August 29, 2022

Mr. Jay Nelson
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

<u>8TH STREET INDUSTRIAL TRAFFIC ANALYSIS SCOPING AGREEMENT</u>

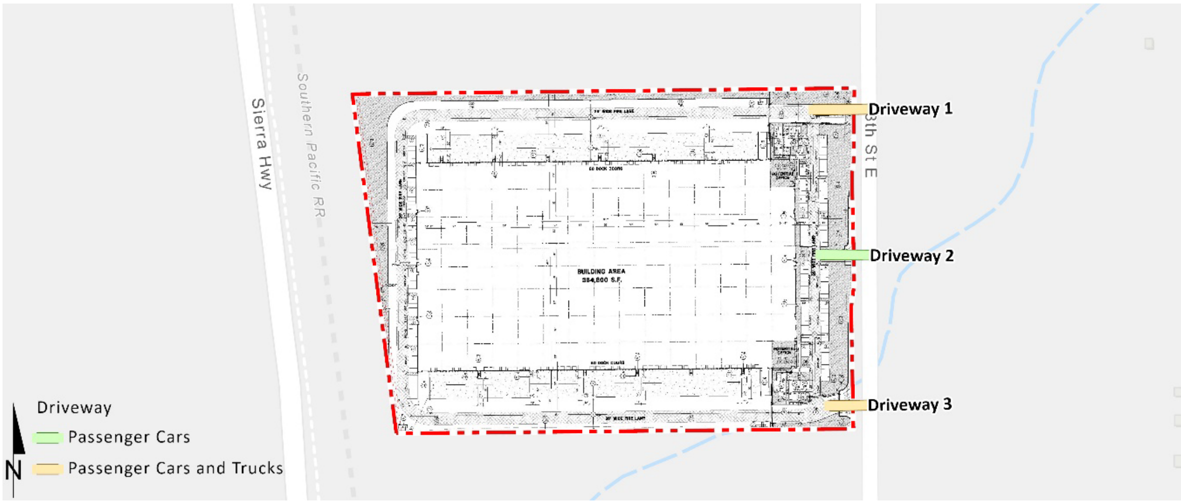
Mr. Jay Nelson,

The firm of Urban Crossroads, Inc. is pleased to submit this scoping letter regarding the traffic analysis for 8th Street Industrial development (**Project**), which is located southeast corner of 8th Street and Rancho Vista Boulevard in the City of Palmdale. This letter describes the proposed Project trip generation, trip distribution, and analysis methodology, which have been used to establish the draft proposed Project study area and analysis locations. The City of Palmdale does not have any current traffic study guidelines, as such, the County's guidelines have been utilized. The following scope of work is based on the County of Los Angeles <u>Transportation Impact Analysis Guidelines</u> (dated July 23, 2020) (**City Guidelines**).

PROPOSED PROJECT

The Project is proposed to consist of a 384,800 square foot single warehouse building (see Exhibit 1). For the purposes of this analysis, the Project will be evaluated assuming 384,800 square feet of high-cube fulfilment center (non-sort facility) use. The proposed Project is anticipated to have an opening year of 2024. Access is proposed along 8th Street via three driveways.

EXHIBIT 1: PRELIMINARY SITE PLAN



TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development and is based upon the specific land uses planned for a given project. In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) was used to estimate the trip generation. Trip generation rates are summarized on Table 1 for actual vehicles and PCE. For purposes of the traffic study, the following ITE land use codes and vehicle mixes are proposed:

- High-Cube Fulfillment Center Warehouse (ITE Land Use Code 155) has been used to derive site specific trip generation estimates for up to 384,800 square feet of the proposed Project. The ITE Trip Generation Manual has trip generation rates for high-cube fulfillment center use for both non-sort and sort facilities (ITE land use code 155). As defined by ITE, *a high-cube warehouse is a building that typically has at least 200,000 gross square feet of floor area, has a ceiling height of 24 feet or more, and is used primarily for the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. A typical high-cube warehouse has a high level of on-site automation and logistics management. The automation and logistics enable highly-efficient processing of goods through the high-cube warehouse.* The ITE Trip Generation Manual has two subcategories for the High-Cube Fulfillment Center use: sort and non-sort. ITE describes a sort facility as a *fulfillment center that ships out smaller items, requiring extensive sorting, typically by manual means*. In comparison, *a non-sort facility is a fulfillment center that ships large box items that are processed primarily with automation rather than through manual means*. Some limited assembly and repackaging may occur within the facility. Given this description, a non-sort facility has been assumed for the purposes of calculating trip generation for the Project. The vehicle mix (passenger cars versus trucks) has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.

TABLE 1: TRIP GENERATION RATES

		ITE LU	AM Peak Hour			PM Peak Hour			Daily
Land Use[1]	Units[2]	Code	In	Out	Total	In	Out	Total	
Actual Vehicle Trip Generation Rates									
High-Cube Fulfillment Center (Non-Sort)[3]	TSF	155	0.122	0.028	0.150	0.062	0.098	0.160	1.810
Passenger Cars			0.112	0.018	0.130	0.057	0.093	0.150	1.580
2-Axle Trucks			0.002	0.001	0.003	0.001	0.001	0.002	0.038
3-Axle Trucks			0.002	0.002	0.004	0.001	0.001	0.002	0.048
4+-Axle Trucks			0.006	0.007	0.013	0.003	0.003	0.006	0.144
Passenger Car Equivalent (PCE) Trip Generation Rates[5]									
High-Cube Fulfillment Center (Non-Sort)[3]	TSF	155	0.122	0.028	0.150	0.062	0.098	0.160	1.810
Passenger Cars			0.112	0.018	0.130	0.057	0.093	0.150	1.580
2-Axle Trucks (PCE = 1.5)			0.003	0.002	0.005	0.002	0.001	0.003	0.058
3-Axle Trucks (PCE = 2.0)			0.005	0.005	0.010	0.003	0.003	0.005	0.119
4+-Axle Trucks (PCE = 3.0)			0.018	0.020	0.038	0.009	0.010	0.019	0.432

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

[3] Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.

[5] PCE factors: 2-axle = 1.5; 3-axle = 2.0; 4+-axle = 3.0.

Passenger car equivalent (PCE) factors were applied to the trip generation rates for heavy trucks (large 2-axles, 3-axles, 4+-axles). PCEs allow the typical "real-world" mix of vehicle types to be represented as a single, standardized unit, such as the passenger car, to be used for the purposes of capacity and level of service analyses. The PCE factors are consistent with the recommended PCE factors in Appendix B of the San Bernardino County Congestion Management Program (CMP) (2016 Update). The operations analyses will utilize the PCE trip generation consistent with the City's guidelines and other traffic studies prepared in the City.

The trip generation summary illustrating daily and peak hour trip generation estimates for the proposed Project in actual vehicles and PCE are shown on Table 2. The proposed Project is anticipated to generate 698 two-way vehicle trip-ends per day with 59 AM peak hour trips and 60 PM peak hour (see Table 2). The Project is anticipated to generate 842 two-way PCE trip-ends per day with 71 PCE AM peak hour trips and 68 PCE PM peak hour trips (see Table 2).

TABLE 2: PROJECT TRIP GENERATION SUMMARY

			AM Peak Hour			PM Peak Hour			
Land Use	Quantity	Units[1]	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:									
High-Cube Fulfillment (Non-Sort)	384.800	TSF							
Passenger Cars:			43	7	50	22	36	58	608
2-axle Trucks:			1	1	1	0	0	1	16
3-axle Trucks:			1	1	2	0	0	1	18
4+-axle Trucks:			2	3	5	1	1	2	56
Total Truck Trips (Actual Vehicles):			4	5	9	1	1	2	90
Total Trips (Actual Vehicles)[2]			**47**	**12**	**59**	**23**	**37**	**60**	**698**
Passenger Car Equivalent (PCE):									
High-Cube Fulfillment (Non-Sort)	384.800	TSF							
Passenger Cars:			43	7	50	22	36	58	608
2-axle Trucks:			1	1	2	1	0	1	22
3-axle Trucks:			2	2	4	1	1	2	46
4+-axle Trucks:			7	8	14	3	4	7	166
Total Truck Trips (PCE):			10	11	21	5	5	10	234
Total Trips (PCE)[2]			**53**	**18**	**71**	**27**	**41**	**68**	**842**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

TRIP DISTRIBUTION

The Project trip distribution represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. In addition, truck routes for neighboring agencies have been taken into consideration in the development of the trip distribution patterns for heavy trucks. Exhibits 2 and 3 show the Project truck and passenger car trip distribution patterns, respectively.

EXHIBIT 2: PROJECT (TRUCK) TRIP DISTRIBUTION

EXHIBIT 3: PROJECT (PASSENGER CAR) TRIP DISTRIBUTION

ANALYSIS SCENARIOS

Intersection analysis will be provided for the following analysis scenarios:

- Existing (2022) Conditions
- Existing plus Ambient Growth (2024) Conditions
- Existing plus Ambient Growth plus Project (2024) Conditions
- Existing plus Ambient Growth plus Cumulative (2024) Conditions
- Existing plus Ambient Growth plus Project plus Cumulative (2024) Conditions

All study area intersections will be evaluated using the Highway Capacity Manual (HCM) 6th Edition analysis methodology. The study area that is proposed to be evaluated is shown on Exhibit 4.

EXHIBIT 4: STUDY AREA

AMBIENT GROWTH

An ambient growth rate of 2% per year is proposed for the study area intersection to approximate background growth not identified by nearby cumulative development projects. As such, a total of 4.04% will be applied to the baseline.

EXISTING COUNT DATA

As local schools are back in session (with in-person instruction), we are proposing to conduct new traffic counts on a typical weekday when local schools are open and operating on normal bell schedules. No additional adjustments are proposed for the purposes of establishing the existing baseline conditions. Based on the proposed land uses, the following peak hours will be evaluated:

- Weekday AM Peak Hour (6-9 AM)
- Weekday PM Peak Hour (4-7 PM)

CUMULATIVE PROJECTS

It is requested that the City provide a list of cumulative projects with applicable land use and intensity information for inclusion in our traffic study.

SPECIAL ISSUES

The following special issues will also be addressed:

- *Traffic Signal Warrant Analysis*: Traffic signal warrant analysis will be performed for all full-access unsignalized study area intersections utilizing the California MUTCD peak-hour warrants for existing intersections, and the Caltrans daily (Planning level) warrant for new intersections.
- *Truck Turns*: Evaluate truck turns at applicable Project driveways to ensure driveways are designed to accommodate site access.
- *Site Access Evaluation*: The turn pocket lengths will be determined through peak hour traffic simulations developed using Synchro and SimTraffic software in an effort to identify the required storage capacity for turn lanes at each Project driveway.

If you have any questions or comments, I can be reached at cso@urbanxroads.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

Charlene So

Charlene So, PE
Principal