

A P P E N D I X H

MEMORANDUM RE: ANALYSIS OF
THE NO GROWTH SCENARIO

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MEMORANDUM

DATE February 3, 2017
TO Hillary Gitelman
City of Palo Alto, Department of Planning and Community Environment
FROM Joanna Jansen
SUBJECT Analysis of the No Growth Scenario

This memorandum summarizes the analysis of a “No Growth Scenario” for the year 2030. A No Growth Scenario is purely hypothetical and was developed to highlight the extent to which the proposed Plan’s significant and unavoidable impacts result from regional growth outside of Palo Alto. The No Growth Scenario analysis assumes that the proposed Plan would not be adopted and that no growth in population, employment, or square footage would occur in Palo Alto by 2030 beyond the amount of development existing in 2014, plus new growth permitted by fall 2016. This means not only that no new construction would occur, but that no children would be added to existing Palo Alto families, and no new jobs would be added in existing businesses. For all scenarios, including the No Growth Scenario, population and employment growth is assumed to proceed outside of Palo Alto consistent with the assumptions embedded in the VTA Travel Demand Model used for this analysis. The modeling completed for the No Growth Scenario also assumes Caltrain electrification, implementation of the *Valley Transportation Plan*, and other future transportation system improvements outside of Palo Alto by the year 2030.

This memorandum is organized by impact threshold. The impact statements correspond to the **significant and unavoidable impacts** to transportation and air quality in Chapter 4 of the February 2016 Draft Environmental Impact Report (EIR) and Supplement to the Draft EIR.

AIR-2	Implementation of the proposed Plan could violate an air quality standard; contribute substantially to an existing or project air quality violation; and/or result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (Significant and Unavoidable – All Six Scenarios)
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Criteria air pollutant emissions associated with the No Growth Scenario are shown in Table 1. The No Growth Scenario would have fewer emissions than all six scenarios, but would, nonetheless, generate an increase in emissions that would contribute to the nonattainment designation for ozone and particulates within the Air Basin. Development that has already been authorized, include the new facilities at the Stanford Medical Center. As a result, the No Growth Scenario would not eliminate the significant and unavoidable impact identified for all six of the proposed Plan scenarios. Consequently, the No Growth Scenario would also contribute to an increase in health effects in the basin until such time the attainment standards are met in the Air Basin.

TABLE 1 COMMUNITY-WIDE CRITERIA AIR POLLUTANTS GENERATED BY PROPOSED LAND USES UNDER THE NO GROWTH SCENARIO

Category	Criteria Air Pollutants (Average lbs./day)			
	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Existing Land Uses 2030				
Transportation ^a	125	329	365	149
Energy ^b	94	832	65	65
Area Sources ^c	1,709	1,444	106	105
<i>Total</i>	<i>1,927</i>	<i>2,606</i>	<i>536</i>	<i>319</i>
<i>Total Tons per Year (tpy)</i>	<i>349</i>	<i>463</i>	<i>94</i>	<i>56</i>
No Growth				
Transportation ^a	127	336	370	151
Energy ^b	97	857	67	67
Area Sources ^c	1,790	1,501	112	111
<i>Total</i>	<i>2,014</i>	<i>2,694</i>	<i>549</i>	<i>329</i>
Change from Existing Land Uses	86	88	13	10
<i>Total Tons per Year (tpy)</i>	<i>365</i>	<i>479</i>	<i>96</i>	<i>58</i>
Change from Existing Land Uses (tpy)	16	16	2	2
BAAQMD Criteria	10	10	15	10

Notes: Emissions may not total to 100 percent due to rounding.

ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = coarse inhalable particulate matter; PM_{2.5} = fine inhalable particulate matter.

a. Transportation. VMT is based on data provided by Hexagon Transportation Consultants, Inc. based on the VTA model for Palo Alto and modeled with EMFAC2014 Version 1.07 for running exhaust emissions using 2030 emission rates. VMT is multiplied by 347 days/year to account for reduced traffic on weekends and holidays.

b. Energy. Based on three-year average (2014–2011) of energy use provided by City of Palo Alto Utilities. The forecast is based on the proposed Plan housing units (residential), employment (non-residential), and service population (city) projections. The table includes the natural gas use provided by City of Palo Alto Utilities, both for residential and non-residential uses in the city and the Sphere of Influence. Customers may participate in the PaloAltoGreen Gas (PAGG) program, which would reduce community emissions. Palo Alto expects that about 10 percent of the city's gas load (both for residential and non-residential) will participate in PAGG in 2020. In addition, electrification of gas appliances (e.g., water heaters, space heaters, dryers, and cooktops) would also reduce natural gas use and increase carbon neutral electric use. The analysis is conservative and does not include additional local reductions from participation in the PAGG program or conversion of natural gas appliances to electric appliances.

c. Area Sources – Off-Road Emissions. Generated using OFFROAD2007. Estimated based on population (Landscaping), employment (Light Commercial Equipment), and construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Annual construction emissions forecasts are assumed to be similar to historic levels. Forecasts for landscaping equipment use are based on the proposed Plan population projections, and for light commercial equipment use are based on the proposed Plan employment projections. Excludes BAAQMD-permitted sources. ROG emissions from consumer product use based on the emissions rates in CalEEMod 2013.2.2. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites.

Source: PlaceWorks, 2016.

TRANS-1	Implementation of the project would cause an intersection to drop below its motor vehicle level of service standard, or deteriorate operations at representative intersections that already operate at a substandard level of service. (Significant and Unavoidable – All Six Scenarios)
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Level of Service

For the No Growth Scenario, all intersections were assumed to have the same lane geometry as under Scenario 1, the Business As Usual scenario, which includes only improvements that are already planned and funded. The No Growth Scenario analysis was conducted using the same methodology as the six planning scenarios. Traffic volumes were projected with the travel demand forecasting model, intersection level of service was calculated using TRAFFIX Table 2 presents the intersection level of service (LOS) for the No Growth Scenario.

As shown in Table 2, under the No Growth Scenario, six of the 18 intersections analyzed for the Supplement to the Draft EIR would have a substandard level of service and would experience a significant impact. Thus, under No Growth Scenario conditions there would be nearly as many intersections where the level of service would be substandard as under Scenario 1. This reflects the fact that when one trip is removed from a roadway (due to the “no growth” assumption), the travel demand forecasting model replaces it with another trip made by another driver because of the regional growth in travel demand in the year 2030. Thus, a significant impact would still occur under No Growth Scenario and this significant and unavoidable impact would not be avoided.

Vehicle Miles Traveled

VMT for City + SOI

Understanding vehicle miles traveled (VMT) contributes to an understanding of transportation patterns, but VMT is not the basis for a standard of significance used in this analysis. Table 3 presents the No Growth Scenario VMT for the city and Sphere of Influence (SOI). As shown in Table 3, under No Growth Scenario conditions there would be slightly more (0.5 percent higher) VMT compared to existing conditions. VMT excludes trips that begin and end outside Palo Alto. However, the level of service analysis and ADT includes all trips, whether or not attributable to Palo Alto. Traffic volumes on roadways will increase on nearly all roadways under the No Growth scenario, even though Palo Alto-related VMT would increase only slightly. The No Growth Scenario would result in lower VMT than any of the six scenarios in the city and SOI, but would still be higher than existing VMT.

VMT for City Only

Table 4 presents the No Growth Scenario VMT for the city only. The results for the city only presented in Table 4 are very similar to the ones presented in Table 3, which include the city and the SOI. Under No Growth conditions there would be slightly more VMT compared to existing conditions in the city. The No Growth Scenario would result in lower VMT than any of the six scenarios in the city.

VMT per Capita

For the No Growth Scenario, the VMT per capita for the city and SOI would be 34.7, and for the city 32.2. Under No Growth conditions there would be slightly less VMT per capita compared to existing conditions, but

TABLE 2 EXISTING AND 2030 NO GROWTH SCENARIO INTERSECTION LEVELS OF SERVICE

#	Intersection	Peak Hour	Existing			No Growth Scenario		
			Average Delay (sec)	LOS	Crit. V/C	Average Delay (sec)	LOS	Crit. V/C
1	I-280 NB Off-Ramp & Sand Hill Road (Menlo Park)	AM	114.5	F	1.269	159.1	F	1.441
		PM	27.0	C	0.939	53.2	D	1.069
2	Middlefield Road & Charleston Road	AM	47.6	D	0.660	48.5	D	0.694
		PM	39.8	D	0.695	49.4	D	0.881
3	Middlefield Road & San Antonio Road*	AM	48.9	D	0.668	49.3	D	0.733
		PM	39.0	D	0.789	43.0	D	0.885
4	Alma Street & Charleston Road	AM	33.2	C	0.642	34.9	C	0.752
		PM	48.6	D	0.743	74.3	E	1.006
5	El Camino Real (SR 82) & Embarcadero Road/ Galvez Street*	AM	46.1	D	0.729	56.4	E	0.892
		PM	42.5	D	0.824	64.9	E	1.016
6	El Camino Real (SR 82) & Page Mill Road/ Oregon Expressway*	AM	62.7	E	0.819	65.0	E	0.852
		PM	52.4	D	0.910	65.1	E	1.014
7	El Camino Real (SR 82) & Arastradero Road/ Charleston Road*	AM	35.3	D	0.663	37.5	D	0.739
		PM	47.7	D	0.841	62.2	E	0.986
8	El Camino Real (SR 82) & San Antonio Road (Mountain View)*	AM	40.5	D	0.768	47.6	D	0.887
		PM	54.0	D	0.816	87.3	F	1.028
9	Foothill Expressway/Junipero Serra Blvd & Page Mill Road*	AM	55.7	E	0.909	66.9	E	0.973
		PM	189.7	F	1.064	288.5	F	1.123
10	Foothill Expressway & Arastradero Road*	AM	48.7	D	0.276	50.5	D	0.452
		PM	57.0	E	0.849	125.1	F	1.245
11	El Camino Real (SR 82) & Alma Street/ Sand Hill Road*	AM	22.7	C	0.452	22.6	C	0.507
		PM	36.5	D	0.651	38.5	D	0.834
12	San Antonio Road & East Charleston Road*	AM	48.4	D	0.729	51.1	D	0.815
		PM	42.0	D	0.844	43.5	D	0.864
13	El Camino Real (SR 82) NB Ramps & University Avenue*	AM	22.5	C	0.666	31.9	C	0.871
		PM	32.4	C	0.619	31.5	C	0.769

TABLE 2 EXISTING AND 2030 NO GROWTH SCENARIO INTERSECTION LEVELS OF SERVICE

#	Intersection	Peak Hour	Existing			No Growth Scenario		
			Average Delay (sec)	LOS	Crit. V/C	Average Delay (sec)	LOS	Crit. V/C
14	El Camino Real (SR 82) SB Ramp & University Avenue/Palm Drive*	AM	20.9	C	0.424	19.0	B	0.516
		PM	24.9	C	0.487	23.5	C	0.553
15	Middlefield Road & University Avenue	AM	27.0	C	0.609	28.1	C	0.690
		PM	27.5	C	0.512	27.7	C	0.638
16	Middlefield Road & Embarcadero Road	AM	50.3	D	0.583	58.1	E	0.792
		PM	36.6	D	0.607	39.5	D	0.758
17	Middlefield Road & Oregon Expressway*	AM	42.8	D	0.754	52.2	D	0.849
		PM	42.9	D	0.688	62.6	E	0.876
18	Embarcadero Road & E. Bayshore Road	AM	31.6	C	0.682	42.3	D	0.865
		PM	40.3	D	0.702	52.4	D	0.894

Notes: All data (level of service, average delay, and critical volume-to-capacity ratio) were calculated with the TRAFFIX software, which incorporates the 2000 Highway Capacity Manual methodology. The VTA CMP guidelines require the use of this methodology to analyze intersections. For the four planning scenarios, the traffic volumes at each intersection, which were used as inputs to the TRAFFIX analysis, were calculated with the Palo Alto travel demand forecasting model.

v/c = volume-to-capacity ratio

*Denotes CMP Intersection

Bold indicates a level of service worse than the standard for that intersection.

Shaded indicates a significant impact.

Source: Hexagon Transportation Consultants, Inc., 2016.

it would be higher than any of the six scenarios. Compared to Scenarios 1 through 6, VMT under the No Growth Scenario would be higher because all of the other scenarios include more housing, and by reducing the jobs/housing imbalance, the planning scenarios (except Scenario 1, which would increase the jobs/housing imbalance compared to existing conditions) would result in some shorter vehicle trips and more trips made by alternative modes. Both shorter trips and the mode shift result in lower VMT per capita. The No Growth Scenario includes the same sustainability measures as Scenario 1, which includes fewer than Scenarios 2 through 6., and which also leads to more mode shift and lower VMT per capita in the other scenarios

Mode Share

The number of transit trips would be 33 percent higher than existing conditions, as more trips would be made on transit due to increased congestion on the region's streets and freeways. The No Growth Scenario includes the same transportation investment and sustainability assumptions included in Scenario 1 but fewer measures when compared to Scenarios 2 through 6. The transit mode share would be the same as Scenario 2 (6.6 percent), and lower than all other scenarios. Conversely, the Drive Alone share is higher under the No Growth Scenario than under all six planning scenarios. This is partly because all the other scenarios (except Scenario 1) include sustainability assumptions to reduce single occupancy vehicle trips. Also, all the other scenarios include

TABLE 3 EXISTING AND 2030 NO GROWTH DAILY MOTOR VEHICLE MILES BY DIRECTIONAL ORIENTATION – CITY + SOI

	Existing ^b		No Growth	
Total Palo Alto+SOI VMT^a	6,391,293	100.0%	6,477,788	100.0%
Internal-External ^b	2,828,732	44.3%	2,883,120	44.5%
External-Internal ^c	3,132,854	49.0%	3,186,869	49.2%
Internal-Internal ^d	429,707	6.7%	407,800	6.3%
Total Motor Vehicle Trips^a	499,013	100.0%	504,725	100.0%
Internal-External ^b	190,992	38.3%	197,633	39.2%
External-Internal ^c	200,982	40.3%	206,448	40.9%
Internal-Internal ^d	107,039	21.5%	100,644	19.9%
Total Average Trip Length [Miles]^e	12.81		12.83	
Internal-External	14.81		14.59	
External-Internal	15.59		15.44	
Internal-Internal	4.01		4.05	
Total Palo Alto+SOI Commercial VMT^f	258,293	100.0%	270,804	100.0%
Internal-External ^b	119,252	46.2%	125,436	46.3%
External-Internal ^c	135,372	52.4%	142,099	52.5%
Internal-Internal ^d	3,670	1.4%	3,269	1.2%
Total Commercial Motor Vehicle Trips^a	9,776	100.0%	10,275	100.0%
Internal-External ^b	4,464	45.7%	4,761	46.3%
External-Internal ^c	4,572	46.8%	4,862	47.3%
Internal-Internal ^d	739	7.6%	652	6.3%
Commercial Average Trip Length [Miles]^e	26.42		26.36	
Internal-External	26.71		26.34	
External-Internal	29.61		29.23	
Internal-Internal	4.96		5.02	

Note: Numbers may not add up to 100% due to rounding.

a. Trips with one trip end outside Palo Alto +SOI were counted as one trip, whereas trips with both ends in Palo Alto+SOI were counted as two trips.

b. "Internal-External" refers to VMT generated by motor vehicle trips that start in Palo Alto+SOI and end outside Palo Alto+SOI.

c. "External-Internal" refers to VMT generated by motor vehicle trips that start outside Palo Alto+SOI and end in Palo Alto+SOI.

d. "Internal-Internal" refers to VMT generated by motor vehicle trips that start and end in Palo Alto+SOI.

e. Average Trip Length is calculated by dividing the Total VMT by the Total Number of Motor Vehicle Trips.

f. Commercial VMT (related to heavy trucks) is not included in "Total Palo Alto+SOI VMT" shown in the table.

g. Existing and 2030 daily motor vehicle miles were calculated by the travel demand forecasting model, which is the forecasting method that has the capability to calculate VMT.

Source: Hexagon Transportation Consultants, Inc., 2015. All data calculated by the Palo Alto travel demand forecasting model, for both 2013 and 2030 with assumptions for each planning scenario in accordance with each scenario's description (e.g., population, jobs, roadway network changes).

TABLE 4 EXISTING AND 2030 NO GROWTH DAILY MOTOR VEHICLE MILES BY DIRECTIONAL ORIENTATION – CITY ONLY

	Existing ^g		No Growth	
Total Palo Alto+SOI VMT^a	5,320,931	100.0%	5,349,838	100.0%
Internal-External ^b	2,410,604	45.3%	2,441,769	45.6%
External-Internal ^c	2,600,249	48.9%	2,612,275	48.8%
Internal-Internal ^d	310,078	5.8%	295,793	5.5%
Total Motor Vehicle Trips^a	432,122	100.0%	436,018	100.0%
Internal-External ^b	171,108	39.6%	175,604	40.3%
External-Internal ^c	177,227	41.0%	180,501	41.4%
Internal-Internal ^d	83,786	19.4%	79,912	18.3%
Total Average Trip Length [Miles]^e	12.31		12.27	
Internal-External	14.09		13.90	
External-Internal	14.67		14.47	
Internal-Internal	3.70		3.70	
Total Palo Alto+SOI Commercial VMT^f	240,869	100.0%	253,343	100.0%
Internal-External ^b	111,444	46.3%	117,612	46.4%
External-Internal ^c	126,369	52.5%	132,991	52.5%
Internal-Internal ^d	3,056	1.3%	2,740	1.1%
Total Commercial Motor Vehicle Trips^a	9,182	100.0%	9,671	100.0%
Internal-External ^b	4,222	46.0%	4,508	46.6%
External-Internal ^c	4,327	47.1%	4,603	47.6%
Internal-Internal ^d	634	6.9%	561	5.8%
Commercial Average Trip Length [Miles]^e	26.23		26.20	
Internal-External	26.40		26.09	
External-Internal	29.21		28.90	
Internal-Internal	4.82		4.89	

Note: Numbers may not add up to 100% due to rounding.

a. Trips with one trip end outside Palo Alto +SOI were counted as one trip, whereas trips with both ends in Palo Alto+SOI were counted as two trips.

b. "Internal-External" refers to VMT generated by motor vehicle trips that start in Palo Alto+SOI and end outside Palo Alto+SOI.

c. "External-Internal" refers to VMT generated by motor vehicle trips that start outside Palo Alto+SOI and end in Palo Alto+SOI.

d. "Internal-Internal" refers to VMT generated by motor vehicle trips that start and end in Palo Alto+SOI.

e. Average Trip Length is calculated by dividing the Total VMT by the Total Number of Motor Vehicle Trips.

f. Commercial VMT (related to heavy trucks) is not included in "Total Palo Alto+SOI VMT" shown in the table.

g. Existing and 2030 daily motor vehicle miles were calculated by the travel demand forecasting model, which is the forecasting method that has the capability to calculate VMT.

Source: Hexagon Transportation Consultants, Inc., 2015. All data calculated by the Palo Alto travel demand forecasting model, for both 2013 and 2030 with assumptions for each planning scenario in accordance with each scenario's description (e.g., population, jobs, roadway network changes).

more housing, and reducing the job/housing imbalance results in some shorter trips that may be made by walking or biking. In summary, the No Growth Scenario would have a higher percentage of drive alone compared to Scenarios 1 through 6, only lower than existing conditions.

TRANS-3	Implementation of the project would cause a freeway segment or ramp to drop below its level of service standard, or deteriorate operations that already operate at a substandard level of service. (Significant and Unavoidable – All Six Scenarios)
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Freeway segment impacts are shown in Table 5. Following the same methodology as was used for the other six scenarios, the freeway analysis examines the number of Palo Alto trips (trips going to and/or from Palo Alto) on a segment and compares that number to the segment's capacity in order to determine if there would be an impact. As listed below and shown in Table 5, the number of freeway segments impacted under the No Growth Scenario would be somewhat less than in the six scenarios evaluated as explained below.

The No Growth Scenario would avoid impacts at the following segments that were identified to operate at substandard levels of service under other scenarios:

- Southbound US 101, between Oregon Expressway and San Antonio Road, PM peak hour (all six scenarios)
- Southbound US 101, between San Antonio Road and Rengstorff Avenue, PM peak hour (Scenarios 2 through 5)
- Northbound I-280, between Sand Hill Road and Woodside Road (SR 84), PM peak hour (all six scenarios)

The No Growth Scenario would result in fewer freeway segment impacts because it would generate substantially fewer Palo Alto-related trips than the other six scenarios. However, this does not mean that there would be fewer vehicles on these freeway segments or that they would be less congested. As soon as the travel demand forecasting model removes a Palo Alto-related trip from the freeway, that trip is replaced with a non-Palo Alto-related trip, because travel demand on the freeways is projected to be so high in the year 2030. Said another way, levels of freeway congestion are projected to be so high in 2030 that some travelers will choose other modes to avoid the freeway. If some trips from Palo Alto were to be taken off the road, travelers who would otherwise take other modes would then be expected to "fill in" and use up any freeway capacity that Palo Alto-related drivers aren't using.

The No Growth Scenario would not avoid impacts at the following segments that were identified to operate at substandard levels of service under Scenarios 1 through 6:

- Northbound US 101, between Rengstorff Avenue and San Antonio Road, both AM and PM peak hours (all six scenarios)
- Northbound US 101, between San Antonio Road and Oregon Expressway, AM peak hour (all six scenarios)

TABLE 5 NO GROWTH SCENARIO FREEWAY SEGMENT EVALUATION

Freeway	Segment	Dir.	Total # of Lanes	Capacity (vph) ^a	1% of Capacity	Peak Hour	Existing LOS ^b	Increase in Palo Alto Volumes
US 101	Rengstorff Avenue to San Antonio Road	NB	4.5	9,700	97	AM	F	156
						PM	F	143
US 101	San Antonio Road to Oregon Expressway	NB	4.5	9,700	97	AM	F	213
						PM	E	254
US 101	Oregon Expressway to Embarcadero Road	NB	4.5	9,700	97	AM	D	32
						PM	D	186
US 101	Embarcadero Road to University Ave	NB	4.5	9,700	97	AM	F	-37
						PM	F	136
US 101	University Avenue to Willow Road	NB	4.5	9,700	97	AM	F	-102
						PM	F	-209
US 101	Willow Road to University Avenue	SB	4.5	9,700	97	AM	F	-444
						PM	F	-91
US 101	University Avenue to Embarcadero Road	SB	4.5	9,700	97	AM	F	-501
						PM	F	-149
US 101	Embarcadero Road to Oregon Expressway	SB	4.5	9,700	97	AM	E	-141
						PM	F	-284
US 101	Oregon Expressway to San Antonio Ave	SB	4.5	9,700	97	AM	E	2-4
						PM	F	59
US 101	San Antonio Avenue to Rengstorff Ave	SB	4.5	9,700	97	AM	D	171
						PM	F	33
I-280	El Monte to Page Mill Road	NB	4	9,200	92	AM	D	-376
						PM	C	68

TABLE 5 NO GROWTH SCENARIO FREEWAY SEGMENT EVALUATION

Freeway	Segment	Dir.	Total # of Lanes	Capacity (vph) ^a	1% of Capacity	Peak Hour	Existing LOS ^b	Increase in Palo Alto Volumes
I-280	Page Mill Road to Alpine Road	NB	4	9,200	92	AM	C	-34
						PM	D	-125
I-280	Alpine Road to Sand Hill Road	NB	4	9,200	92	AM	A	-67
						PM	F	-164
I-280	Sand Hill Road to Woodside Road (SR 84)	NB	4	9,200	92	AM	A	285
						PM	F	34
I-280	Woodside Road (SR 84) to Sand Hill Road	SB	4	9,200	92	AM	A	90
						PM	F	178
I-280	Sand Hill Road to Alpine Road	SB	4	9,200	92	AM	A	-104
						PM	F	-28
I-280	Alpine Road to Page Mill Road	SB	4	9,200	92	AM	D	-112
						PM	C	-190
I-280	Page Mill Road to El Monte Avenue	SB	4	9,200	92	AM	C	-33
						PM	F	-437

Notes: **Bold and shaded** indicates a significant impact. For segments already operating at LOS F, an impact occurs if the additional trips generated by a scenario are greater than 1% of the segment's capacity. For segments not already operating at LOS F, an impact occurs if the scenario would cause the LOS to drop to F. It was assumed that if the additional trips generated by a scenario were greater than 10% of capacity, the level of service would drop by one grade level. If additional trips were greater than 20% of capacity, the level of service would drop by two grade levels.

a. Capacity is based on the capacities cited in the VTA's Transportation Impact Guidelines, October 2014.

b. Sources for Existing LOS:

Santa Clara County LOS levels taken from the VTA CMP Monitoring Report, 2013.

San Mateo County LOS levels for US 101 taken from a recent TIA prepared for a proposed project.

San Mateo County LOS levels for I-280 taken from C/CAG 2013 Monitoring Report.

Source: Hexagon Transportation Consultants, Inc., 2016.

- Northbound US 101, between Embarcadero Road and University Avenue, PM peak hour (all six scenarios)
- Southbound I-280, between Woodside Road (SR 84) and Sand Hill Road, PM peak hour (all six scenarios)

Overall, the significant and unavoidable impact would remain because four freeway segments would operate at a substandard level of service even if no growth were to occur in Palo Alto.

TRANS-6 Implementation of the project would impede the operation of a transit system as a result of congestion. (Significant and Unavoidable – All Six Scenarios)

The No Growth Scenario would substantially impede the operation of the transit system if transportation investments or growth assumed during the life of the plan would result in substantial increased levels of congestion at intersections and roadway segments where bus and shuttle services operate.

Table 6 presents the average daily traffic (ADT) on roadway segments under the No Growth Scenario. Under the No Growth Scenario, the ADT on nearly all roadway segments would be higher in the year 2030 than under existing conditions. Specifically, No Growth Scenario ADT would be higher than existing ADT on 11 out of 13 segments, which indicates that the overall level of traffic in 2030 would increase due to previously approved development in Palo Alto and due to regional growth. The roadway LOS under the No Growth Scenario would be similar to the six scenarios evaluated and would not improve LOS at roadways that are deficient. Like the intersection impact analysis, this result indicates that the city’s roadways will become more congested because Palo Alto is part of a region that is growing, regardless of whether the city approves more development or not.

Table 2 presents the intersection LOS for the No Growth Scenario. Under the No Growth Scenario, five of the 14 intersections analyzed in the February 2016 Draft EIR and one of the four intersections added as part of the Supplement to the Draft EIR would have a substandard level of service and would experience a significant impact.

Transit services that travel on those roadway segments and use those impacted intersections would be slowed down by the increased congestion. Thus, a significant impact would still occur under No Growth Scenario and this significant and unavoidable impact would not be avoided even if there is no growth in Palo Alto.

TABLE 6 ADT AND ROADWAY SEGMENT LEVEL OF SERVICE

#	Street	From	To	Jurisdiction	# of Lanes	Capacity	Existing Conditions		No Growth	
							Existing ADT	LOS	ADT	LOS
1	Sand Hill Rd	I-280	El Camino Real	City	4	38,200	29,035	D	35,473	E
2	El Camino Real ^a	Sand Hill Rd	Page Mill Rd	Caltrans	6	59,300	35,862	C	41,213	D
3	El Camino Real ^a	Page Mill Rd	San Antonio Rd	Caltrans	6	59,300	30,443	B	34,934	C
4	Page Mill Rd ^{a,c}	I-280	El Camino Real	County	4	39,888	34,204	E	35,860	E
5	Arastradero Rd	I-280	El Camino Real	City	4	38,200	15,144	A	20,183	B
6	Alma St	University Ave	San Antonio Rd	City	4	38,200	28,475	D	32,894	E
7	Middlefield Rd	University Ave	San Antonio Rd	City	2	17,300	12,492	D	12,492	D
8	University Ave ^b	El Camino Real	US 101	City	2	17,300	19,022	F	19,719	F
9	Embarcadero Rd	El Camino Real	US 101	City	4	38,200	24,859	C	31,429	D
10	Oregon Expwy ^a	El Camino Real	US 101	County	4	39,888	30,925	D	30,925	D
11	Charleston Rd	El Camino Real	San Antonio Rd	City	2	17,300	12,371	D	14,699	D
12	San Antonio Rd ^a	El Camino Real	US 101	City	4	38,200	35,885	E	37,436	E
13	Foothill Expwy/ Junipero Serra ^{a,d}	Sand Hill Rd	Arastradero Rd	County/City	4, 2	23,000	15,580	C	19,447	D

a. These roadway segments are part of the VTA CMP System Roadway Network.

b. Segment LOS **bolded and shaded** represents LOS below acceptable standards.

c. According to the "Page Mill Road Expressway Corridor Study Report," Santa Clara Roads and Airports Department, June 2015, the portion of Page Mill Road between I-280 and Porter Drive would be expanded from 4 to 6 lanes. However, the location where the ADT volume was counted (between Hansen Way and Ramos Way) would still have 4 lanes, so the capacity is based on four lanes under all scenarios.

d. The portion of this segment east of Page Mill Road is called Foothill Expressway, has four lanes, and is a County Expressway. The portion of this segment west of Page Mill Road is called Junipero Serra Boulevard, has two lanes, and is not a County Expressway. The location where the ADT volume was counted (on Junipero Serra Boulevard, between Stanford Avenue and Page Mill Road) has two lanes. The capacity has been estimated as 23,000 because of the longer green time for Junipero Serra Boulevard at signals.

Source: Hexagon Transportation Consultants, Inc., 2016.