January 4, 2023

Ms. Nicole Morse
T\&B Planning, Inc.
3200 El Camino Real, Suite 100
Irvine, CA 92602

## Subject: 7400 Slauson Avenue Focused Traffic Assessment

Dear Ms. Nicole Morse:
This letter has been prepared to document the findings for the Focused Traffic Assessment for the proposed 7400 Slauson Avenue development (Project) located in the City of Commerce. As the City of Commerce does not have their own traffic study guidelines, this trip generation assessment has been prepared in accordance with the County of Los Angeles Transportation Impact Analysis Guidelines (TIA Guidelines) (July 23, 2020) and Appendix D of the 2010 Los Angeles County Congestion Management Program (CMP) (Guidelines for CMP Transportation Impact Analysis, CMP Guidelines).

## PROPOSED PROJECT

The preliminary site plan for the proposed Project is shown on Exhibit 1. The proposed Project is to consist of a 296,166 square foot building with warehousing use. Access to the Project site will be provided by two proposed driveways along Slauson Avenue and two driveways on Greenwood Avenue. The westerly driveway on Slauson Avenue will serve heavy trucks and passenger cars while the easterly driveway will serve passenger cars only. Similarly, the southerly driveway on Greenwood Avenue would serve both passenger cars and trucks, while the northerly driveway would serve passenger cars only. Due to the intersection spacing of Driveways 2 and 3 to the intersection of Greenwood Avenue and Slauson Avenue should be restricted to right-in/right-out access only (see Exhibit 1). The access restriction is to ensure that there are no inbound vehicles that would conflict with adjacent left turn movements at the intersection of Greenwood Avenue and Slauson Avenue.

## Exhibit 1: Preliminary Site Plan



## TRIP GENERATION ASSESSMENT

## Existing Use

The site is currently developed with an existing industrial warehouse building. As such, for the purposes of this assessment, a credit has been taken for the trips associated with the existing uses. Traffic counts were collected at the driveways for 7400 Slauson Avenue in Commerce, California on May 26 and May 27, 2021. A summary of the count data collected is provided in Attachment A. Table A-1 in Attachment A provides a detailed summary of the counts collected at each driveway location. Table 1 summarizes

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the total trip generation for the existing site (accounting for all driveways). As shown on Table 1, the existing warehouse generates 928 two-way trips per day, with 60 trips during the AM peak hour and 64 trips during the PM peak hour.

Table 1: Existing Survey Data for $\mathbf{7 4 0 0}$ Slauson Avenue

| Land Use | AM Peak Hour |  |  | PM Peak Hour |  |  | Daily |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In | Out | Total | In | Out | Total |  |
| Day 1: May 26, 2021 |  |  |  |  |  |  |  |
| Passenger Cars: | 30 | 15 | 45 | 5 | 33 | 38 | 655 |
| 2-axle Trucks: | 1 | 1 | 2 | 3 | 2 | 5 | 86 |
| 3-axle Trucks: | 3 | 5 | 8 | 8 | 0 | 8 | 120 |
| 4+-axle Trucks: | 2 | 4 | 6 | 0 | 0 | 0 | 61 |
| Total Truck Trips: | 6 | 10 | 16 | 11 | 2 | 13 | 267 |
| Total Trips ${ }^{1}$ | 36 | 25 | 61 | 16 | 35 | 51 | 922 |
| Day 2: May 27, 2021 |  |  |  |  |  |  |  |
| Passenger Cars: | 27 | 10 | 37 | 12 | 40 | 52 | 650 |
| 2-axle Trucks: | 4 | 4 | 8 | 7 | 3 | 10 | 92 |
| 3-axle Trucks: | 3 | 8 | 11 | 5 | 1 | 6 | 128 |
| 4+-axle Trucks: | 0 | 2 | 2 | 8 | 0 | 8 | 64 |
| Total Truck Trips: | 7 | 14 | 21 | 20 | 4 | 24 | 284 |
| Total Trips ${ }^{1}$ | 34 | 24 | 58 | 32 | 44 | 76 | 934 |
| 2-Day Average Trip Generation: |  |  |  |  |  |  |  |
| Passenger Cars: | 29 | 13 | 41 | 9 | 37 | 45 | 653 |
| 2-axle Trucks: | 3 | 3 | 5 | 5 | 3 | 8 | 89 |
| 3-axle Trucks: | 3 | 7 | 10 | 7 | 1 | 7 | 124 |
| 4+-axle Trucks: | 1 | 3 | 4 | 4 | 0 | 4 | 63 |
| Total Truck Trips: | 7 | 12 | 19 | 16 | 3 | 19 | 276 |
| Total Trips ${ }^{1}$ | 35 | 25 | 60 | 24 | 40 | 64 | 928 |

* Note: data collected on May 26, and 27, 2021.
${ }^{1}$ Total Trips = Passenger Cars + Truck Trips .


## Proposed Project

The Project is proposed to consist of a single building with 296,166 square feet of warehousing use. For the purposes of this assessment, trip generation has been conservatively calculated assuming $60 \%$ warehousing use ( 177,700 square feet) and $40 \%$ general light industrial use (118,466 square feet). The trip generation rates used for this analysis are based upon information collected by the Institute of Transportation Engineers (ITE) as provided in their Trip Generation Manual ( $11^{\text {th }}$ Edition, 2021) for the proposed general light industrial (ITE Land Use Code 110) and warehousing uses (ITE Land Use Code 150) (see Table 2). The following summarizes the proposed land uses and vehicle mix:

- ITE land use code 110 (General Light Industrial) has been used to derive site specific trip generation estimates for up to 118,466 square feet of the proposed Project. A light industrial facility is a free-standing facility devoted to a single use that has an emphasis on activities other than manufacturing. Typically, there is minimum office space. The vehicle mix has also 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 $=62.6 \%$.
- ITE land use code 150 (Warehousing) has been used to derive site specific trip generation estimates for up to 177,700 square feet of the proposed Project. A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has also 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 2: Trip Generation Rates

| Land Use ${ }^{1}$ | ITE LU Code | Units ${ }^{2}$ | AM Peak Hour |  |  | PM Peak Hour |  |  | Daily |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | In | Out | Total | In | Out | Total |  |
| Actual Vehicles: |  |  |  |  |  |  |  |  |  |
| General Light Industrial ${ }^{3}$ | 110 | TSF | 0.651 | 0.089 | 0.740 | 0.091 | 0.559 | 0.650 | 4.870 |
| Passenger Cars |  |  | 0.645 | 0.085 | 0.730 | 0.086 | 0.554 | 0.640 | 4.620 |
| 2-Axle Trucks |  |  | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | 0.002 | 0.042 |
| 3-Axle Trucks |  |  | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | 0.002 | 0.052 |
| 4+-Axle Trucks |  |  | 0.004 | 0.002 | 0.006 | 0.003 | 0.003 | 0.006 | 0.157 |
| Warehousing ${ }^{3}$ | 150 | TSF | 0.131 | 0.039 | 0.170 | 0.050 | 0.130 | 0.180 | 1.710 |
| Passenger Cars |  |  | 0.120 | 0.030 | 0.150 | 0.034 | 0.116 | 0.150 | 1.110 |
| 2-Axle Trucks |  |  | 0.002 | 0.001 | 0.003 | 0.003 | 0.002 | 0.005 | 0.100 |
| 3-Axle Trucks |  |  | 0.002 | 0.002 | 0.004 | 0.003 | 0.003 | 0.006 | 0.124 |
| 4+-Axle Trucks |  |  | 0.007 | 0.006 | 0.013 | 0.010 | 0.009 | 0.019 | 0.376 |

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As shown on Table 3, the proposed Project is anticipated to generate 886 two-way trips per day with 114 AM peak hour trips and 110 PM peak hour trips (actual vehicles).

Table 3: Proposed Project Trip Generation Summary

| Proposed Land Use | Quantity Units ${ }^{1}$ | AM Peak Hour |  |  | PM Peak Hour |  |  | Daily |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | In | Out | Total | In | Out | Total |  |
| Actual Vehicles: |  |  |  |  |  |  |  |  |
| General Light Industrial (40\%) | 118.466 TSF |  |  |  |  |  |  |  |
| Passenger Cars: |  | 76 | 10 | 86 | 10 | 66 | 76 | 548 |
| 2-axle Trucks: |  | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 3-axle Trucks: |  | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 4+-axle Trucks: |  | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Total Truck Trips: |  | 0 | 0 | 0 | 0 | 0 | 0 | 32 |
| Warehousing (60\%) | 177.700 TSF |  |  |  |  |  |  |  |
| Passenger Cars: |  | 21 | 5 | 26 | 6 | 21 | 27 | 198 |
| 2-axle Trucks: |  | 0 | 0 | 0 | 1 | 0 | 1 | 18 |
| 3-axle Trucks: |  | 0 | 0 | 0 | 1 | 1 | 2 | 22 |
| 4+-axle Trucks: |  | 1 | 1 | 2 | 2 | 2 | 4 | 68 |
| Total Truck Trips: |  | 1 | 1 | 2 | 4 | 3 | 7 | 108 |
| Total Trips (Actual Vehicles) ${ }^{\mathbf{2}}$ |  | 98 | 16 | 114 | 20 | 90 | 110 | 886 |

${ }^{1}$ TSF = thousand square feet
${ }^{2}$ Total Trips = Passenger Cars + Truck Trips.

## Trip Generation Comparison

Table 4 shows the trip generation comparison and the resulting net change in trips between the existing use and the proposed Project. As shown on Table 4, the proposed Project would result in a net reduction of 42 two-way trips per day and net increase of 55 AM peak hour trips and 47 PM peak hour trips.

Table 4: Trip Generation Comparison

| Land Use | AM Peak Hour |  |  | PM Peak Hour |  |  | Daily |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In | Out | Total | In | Out | Total |  |
| Proposed Project |  |  |  |  |  |  |  |
| Passenger Cars: | 97 | 15 | 112 | 16 | 87 | 103 | 746 |
| Total Truck Trips: | 1 | 1 | 2 | 4 | 3 | 7 | 140 |
| Total Trips (Actual Vehicles) ${ }^{1}$ | 98 | 16 | 114 | 20 | 90 | 110 | 886 |
| Existing Use |  |  |  |  |  |  |  |
| Passenger Cars: | 29 | 13 | 41 | 9 | 37 | 45 | 653 |
| Total Truck Trips: | 7 | 12 | 19 | 16 | 3 | 19 | 276 |
| Total Trips (Actual Vehicles) ${ }^{1}$ | 35 | 25 | 60 | 24 | 40 | 64 | 928 |
| VARIANCE |  |  |  |  |  |  |  |
| Passenger Cars: | 69 | 3 | 71 | 8 | 51 | 58 | 94 |
| Total Truck Trips: | -6 | -11 | -17 | -12 | 0 | -12 | -136 |
| Total Trips (Actual Vehicles) ${ }^{1}$ | 63 | -9 | 55 | -4 | 51 | 47 | -42 |

${ }^{1}$ Total Trips = Passenger Cars + Truck Trips.

## TRIP DISTRIBUTION

The project trip distribution patterns for both passenger cars and trucks have been developed based on experience on other studies for similar land uses in the vicinity. Passenger car distribution patterns will be based on existing and planned land uses and roadway infrastructure in the area. Truck traffic associated with the Project will be limited to truck routes and not be allowed on residential streets. The passenger car and truck trip distributions are illustrated on Exhibits 2 and 3, respectively.

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## Exhibit 2: Рroject (Passenger Car) Trip Distribution



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## Exhibit 3: Рroject (Truck) Trip Distribution



## TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project weekday ADT and weekday peak hour intersection turning movement volumes are shown on Exhibit 4.

## Exhibit 4: Project Only Traffic Volumes


\#\#(\#\#) AM(PM) Peak Hour Intersection Volumes
\#\# Average Daily Trips

## SITE ACCESS RECOMMENDATIONS

The site access recommendations are shown on Exhibit 5 . As shown, all driveways would be signed with a stop control for egress traffic. The westbound left turn pocket at Driveway 1 should accommodate a minimum of 100 -feet of storage. Based on the peak hour volume shown on Exhibit 4, the recommended storage length should be sufficient (assuming a minimum of 1-foot per vehicle it is more than sufficient). The westbound left turn pocket on Slauson Avenue at Driveway 1 can either be striped or accommodated within the existing two-way left-turn painted median.

## Exhibit 5: Site Access Recommendations



## TRUCK ACCESS

Due to the typical wide turning radius of large trucks, a truck turning template has been overlaid on the site plan at each applicable Project driveway anticipated to be utilized by heavy trucks in order to determine appropriate curb radii and to verify that trucks will have sufficient space to execute turning maneuvers (see Exhibit 6). A WB-67 truck ( 53 -foot trailer) has been utilized for the purposes of this analysis. As shown on Exhibit 6, the driveways as currently designed are anticipated to accommodate the ingress and egress of heavy trucks.

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Exhibit 6: Truck Access


## SIGHT DISTANCE

Horizontal sight distance has been evaluated for the driveways on Project driveways along Slauson Avenue based on Table 3-1 of the American Association of State Highway and Transportation Officials (AASHTO) Stopping Sight Distance requirements. Sight distance is the continuous length of highway ahead visible to the driver.

At unsignalized intersections, corner sight distance must provide a substantially clear line of sight between the driver of the vehicle waiting on the minor road (driveway) and the driver of an approaching vehicle. For the purposes of this analysis, a $71 / 2$ second criterion has been applied to the outside travel lanes in either direction to provide the most conservative sight distance. The $71 / 2$ second criterion allows waiting vehicles to either cross all lanes of through traffic by turning left or cross the near lanes by turning right without requiring through traffic to radically alter their speed. Vertical sight distance has been evaluated utilizing a 3.5 -foot eye height and a 4.25 -foot object height. The sight distance is based on the posted speed limit.

It is anticipated that the minimum 360-foot sight distance could be accommodated at both Driveway 1 and Driveway 2 along Slauson Avenue, based on a speed limit of 45 miles per hour. Adequate visibility for vehicular and pedestrian traffic can be provided at each Project driveway by limiting sight obstructions within the limited use area. Any landscaping/hardscape within the limited use area should not exceed 30 -inches ( 2.5 -feet) in height. The limited use area should be kept clear of any landscaping or any other obstructions that may impede the visibility of the driver, including on-street parking. Minimum horizontal sight distances are illustrated on Exhibit 7 for both Driveway 1 and Driveway 2 on Slauson Avenue, however, sight distance should be re-evaluated in the field once the driveway has been constructed. In addition, the curbs have been marked to show the extents of the proposed red curb needed in order to maintain adequate visibility from the proposed Project driveways on Slauson Avenue.

## Exhibit 7: Sight Distance



## FINDINGS

According to the TIA and CMP Guidelines, operations analysis (traffic study) may not be required if the AM or PM peak hour trip generation is less than 50 net new vehicle trips, and the Project generates fewer than 110 net new (two-way) trips per day. Although the Project is anticipated to generate 54 net new AM peak hour trips, the distribution of these trips between the various proposed Project driveways would result in a net contribution of fewer than 50 net new peak hour trips to any site adjacent and offsite intersections. As such, additional traffic analysis beyond this focused traffic assessment is not necessary.

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If you have any questions, please contact me directly at cso@urbanxroads.com.
URBAN CROSSROADS, INC.


Charlene So, PE Principal

Attachments


## Attachment A: Driveway Counts

Summary of Driveway Counts: $\mathbf{7 4 0 0}$ Slauson Avenue, Commerce, CA

| Land Use | West Dwy on Slauson <br> AM Peak Hour PM Peak Hour |  |  |  |  |  | Daily | Driveway on Greenwood |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | AM Peak Hour | PM Peak Hour |  |  | Daily |
|  | In | Out | Total | In | Out | Total |  | In | Out | Total |  | In | Out | Total |
| Day 1: May 26, 2021 |  | 0 | 2 | 0 |  |  |  | 28 | 28 | 15 | 43 | 5 | 30 | 35 | 627 |
| Passenger Cars: |  |  |  |  | 3 | 3 |  |  |  |  |  |  |  |  |  |
| 2-axle Trucks: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 2 | 5 | 86 |  |
| 3-axle Trucks: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 8 | 8 | 0 | 8 | 120 |  |
| 4+-axle Trucks: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | 0 | 0 | 0 | 61 |  |
| Total Truck Trips: | 0 | 0 | 0 |  | 0 | 0 | 0 | 6 | 10 | 16 | 11 | 2 | 13 | 267 |  |
| Total Trips ${ }^{1}$ | 2 | 0 | 2 | 0 | 3 | 3 | 28 | 34 | 25 | 59 | 16 | 32 | 48 | 894 |  |
| Day 2: May 27, 2021 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Passenger Cars: | 1 | 0 | 1 | 0 | 2 | 2 | 30 | 26 | 10 | 36 | 12 | 38 | 50 | 620 |  |
| 2-axle Trucks: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 8 | 7 | 3 | 10 | 92 |  |
| 3-axle Trucks: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 11 | 5 | 1 | 6 | 128 |  |
| 4+-axle Trucks: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 8 | 0 | 8 | 64 |  |
| Total Truck Trips: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 | 21 | 20 | 4 | 24 | 284 |  |
| Total Trips ${ }^{1}$ | 1 | 0 | 1 | 0 | 2 | 2 | 30 | 33 | 24 | 57 | 32 | 42 | 74 | 904 |  |



24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)
PREPARED BY: AimTD LLC. tel: 7142537888 cs@aimtd.com



24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)



24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)
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24-HOUR ROADWAY SEGMENT COUNTS (WITH FHWA CLASSIFICATION)



[^0]:    ${ }^{1}$ 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.

