



Technical Memorandum

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Subject: **Traffic Growth Percentage Along East Avenue**

This technical memorandum summarizes and recommends a traffic growth percentage that will be utilized to establish a baseline prior to the COVID-19 pandemic conditions. TJKM reviewed various data sources and determined four methods to determine an appropriate growth percentage along East Avenue. The four methods are listed below:

1. Growth percentage between historical Turning Movement Counts (TMC) and 2019 TMC (wherever data is available)
2. Growth percentage between 2013 Average Daily Traffic (ADT) and 2016 ADT
3. Growth percentages utilized in previous Traffic Impact Studies conducted by TJKM in the City of Livermore
4. Growth percentage obtained from the Alameda County Transportation Commission (ACTC) Travel Demand Model

1. Growth Percentage from Turning Movement Counts

TJKM collected TMC's from various sources, including the City of Livermore, Traffic Data Collection Firms, and Traffic Impact Studies within the vicinity of East Avenue. Historical Data was found for the intersections of East Avenue/Maple Street, East Avenue/Dolores Street, East Avenue/Hillcrest Avenue, and East Avenue/Vasco Road. The annual growth rate was determined between the historical year (2014 or 2016) and the most recent data available (2018 or 2019). **Table 1** through **4** summarizes the growth rate for each intersection, respectively, for the a.m. and p.m. peak hour.

Table 1: East Avenue and Maple Street Growth Rate

A.M. Peak Hour														
2016 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	0	0	0	140	0	11	0	405	0	0	633	365	1,554	-0.8%
2019 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	
	0	0	0	118	0	14	1	459	0	0	591	335	1,518	
P.M. Peak Hour														
2016 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	0	0	0	216	0	5	0	675	0	0	504	233	1,633	0.5%
2019 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	
	0	0	0	206	0	4	0	688	0	0	562	198	1,658	

Table 2: East Avenue and Dolores Street Growth Rate

A.M. Peak Hour														
2016 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	55	0	150	2	0	2	0	592	30	120	977	0	1,928	-9.4%
2018 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	
	45	0	142	0	0	2	1	531	24	124	714	0	1,583	
P.M. Peak Hour														
2016 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	36	0	186	0	0	0	0	862	71	126	775	1	2,057	0.2%
2018 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	
	44	0	201	0	0	0	0	912	69	123	715	1	2,065	

Table 3: East Avenue and Hillcrest Avenue Growth Rate

A.M. Peak Hour														
2016 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	106	13	20	113	9	55	28	698	20	17	917	44	2,040	
2019 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	-2.4%
	93	10	35	79	7	41	28	654	22	30	878	19	1,896	
P.M. Peak Hour														
2016 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	43	5	7	77	2	76	86	968	49	6	749	54	2,122	
2019 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	-2.5%
	43	8	6	76	10	68	91	760	56	11	775	64	1,968	

Table 4: East Avenue and Vasco Road Growth Rate

A.M. Peak Hour														
2014 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	81	206	186	182	312	298	230	268	39	5	6	14	1,827	
2019 AM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	0.0%
	83	211	212	248	229	261	184	331	24	6	14	26	1,829	
P.M. Peak Hour														
2014 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	% Growth per year
	58	342	7	4	272	221	315	19	76	149	329	212	2,004	
2019 PM	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total Entering Volume	2.2%
	63	240	3	20	323	281	280	18	74	225	390	313	2,230	

Growth rates at the study intersections are inconsistent, as some intersections have experienced a negative growth rate in one peak hour and a positive growth rate in the other. For example, the intersection of East Avenue/Dolores Street has a negative growth rate of -9.4% in the a.m. peak hour and a positive growth rate of 0.2% in the p.m. peak hour. The intersection of East Avenue/Maple Street experiences a similar trend, although not as drastic as Dolores Street.

The intersection of East Avenue/Hillcrest Avenue experiences a negative growth rate of about 2.5% in both peak hours while East Avenue/Vasco Road has seen no growth in the a.m. peak hour, but a growth of 2.2% in the p.m. peak hour.

2. Growth Percentage from ADT

TJKM compared the historical ADT counts along 3 segments on East Avenue. The ADT data was available on the City of Livermore website for 2013 and 2016. The annual growth rate along the segments is presented in **Table 5**. As shown in the table, the growth rate was between 2-3% throughout the corridor and the average growth rate is approximately 2.3%.

Table 5: ADT Segment Growth Rate

	Segment	2013	2016	Growth
East Avenue	West of Jensen St	19,706	21,269	2.6%
	West of Mines Road	16,919	17,842	1.8%
	West of research Drive	10,276	11,032	2.4%
Average Growth Rate				2.3%

3. Growth Percentage from Traffic Impact Studies

Table 6 presents the growth rates that was used in previous traffic impact studies for developments in the City of Livermore that were prepared by TJKM. It should be noted that the growth rate was applied to existing traffic volumes to project cumulative conditions (2035 or 2040). The growth rates were furnished and approved by City Staff at the time the studies were being conducted.

Table 6: Growth Percentage from Traffic Studies

Date	Study	Growth Percentage
February 2018	Staybridge Hotel Development	2%
August 2018	Warehouse Development at Vasco Road & Las Positas Road	2%
February 2019	Prologis Warehouse Development	2%
August 2019	Livermore Wine Country Inn	2%
November 2019	Holiday Inn Express & Suites	1%
April 2020	Hawthorne Technology Center II Warehouse Development	2%

4. Growth Percentage from ACTC Travel Demand Model

Table 7 presents the growth rate that was obtained from the ACTC Travel Demand Model. The model base year was 2010 and the horizon year was 2040, and the volume represents the segment of East Avenue next to Livermore High School. The ACTC Model produced an annual growth rate of approximately 1.34%.

Table 7: Growth Percentage from ACTC Model

Roadway Segment	Model (2010)	Model (2040)	Model Difference	Growth Rate
East Avenue	16,192	24,147	7,955	1.34%

Recommendation

Based on the available data sources, TJKM recommends applying an average annual growth percentage of 1.3 % per year, as this growth is consistent with the expected growth around East Avenue. Most of the land uses in the project area are built out, therefore traffic growth is not expected to increase significantly.