Appendix B

No Commercial Alternative Traffic Memorandum

DKS Associates
TRANSPORTATION SOLUTIONS

MEMORANDUM

TO:	Judith Matsui-Drury, Aelita Milatzo	
FROM:	Vic Maslanka	
DATE:	10 August 2017	
SUBJECT:	Panhandle – No Commercial Alternative Trip Generation and VMT Analysis Summary	P 16052-000

Background

This memorandum summarizes the results of the technical analysis of the Panhandle No Commercial Alternative. Specifically, trip generation and vehicle-miles-traveled (VMT) were calculated for the No Commercial Alternative, and are compared to the Project in this memorandum.

Methodology

The methodology utilized in the analysis is identical to that summarized previously for the Project, as documented in the DEIR. SACOG's SACSIM travel model was utilized to estimate the number of trips by mode associated with the No Commercial Alternative, as well as to calculate regional VMT. The trip generation and VMT analysis is based upon the "Existing Plus Project / Alternative" scenario, and assumes full buildout. That is, the analysis is based upon full occupancy of the residential, school, and commercial components of the Project.

Alternative Description

The No Commercial Alternative presents an alternate land use plan for the site. The Panhandle Project consists of three land use types – residential, schools, and commercial development. The No Commercial Alternative replaces the commercial development with residential land use. The location of the commercial development is at the southern edge of the Project area, adjacent to Del Paso Road east of National Drive. Table 1 summarizes the land use of the Project and No Commercial Alternative. The number of residential units increases by 39 (+1.5 percent).

One of the reasons for the development of the No Commercial Alternative was consideration of the viability of retail development as part of the Panhandle Project. The Natomas area has a large number of vacant non-residential parcels, as shown in the "Natomas Vacant Sites" map attached to the end of this memorandum.

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Table 1
Summary of Travel Modeling Land Use Assumptions

Land Use	Project			No Commercial Alternative		
	Dwelling Units	Square Feet	Students	Dwelling Units	Square Feet	Students
Elementary School			500			500
Middle School / High School			2,800			2,800
Suburban Center		101,277			0	
Village 1	136			136		
Village 2	138			177		
Village 3	209			209		
Village 4	178			178		
Village 5	103			103		
Village 6	64			64		
Village 7	201			201		
Village 8	100			100		
Village 9	172			172		
Village 10	112			112		
Village 11	107			107		
Village 12	73			73		
Village 13	80			80		
Village 14	143			143		
Subtotal	*1,816*	*101,277*	*3,300*	*1,855*	*0*	*3,300*
Krumenacher Property west of National Drive	652			652		
Krumenacher Property east of powerlines	192			192		
Total	2,660	101,277	3,300	2,699	0	3,300

Trip Generation

The Project and No Commercial Alternative trip generation were estimated directly by SACOG's SACSIM travel model. The trip generation is based directly on household travel information

collected in the Sacramento region, and reflects the location, mode choice, and demographics associated with the area. For the new development in the Panhandle Annexation area, land use characteristics are assumed to be similar to nearby existing development, such as the area of North Natomas immediately to the west of the Project site.

Tables 2 through 4 summarize mode choice for the person trips generated by the residential, school, and commercial elements of the Project and No Commercial Alternative for daily, a.m. peak hour, and p.m. peak hour periods.

For both residential and school uses, the percentage of person trips by automobile increases with the No Commercial Alternative.

Table 2
Percentage of Person Trips by Mode – Residential Development

Mode	Project			No Commercial Alternative		
	Daily	A.M. Peak Hour	P.M. Peak Hour	Daily	A.M. Peak Hour	P.M. Peak Hour
Automobile – Single Occupant	43.7%	46.3%	46.0%	46.0%	50.3%	47.6%
Automobile – Two Occupants	27.6%	22.5%	27.1%	28.0%	22.6%	28.4%
Automobile – Three or More Occupants	19.7%	17.3%	19.4%	19.3%	16.5%	18.1%
Subtotal – Person Trips by Auto	*91.0%*	*86.1%*	*92.5%*	*93.3%*	*89.4%*	*94.1%*
Transit	0.3%	0.5%	0.3%	0.4%	0.6%	0.4%
Bicycle	0.9%	1.2%	1.1%	0.8%	1.3%	0.7%
Walk	6.3%	9.3%	5.0%	4.3%	6.1%	4.0%
School Bus	1.4%	2.9%	1.1%	1.2%	2.6%	0.9%

Tables 5 and 6 summarize vehicular trip generation of the Project and No Commercial Alternative. Compared to the Project, the Alternative generates 3,357 fewer daily vehicle trips (about 12 percent). The Alternative generates 62 percent fewer internal vehicle trips. New external vehicle trips decrease by 2,175 (about 8 percent).

During the a.m. peak hour, the Alternative is expected to generate 116 fewer vehicle trips (about 6 percent). The Alternative generates 60 percent fewer internal vehicle trips. New external vehicle trips decrease by 15 (about 1 percent).

During the p.m. peak hour, the Alternative is expected to generate 204 fewer vehicle trips (about 10 percent). The Alternative generates 38 percent fewer internal vehicle trips. New external vehicle trips decrease by 183 (about 9 percent).

Table 3
Percentage of Person Trips by Mode – Schools

Mode	Project			No Commercial Alternative		
	Daily	A.M. Peak Hour	P.M. Peak Hour	Daily	A.M. Peak Hour	P.M. Peak Hour
Automobile – Single Occupant	16.9%	11.2%	18.3%	18.2%	11.2%	19.3%
Automobile – Two Occupants	29.9%	27.1%	33.8%	29.0%	26.8%	30.6%
Automobile – Three or More Occupants	31.4%	32.5%	30.5%	32.3%	34.5%	33.4%
Subtotal – Person Trips by Auto	*78.2%*	*70.8%*	*82.6%*	*79.5%*	*72.5%*	*83.3%*
Transit	0.4%	0.4%	0.2%	0.4%	0.6%	0.2%
Bicycle	1.7%	2.2%	1.3%	1.7%	2.3%	1.2%
Walk	10.8%	14.1%	8.3%	9.3%	11.6%	8.2%
School Bus	8.9%	12.4%	7.5%	9.1%	13.0%	7.1%

Table 4
Percentage of Person Trips by Mode – Commercial Development

Mode	Project			No Commercial Alternative		
	Daily	A.M. Peak Hour	P.M. Peak Hour	Daily	A.M. Peak Hour	P.M. Peak Hour
Automobile – Single Occupant	55.2%	64.1%	57.1%	-	-	-
Automobile – Two Occupants	24.3%	20.6%	21.8%	-	-	-
Automobile – Three or More Occupants	12.5%	9.1%	12.5%	-	-	-
Subtotal – Person Trips by Auto	*92.0%*	*93.8%*	*91.4%*	-	-	-
Transit	0.3%	0.4%	0.3%	-	-	-
Bicycle	0.7%	0.6%	0.6%	-	-	-
Walk	6.9%	5.2%	7.7%	-	-	-
School Bus	0.0%	0.0%	0.0%	-	-	-

Table 5
Vehicular Trip Generation

Land Use	Project Vehicle Trip-Ends							No Commercial Alternative Vehicle Trip-Ends						
	Daily	A.M. Peak Hour			P.M. Peak Hour			Daily	A.M. Peak Hour			P.M. Peak Hour		
		Entering	Exiting	Total	Entering	Exiting	Total		Entering	Exiting	Total	Entering	Exiting	Total
Total Trip-Ends														
Residential	16,855	232	950	1,182	849	401	1,251	17,105	241	1,003	1,244	870	420	1,290
Schools	6,373	407	142	549	167	334	501	7,165	479	167	646	192	394	586
Commercial	4,399	185	90	275	129	199	328	-	-	-	-	-	-	-
Total	27,627	824	1,182	2,006	1,145	934	2,080	24,270	720	1,170	1,890	1,062	814	1,876
Internal Trip-Ends														
Residential	-978	-17	-67	-84	-18	-11	-29	-384	-10	-24	-34	-11	-8	-19
Schools	-615	-43	-15	-57	-6	-9	-15	-340	-24	-9	-32	-7	-10	-16
Commercial	-314	-24	-3	-27	-4	-8	-12	-	-	-	-	-	-	-
Total	-1,907	-84	-85	-168	-28	-28	-56	-725	-33	-33	-67	-18	-18	-35
External Trip-Ends														
Residential	15,877	215	883	1,098	831	390	1,222	16,720	231	978	1,210	859	412	1,271
Schools	5,758	364	127	492	161	325	486	6,824	455	159	614	185	385	570
Commercial	4,085	161	87	248	125	191	316	-	-	-	-	-	-	-
Total	25,720	740	1,097	1,838	1,117	906	2,024	23,545	686	1,137	1,823	1,045	769	1,841

Table 6
Vehicular Trip Generation by Residential Village / Development Component

Land Use	Project Vehicle Trip-Ends							No Commercial Alternative Vehicle Trip-Ends						
	Daily	A.M. Peak Hour			P.M. Peak Hour			Daily	A.M. Peak Hour			P.M. Peak Hour		
		Entering	Exiting	Total	Entering	Exiting	Total		Entering	Exiting	Total	Entering	Exiting	Total
Village 1	858	12	48	60	58	6	64	858	12	50	62	58	6	65
Village 2	871	12	49	61	59	6	65	1,117	16	65	81	76	8	85
Village 3	1,319	18	74	92	89	9	98	1,319	18	77	96	89	9	100
Village 4	1,124	15	63	78	75	8	83	1,124	15	66	81	75	8	84
Village 5	650	9	36	45	44	4	48	650	9	37	47	44	4	49
Village 6	404	6	23	28	27	3	30	404	6	24	29	27	3	30
Village 7	1,269	17	71	89	85	9	94	1,269	17	74	92	85	9	96
Village 8	631	9	35	44	42	4	47	631	9	36	46	42	4	48
Village 9	1,086	15	61	76	73	7	81	1,086	15	63	79	73	7	82
Village 10	707	10	40	49	47	5	52	707	10	42	51	47	5	53
Village 11	675	9	38	47	45	5	50	675	9	40	49	45	5	51
Village 12	461	6	26	32	31	3	34	461	6	27	33	31	3	35
Village 13	505	7	28	35	34	3	37	505	7	29	36	34	3	38
Village 14	903	12	51	63	61	6	67	903	12	53	65	61	6	68

Table 6
Vehicular Trip Generation by Residential Village / Development Component

Land Use	Project Vehicle Trip-Ends							No Commercial Alternative Vehicle Trip-Ends						
	Daily	A.M. Peak Hour			P.M. Peak Hour			Daily	A.M. Peak Hour			P.M. Peak Hour		
		Entering	Exiting	Total	Entering	Exiting	Total		Entering	Exiting	Total	Entering	Exiting	Total
Krumenacher Property 1 (West of National Drive)	4,202	58	237	295	61	249	310	4,203	59	247	306	61	260	315
Krumenacher Property 3 (East of Powerlines)	1,190	17	70	87	18	73	91	1,190	17	73	90	18	76	92
Residential Development	*16,855*	*232*	*950*	*1,182*	*849*	*401*	*1,251*	*17,105*	*241*	*1,003*	*1,244*	*870*	*420*	*1,290*
Elementary School	1,263	84	24	109	32	69	101	1,420	99	28	128	37	81	118
Middle School / High School	5,110	322	118	440	135	265	401	5,745	379	139	518	155	313	469
Schools	*6,373*	*407*	*142*	*549*	*167*	*334*	*501*	*7,165*	*478*	*167*	*646*	*192*	*394*	*587*
Commercial Development	*4,399*	*185*	*90*	*275*	*129*	*199*	*328*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total	27,627	824	1,182	2,006	1,145	934	2,080	24,270	719	1,170	1,890	1,062	814	1,877

Vehicle Miles Traveled (VMT)

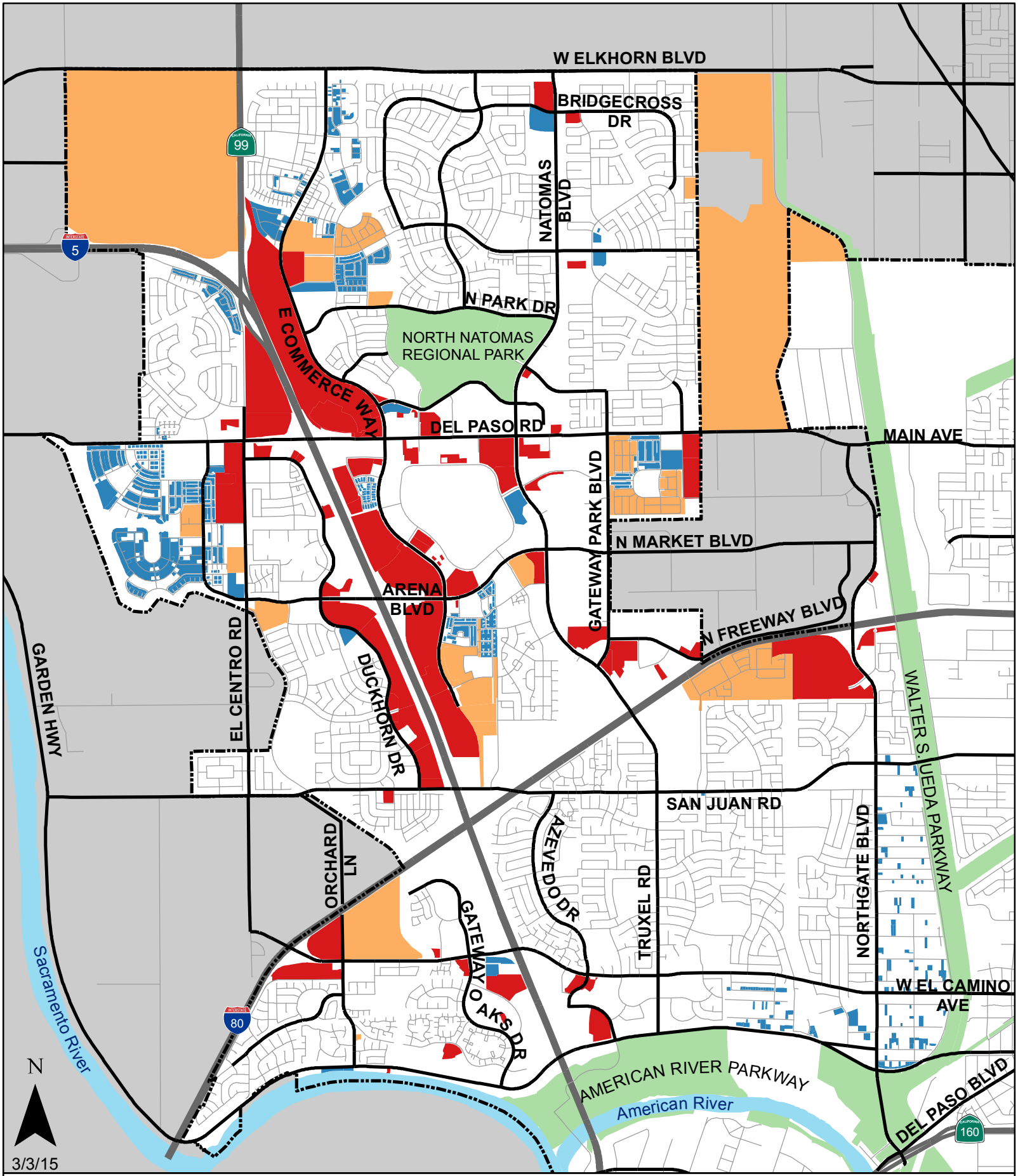
Travel forecasting for the transportation analysis was conducted with the use of SACOG's SACSIM travel model. Table 7 summarizes the VMT analysis. Compared to the Project, the increase in VMT associated with the Alternative changes from 142,246 daily vehicle miles travelled to 152,688 daily vehicle miles travelled (+7 percent).

Table 7
Estimated Project VMT

Roadway Type	Regional Daily Vehicle Miles Travelled		
	Existing	Existing Plus Project	Existing Plus No Commercial Alternative
Freeways and Rural Roads	33,632,214	33,682,030	33,691,323
Urban Streets	24,622,056	24,714.487	24,715,634
Total	58,254,270	58,396,516	58,406,958
Regional Percentage Change	-	0.24%	0.26%
Increase in VMT	-	142,246	152,688
Percentage Change in Increased VMT Compared to Project	-	-	7%

Summary

- Analysis of the Project and No Commercial Alternative assumes full occupancy of all land use elements – residential, school, and commercial.
- The No Commercial Alternative was developed in part to address the current commercial space vacancy in the Natomas area.
- Compared to the Project, the No Commercial Alternative would generate fewer motor vehicle trips, but a higher increase in VMT.
- Although quantitative traffic operations analysis has not been conducted, the Alternative would be anticipated to have a similar (or slightly reduced) level of traffic operations impacts as the Project, based upon the reduction of external trips throughout the day.
- If the Project was implemented without successful retail development (either no development on the site or vacant space), the Project VMT increase would be anticipated to be higher than anticipated with the Project, but lower than the No Commercial Alternative (due to the increase in residential units).



Vacant Non-Residential

Vacant Residential with Finished Lots

Vacant Residential without Final Map

Natomas Vacant Sites

City of SACRAMENTO
Community Development