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## MEMORANDUM

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From: James M. Daisa, PE  
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**RE: JOHNSON ROAD INDUSTRIAL DEVELOPMENT – ADDENDUM TO THE JANUARY 29, 2024 JOHNSON ROAD INDUSTRIAL BUILDING (WAREHOUSE) DRAFT TRAFFIC IMPACT ANALYSIS, TOWN OF APPLE VALLEY CA (A.P.N. 0463-213-26, 27, and 28)**

This memorandum is an addendum to the above-mentioned traffic analysis that evaluates a change in the size of the proposed warehouse that occurred after the submittal of the draft TIA in January of 2024. The most recent site plan includes a 404,057 square foot warehouse whereas the draft TIA studied a previous design with a larger 410,241 square foot warehouse, a reduction of 6,184 square feet.

This addendum evaluates the incremental change in trip generation and in vehicle miles traveled (VMT) to determine if the change in floor area would substantially change the outcome of the analysis and study's recommendations.

### 1. Summary of Findings

#### Comparison of Trip Generation and Potential Effect on Intersection Level of Service

A comparison of the estimated trip generation between the previously studied warehouse and the current smaller proposed warehouse found that the magnitude of the incremental decrease in peak hour trips (and conversion to Passenger Car Equivalents) is small and would have a negligible effect on the delay and level of service presented in the 2024 traffic impact analysis nor does it change the study's recommendations. The details of the trip generation comparison are presented in Section 2.

#### Effect of the Increase in Warehouse Employees on Vehicle Miles Traveled (VMT)

An estimate of the VMT generated by the incremental decrease in warehouse employees due to the reduction in the proposed floor area, when added to the project-generated VMT of the previously studied warehouse, does not change the metric for project-generated VMT (Project VMT / Service Population) nor does it change the same metric under "Project Effect on VMT" evaluation. The details of the VMT re-analysis are presented in Section 3.

#### Conclusion

An analysis of the incremental change in trip generation and VMT of the revised site plan decreasing from a 410,241 to a 404,057 square foot warehouse has a negligible effect on the Draft Traffic Impact Analysis report prepared in January 2024 and would not change the findings or recommendations of the report.

## 2. Comparison of Trip Generation and Potential Effect on Intersection Level of Service

The average daily and peak hour trip generation was estimated for the Johnson Road industrial development site plan with a smaller warehouse floor area of 404,057 square feet and compared to the trip generation previously studied for a 410,241 square foot warehouse, a reduction of 6,184 square feet. The comparison includes vehicular trip generation and conversion to passenger car equivalents (PCEs) using the same rates and conversion factors used in the analysis of the previously studied warehouse. The trip generation comparison is shown in **Table 1**.

**Table 1: Estimated Trip Generation of Proposed Johnson Road Industrial - Apple Valley**

Land Use	Gross Floor Area (KSF)	Daily	AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
			In	Out	Total	In	Out	Total
<b>Warehouse</b> Average of Trip Generation Rates from Five ITE Warehouse Land Use Categories	404.057	Vehicle Trip Generation Rates (Trips Per 1,000 Square Feet of Gross Floor Area)						
		2.36	0.18	0.06	0.24	0.07	0.17	0.24
		Total Vehicle Trip Generation						
		954	75	22	97	27	70	97
	Mode Share	Project Trip Generation by Vehicle Type						
Passenger Cars (Percent of Total)	74.21%	708	55	17	72	20	52	72
2-Axle Trucks (Percent of Total)	4.55%	43	3	1	4	1	3	4
3-Axle Trucks (Percent of Total)	4.18%	40	3	1	4	1	3	4
4-Axle Trucks (Percent of Total)	17.04%	162	13	4	17	5	12	17
	PCE Factor	Project Trip Generation in Passenger Car Equivalents (PCE)						
Passenger Cars)	1	708	55	17	72	20	52	72
2-Axle Trucks	1.5	65	5	2	7	2	5	7
3-Axle Trucks (Percent of Total)	2	80	6	2	8	2	6	8
4-Axle Trucks (Percent of Total)	3	487	38	11	50	14	36	50
<b>Total Passenger Car Equivalents (PCE)</b>		<b>1,340</b>	<b>105</b>	<b>31</b>	<b>136</b>	<b>38</b>	<b>98</b>	<b>136</b>
<b>Trip Generation (410,241 SF Site Plan)</b>		<b>968</b>	<b>76</b>	<b>23</b>	<b>98</b>	<b>28</b>	<b>71</b>	<b>98</b>
<b>Difference in Trip Generation</b>		<b>-15</b>	<b>-1</b>	<b>0</b>	<b>-1</b>	<b>0</b>	<b>-1</b>	<b>-1</b>
<b>Percent Difference in Trip Generation</b>		<b>-2%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>
<b>Passenger Car Equivalents (410,241 SF Site Plan)</b>		<b>1,360</b>	<b>107</b>	<b>32</b>	<b>138</b>	<b>39</b>	<b>100</b>	<b>138</b>
<b>Difference in PCE's</b>		<b>-21</b>	<b>-2</b>	<b>0</b>	<b>-2</b>	<b>-1</b>	<b>-2</b>	<b>-3</b>
<b>Percent Difference in PCE's</b>		<b>-2%</b>	<b>-2%</b>	<b>0%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>
Notes: KSF = Thousands of Square Feet. 1. AM / PM Peak Hour of Adjacent Street Traffic = Trip generation coinciding with the highest hourly volumes of traffic on the adjacent streets during the AM (7:00 AM and 9:00 AM) and PM (4:00 PM and 6:00 PM) commuter peak periods. 2. Source of trip generation rates: Institute of Transportation Engineers (ITE) Trip Generation (11th Edition). Average rates for ITE's five types of warehouses in land use categories 150, 154,155, 156, 157 excluding High-Cube Fulfillment Center Warehouse - Sort Facility. 3. Source of passenger car / truck mode share (percentage of total): Fontana Truck Trip Generation Study for Heavy Warehouse Uses (August 2003). Passenger Car Equivalents (PCE) factors: Industry standard values utilized in neighboring jurisdictions.								

As shown in the table above, the difference in peak hour trips equals one or fewer vehicles in the AM and PM peak hours. The difference in passenger car equivalents (PCEs), used in analyzing intersection capacity, equals between two and three PCEs in each peak hour, about a 2% decrease. After distributing the incremental decrease in PCE traffic to the study intersections, the very small decrease in traffic volume (in PCEs) dissipates to zero at Johnson Road and Dale Evans Parkway. The remaining study intersections do not experience any change in PCEs. The reduction in PCE's is inconsequential at the Johnson Road and Dale Evans Parkway intersection that, with the implementation of mitigation measures, operates at LOS B in both peak hours.

### 3. Effect of the Decrease in Warehouse Employees on Vehicle Miles Traveled (VMT)

The Town of Apple Valley uses two metrics for determining if a development project would potentially have a significant transportation impact on the environment based on vehicle miles traveled (and indirectly on greenhouse gas emissions). The metrics are:

- a) Project-generated VMT per service population compared to the same metric under the Town of Apple Valley’s General Plan Buildout (which is considered the threshold of significance).
- b) Project’s effect on VMT which compares VMT per service population calculated as the Town’s total roadway VMT divided by the Town’s service population (residents + employees) with and without the project.

If the project causes the metrics in either of the above conditions to exceed the threshold condition, it is considered a significant impact under CEQA.

#### Estimated Decrease in Project-Generated VMT

Estimating the incremental decrease in VMT for the project’s reduced size requires a conversion of the project’s land use from floor area to employees and using previously derived ratios to estimate VMT. **Table 2** shows the derivation of the decrease in the project-generated VMT due to the decrease in employees.

**Table 2: Derivation of Incremental Decrease in Project-Generated VMT**

Decrease in Floor Area	-6,184	Square Feet	Between the current 404,057 SF warehouse and 410,241 SF warehouse
Population	0	Residents	No residents in Project
Decrease in Employment	-5	Employees	See footnote [a] for conversion
Service Population	-5	Employees	Service population = residents + employees
2016 VMT / Service Population	33.1		Metric based on previously studied warehouse
2040 VMT / Service Population	31.6		Metric based on previously studied warehouse
2016 Estimated VMT from Decrease in Employees	-171	VMT	VMT = Service Population x 2016 VMT/Service Population
2040 Estimated VMT from Decrease in Employees	-164	VMT	VMT = Service Population x 2040 VMT/Service Population
Footnotes:			
[a] Source: Employment Density Study Summary Report. The Natelson Company. Prepared for the Southern California Association of Governments (SCAG). Table 8A Derivation of Sq Ft Per Employee Based on Weighted Average Employees per Acre and Floor Area Ratio. October 2001.			

The reduction of five employees is expected to decrease the project-generated VMT by 171 in the baseline condition (2016) and by 164 in the planning horizon condition (2040).

#### Comparison of Change in Project Metrics and Town of Apple Valley Significance Criteria

**Table 3**, on the following page, presents a revised project-generated VMT analysis with the incremental decrease in project-generated VMT and a recalculation of VMT per service population for the baseline 2016 and future 2040 conditions. As shown in the table, the Revised VMT Per Service Population (33.0 in 2016 and 31.6 in 2040) does not exceed the Town of Apple Valley’s significance threshold of 33.2. Therefore, the change in the proposed warehouse floor area results in a less-than-significant impact based on this criterion.

**Table 4**, on the following page, presents the results of the revised project “effect” on VMT where the reduced project-generated VMT is added to the Town’s roadway VMT generated using a previous site plan and a recalculation of VMT per service population for the baseline 2016 and future 2040 conditions. As shown in the table, the “with project” 2016 and 2040 Revised VMT Per Service Population metrics of 9.3 and 10.7 respectively, do not exceed the “without project” metrics for the same years. Therefore, the decrease in the proposed warehouse floor area results in a less-than-significant impact based on this criterion.

**Table 3: Revised Project VMT Analysis**

2016	Project	Town of Apple Valley General Plan Buildout (Threshold)*
Population	0	
Employment (previous site plan)	180	
Employment (difference)	-5	
Project Service Population	175	
OD VMT (previous site plan)	5,950	
Estimated VMT (difference)	-171	
OD VMT Per Service Population	33.0	33.2

  

2040	Project	Town of Apple Valley General Plan Buildout (Threshold)*
Population	0	
Employment (previous site plan)	180	
Employment (difference)	-5	
Project Service Population	175	
OD VMT (previous site plan)	5,694	
Estimated VMT (difference)	-164	
OD VMT Per Service Population	31.6	33.2

\* Threshold value obtained from SBCTA VMT Screening Tool (2023): <https://www.gosbcta.com/vmtscreening>

**Table 4: Revised Analysis of Roadway VMT Within the Town of Apple Valley**

2016	With Project	Without Project
Roadway VMT (previous site plan)	849,362	847,823
Project VMT (difference)	-171	0
Total Roadway VMT**	849,191	847,823
Service Population (previous site plan)	91,293	91,113
Project Service Population	175	0
Total Service Population (with Project)	91,468	-
VMT Per Service Population	9.3	9.3

  

2040	With Project	Without Project
Roadway VMT (previous site plan)	1,361,983	1,362,981
Project VMT (difference)	-164	0
Total Roadway VMT**	1,361,819	1,362,981
Service Population (previous site plan)	126,986	126,806
Project Service Population	175	0
Total Service Population (with Project)	127,161	-
VMT Per Service Population	10.7	10.7

\*\* The estimated project VMT includes miles of travel outside the limits of the Town of Apple Valley and, when combined with the Town's Roadway VMT, results in a conservative estimate.