat Road. Where volumes are lower in the updated MC&FP forecasts, they are most likely related to updates in land use forecasts for specific development areas (outside the immediate Missouri Flat study area) that were made in the El Dorado County travel model for the TIMF based on more current information that became available after the modeling was done for the Diamond Springs Parkway.

**Table 1: Intersection Volume Comparison, AM Peak Hour**

Intersection	Northbound			Southbound			Eastbound			Westbound			TOTAL
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
<b>3 Missouri Flat Road &amp; Plaza Drive</b>													
2015 Count	101	413	294	34	290	7	7	7	83	228	23	50	<b>1,537</b>
2035 MFC&FP	114	706	301	47	498	25	22	3	87	227	19	61	<b>2,111</b>
2040 MFC&FP	117	780	303	50	550	29	25	3	88	227	19	63	<b>2,256</b>
2040 Diamond Springs Parkway TAR	110	870	300	50	580	50	30	10	90	230	30	60	<b>2,410</b>
<b>4 Missouri Flat Road &amp; US 50 WB Ramps</b>													
2015 Count	368	519	0	0	485	116	0	0	0	487	1	289	<b>2,265</b>
2035 MFC&FP	489	723	0	0	696	119	0	0	0	398	1	405	<b>2,830</b>
2040 MFC&FP	519	774	0	0	748	119	0	0	0	398	1	434	<b>2,994</b>
2040 Diamond Springs Parkway TAR	490	820			780	120				490	10	460	<b>3,170</b>
<b>5 Missouri Flat Road &amp; US 50 EB Ramps</b>													
2015 Count	0	766	71	161	811	0	119	0	358	0	0	0	<b>2,286</b>
2035 MFC&FP	0	1,060	96	235	858	0	150	0	564	0	0	0	<b>2,964</b>
2040 MFC&FP	0	1,134	102	254	870	0	158	0	616	0	0	0	<b>3,133</b>
2040 Diamond Springs Parkway TAR		1,160	80	250	1,020		150	10	550				<b>3,220</b>
<b>6 Missouri Flat Road &amp; Mother Lode Drive</b>													
2015 Count	44	720	0	0	1,094	75	119	0	40	0	0	0	<b>2,092</b>
2035 MFC&FP	50	983	0	0	1,335	88	140	0	56	0	0	0	<b>2,651</b>
2040 MFC&FP	51	1,049	0	0	1,395	92	145	0	60	0	0	0	<b>2,791</b>
2040 Diamond Springs Parkway TAR	50	1,120			1,490	80	120		40				<b>2,900</b>

**Table 2: Intersection Volume Comparison, PM Peak Hour**

Intersection	Northbound			Southbound			Eastbound			Westbound			TOTAL
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	
<b>3 Missouri Flat Road &amp; Plaza Drive</b>													
2015 Count	336	292	419	47	338	19	28	51	331	432	43	50	<b>2,386</b>
2035 MFC&FP	347	622	417	68	714	61	73	44	357	437	36	71	<b>3,245</b>
2040 MFC&FP	350	705	417	73	808	71	84	44	363	438	36	76	<b>3,464</b>
2040 Diamond Springs Parkway TAR	340	760	420	60	810	50	80	60	340	440	60	70	<b>3,490</b>
<b>4 Missouri Flat Road &amp; US 50 WB Ramps</b>													
2015 Count	366	653			914	187				636	0	394	<b>3,150</b>
2035 MFC&FP	572	872			1,285	223				594	0	513	<b>4,058</b>
2040 MFC&FP	623	927			1,377	232				594	0	543	<b>4,296</b>
2040 Diamond Springs Parkway TAR	560	950			1,400	190				680	10	570	<b>4,360</b>
<b>5 Missouri Flat Road &amp; US 50 EB Ramps</b>													
2015 Count		828	106	376	1,174		191	4	587				<b>3,266</b>
2035 MFC&FP		1,245	149	502	1,377		199	4	757				<b>4,233</b>
2040 MFC&FP		1,350	160	533	1,427		201	4	800				<b>4,475</b>
2040 Diamond Springs Parkway TAR		1,310	110	540	1,540		200	10	750				<b>4,460</b>
<b>6 Missouri Flat Road &amp; Mother Lode Drive</b>													
2015 Count	52	766			1,545	216	168		64				<b>2,811</b>
2035 MFC&FP	73	1,092			1,893	241	187		74				<b>3,559</b>
2040 MFC&FP	78	1,174			1,979	248	192		76				<b>3,747</b>
2040 Diamond Springs Parkway TAR	60	1,250			2,070	220	170		60				<b>3,830</b>