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Date:	February 22, 2023
Prepared by:	Daji Yuan, Ph.D., EPD Solutions Inc
To:	Traffic Division, City of Orange
Site:	Collins Logistics Center
Subject:	Trip Generation and Level of Service (LOS) Screening Analysis

This technical memorandum evaluates the need to prepare a level of service (LOS) analysis for the proposed Collins Logistics Center. The 6.0-acre project site is located at 500 West Collins Avenue, City of Orange. The project site comprises of two parcels (APNs – 386-581-18 and 386-561-02). The northern parcel currently contains a 20,034 square feet (SF) office building and the southern parcel currently contains a 32,400 SF warehouse. The project would demolish the current buildings and construct a warehouse totaling 128,953 SF. The warehouse includes 4,500 SF of ground floor office space, 4,500 SF of 2nd story office space and 119,953 SF of warehouse space, consisting of 10 percent cold storage (12,895 SF). The project site plan is shown in Figure 1. This memo will evaluate the project using the City of Orange Guidelines for Traffic Impact Analysis (TIA) (July, 2020).

Project Trip Generation and LOS Screening

The existing and project trip generation were prepared using trip rates from the Institute of Transportation Engineers (ITE)[1]. The trip rates for General Office Building (Land Use Code 710) and Warehousing (Land Use Code 150) were used to evaluate the existing land uses and proposed warehousing land uses respectively. Project truck trips were determined using data from the South Coast Air Quality Management District (SCAQMD) *Warehouse Truck Trip Study Data Results and Usage*[2].

Table 1 presents the net trip generation estimate for the proposed project. As shown in Table 1, the project is forecast to generate 60 net increase daily Passenger Car Equivalent (PCE) trips, including 2 net decrease PCE trips during the AM and 1 net increase PCE trips during the PM peak hours.

As per the City of Orange Guidelines for TIA (July, 2020) Section 1, a complete LOS TIA is not required if the project meets any of the following criteria:

1. The project generates less than 100 peak hour trips.
2. The project generates 1,600 Average Daily Trips (ADT) on the Arterial Highway System.
3. The project adds 51 or more peak hour trips to any intersection.
4. Proposed projects are variations from the standards and guidelines.
5. City Traffic Engineer determines the proposed project has unique characteristics that warrant evaluation.

The proposed project is anticipated to generate 2 net decrease PCE trips during the AM and 1 net increase PCE trips during the PM peak hours, thus, the project generates less than 100 peak hour trips. The project generates 60 net increase PCE daily trips, which is less than 1,600 ADT on the Arterial Highway System. In addition, the project will not add 51 or more peak hour trips to any intersection. The proposed project is consistent with the current general plan land use and the standards and guidelines associated Light Industrial

[1] *Trip Generation Manual*, 11th Edition, Institute of Transportation Engineers (ITE). 2021.
[2] *SCAQMD Warehouse Truck Trip Study Data Results and Usage, July 17, 2014.*

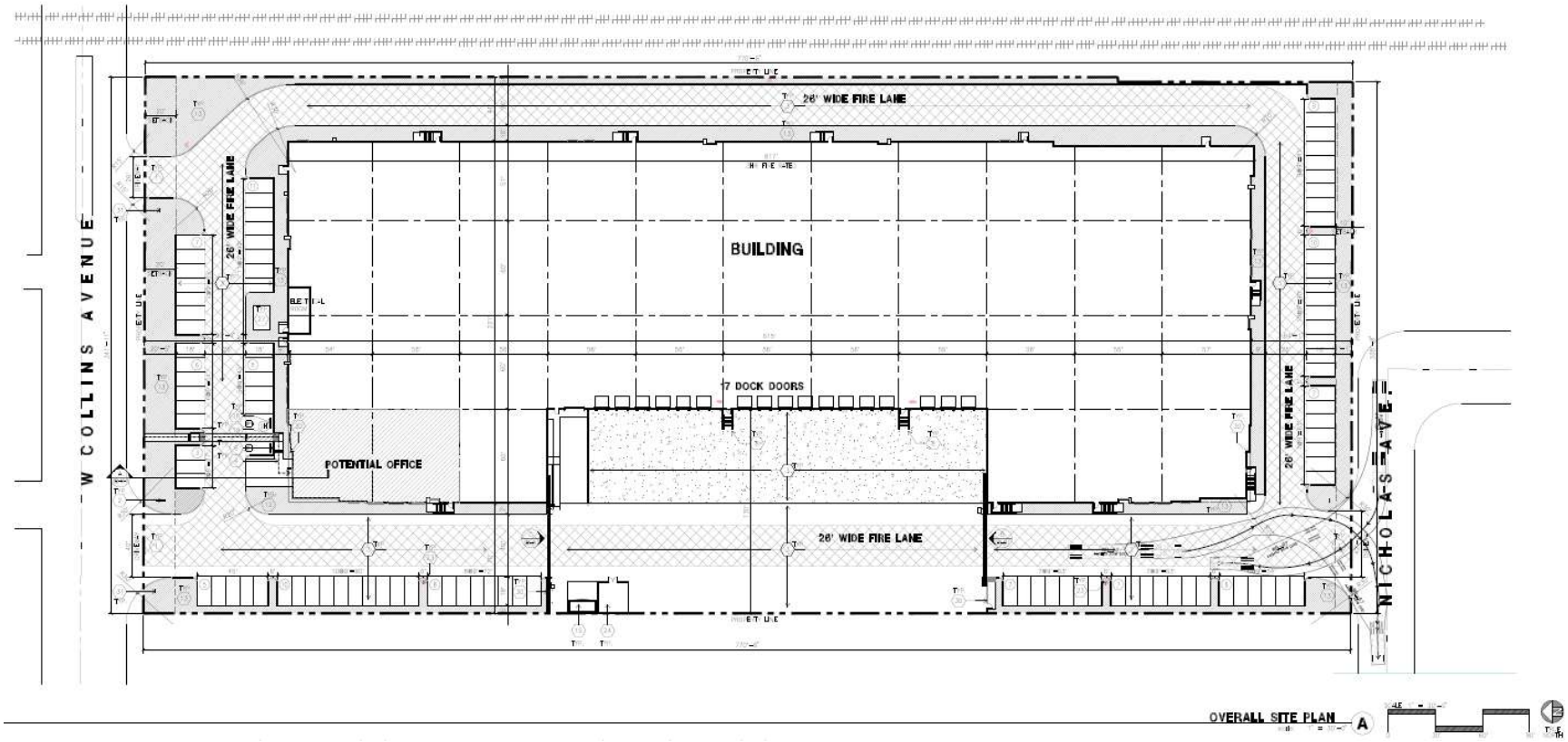
(LI) land use. Finally, the proposed project does not have unique characteristics that warrant evaluation. Therefore, the proposed project would not require a complete LOS analysis as per the City's guidelines.

Summary

The project was evaluated using the City's Guidelines for TIA screening thresholds to determine if the project would require a level of service (LOS) analysis. The project does not meet any of the LOS criteria that requires a complete LOS TIA. Therefore, the project would not be required to prepare a LOS traffic analysis.

If you have any questions about this information, please contact me at (949) 794-1180 or daji@epdsolutions.com.

Figure 1: Project Site Plan



Source: HPA Architecture

Table 1: Project Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Trip Rates									
General Office Building[1]		TSF	10.84	1.34	0.18	1.52	0.24	1.20	1.44
Warehousing[2]		TSF	1.71	0.13	0.04	0.17	0.05	0.13	0.18
Existing Trip Generation									
Existing Office Buidings[1]	20.034	TSF	217	27	4	31	5	24	29
Existing Warehouse[2]	32.400	TSF	55	4	1	5	2	4	6
Vehicle Mix[3]		***Percent[3]***							
Passenger Vehicles		72.50%	40	3	1	4	1	3	4
2-Axle truck		4.60%	2	0	0	0	0	0	0
3-Axle truck		5.70%	3	0	0	0	0	0	0
4+-Axle Trucks		17.20%	10	1	0	1	0	1	1
Existing Warehouse Trip Generation		100%	55	4	1	5	1	4	5
PCE Trip Generation[5]		***PCE Factor***							
Passenger Vehicles		1.0	40	3	1	4	1	3	4
2-Axle truck		1.5	3	0	0	0	0	0	0
3-Axle truck		2.0	6	0	0	0	0	0	0
4+-Axle Trucks		3.0	29	3	0	3	0	3	3
Existing Warehouse PCE Trip Generation			78	6	1	7	1	6	7
Total Existing Trip Generation			**295**	**33**	**5**	**38**	**6**	**30**	**36**
Project Trip Generation									
Proposed Warehouse[2]	128.953	TSF	221	17	5	22	6	17	23
Vehicle Mix[4]		***Percent[4]***							
Passenger Vehicles		55.30%	122	9	3	12	4	9	13
2-Axle truck		15.50%	34	3	1	4	1	3	4
3-Axle truck		4.90%	11	1	0	1	0	1	1
4+-Axle Trucks		24.30%	54	4	1	5	2	4	6
Project Trip Generation		100%	221	17	5	22	6	17	23
PCE Trip Generation[5]		***PCE Factor***							
Passenger Vehicles		1.0	122	9	3	12	4	9	13
2-Axle truck		1.5	51	4	2	6	2	3	5
3-Axle truck		2.0	22	2	0	2	1	1	2
4+-Axle Trucks		3.0	161	12	4	16	5	12	17
Project PCE Trip Generation			**356**	**27**	**9**	**36**	**12**	**25**	**37**
Net Trip Generation			**-52**	**-14**	**0**	**-14**	**0**	**-11**	**-11**
Net PCE Trip Generation			**61**	**-6**	**4**	**-2**	**6**	**-5**	**1**

TSF = Thousand Square Feet

PCE = Passenger Car Equivalent

[1] Trip rates from the Institute of Transporation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 710 -General Office

[2] Trip rates from the Institute of Transporation Engineers, Trip Generation Manual, 11th Edition, 2021. Land Use Code 150 -Warehousing.

[3] Vehicle Mix from the SCAQMD Warehouse Truck Trip Study Data Results and Usage, July 2014. Classification: Without Cold Storage

[4] Vehicle Mix from the SCAQMD Warehouse Truck Trip Study Data Results and Usage, July 2014. Classification: With Cold Storage

[5] Passenger Car Equivalent (PCE) factors from the San Bernardino County CMP, Appendix B - Guidelines for CMP Traffic Impact Analysis Reports in San Bernardino County, 2016.