lancaster mobley

1130 SW Morrison St., Suite 318
Portland, OR 97205
503.248.0313
lancastermobley.com

Memorandum

To: Mike McCarthy, Tony Doran, City of Tualatin

Copy: Chris Walker, CIDA

From: Ken Kim, PE

Date: December 16, 2024

Subject: KAI USA Warehouse Expansion
Trip Generation and Distribution Memorandum

Introduction

This memorandum provides trip generation and distribution for the proposed KAI USA Warehouse Expansion located at 18600 SW Teton Avenue in Tualatin, Oregon. The results are compared with City standards to demonstrate that no further analysis is necessary.

Project Location and Description

The project site is located on Tax Lot 2S123B0-00701 in Tualatin, Oregon. A vicinity map is shown in Figure 1 with the subject site highlighted in yellow.

Figure 1: Project Location (image from Google Earth)

The site is currently developed with a KAI USA Warehouse building. The project proposes the construction of an 18,430-square foot (SF) addition to the existing building. As shown in Figure 1, access to the site is provided via three existing roadway connections (yellow arrows) along SW Teton Avenue and SW Herman Road. A site plan is attached to this memo.

Trip Generation

The proposed development will include the construction of an 18,430-SF addition to the KAI USA Warehouse building. To estimate the number of trips that will be generated by the proposed use, rates from the *Trip Generation Manual*[1] were used. Data from Land Use Code (LUC) 150, *Warehousing* was used to estimate trip generation of the existing use.

The trip generation calculations show that the proposed project is projected to generate an additional 3 morning peak hour trips, 3 evening peak hour trips, and 32 average weekday trips. The trip generation estimates are summarized in Table 1. Detailed trip generation calculations are included as an attachment to this memorandum.

Table 1: Trip Generation Summary

Land Use Assumption (ITE Code)	Intensity	Morning Peak Hour			Evening Peak Hour			Weekday Trips
		In	Out	Total	In	Out	Total	
Warehousing (150) – Truck	18,430 SF	0	0	0	1	0	1	12
Warehousing (150) – Total	18,430 SF	2	1	3	1	2	3	32

Trip Distribution

A preliminary directional distribution of site trips was estimated based on locations of likely trip origins and destinations, and locations of major transportation facilities in the site vicinity.

The following trip distribution was estimated and applied to the proposed development:

- Approximately 35% of site trips will travel to/from the east along SW Herman Road.
- Approximately 30% of site trips will travel to/from the north along SW Teton Avenue
- Approximately 20% of site trips will travel to/from the west along SW Herman Road.
- Approximately 15% of site trips will travel to/from the south along SW Teton Avenue.

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

Comparison to Agency TIA Standards

Tualatin Traffic Study Requirements outlines two levels of traffic analysis that may be required based on the development type and size.

A Trip Generation and Distribution Description is required for any development that, in the judgement of City staff, would generate 100 or more new daily trips. Developments anticipated to generate this level of traffic, and thus require a Trip Generation and Distribution Description, include:

a. 10 or more single-family homes
b. 15 or more multi-family units
c. Industrial buildings 15,000 SF or larger
d. Office buildings 8,000 SF or larger
e. Any use with customers or public coming to the site (such as retail, restaurant, school, medical office, recreation, etc.)

A full Transportation Impact Analysis is required for cases (in staff's judgement) that would be anticipated to generate more than 500 vehicle trip ends per day and/or more than 60 vehicle trip ends in the morning or evening peak hour and/or more than 100 vehicle trip ends during the peak hour of development traffic. Developments anticipated to generate this amount of traffic (and thus require a Transportation Impact Analysis) include:

a. 50 or more single-family residences
b. 80 or more multi-family residences
c. 75,000 SF or more of industrial space
d. 40,000 SF or more of office space
e. 10,000 SF or more of retail space
f. Any restaurant, convenience market, or gas station
g. Any development with a drive-through

Although the size of development will be above the 15,000-SF threshold of industrial building size for a trip generation and distribution requirement, the trip generation for the proposed expansion will fall below any of these trip generation thresholds. However, this memorandum provides the trip generation and trip distribution; therefore, no further traffic study is required beyond the provided analysis in this memo.

Conclusions

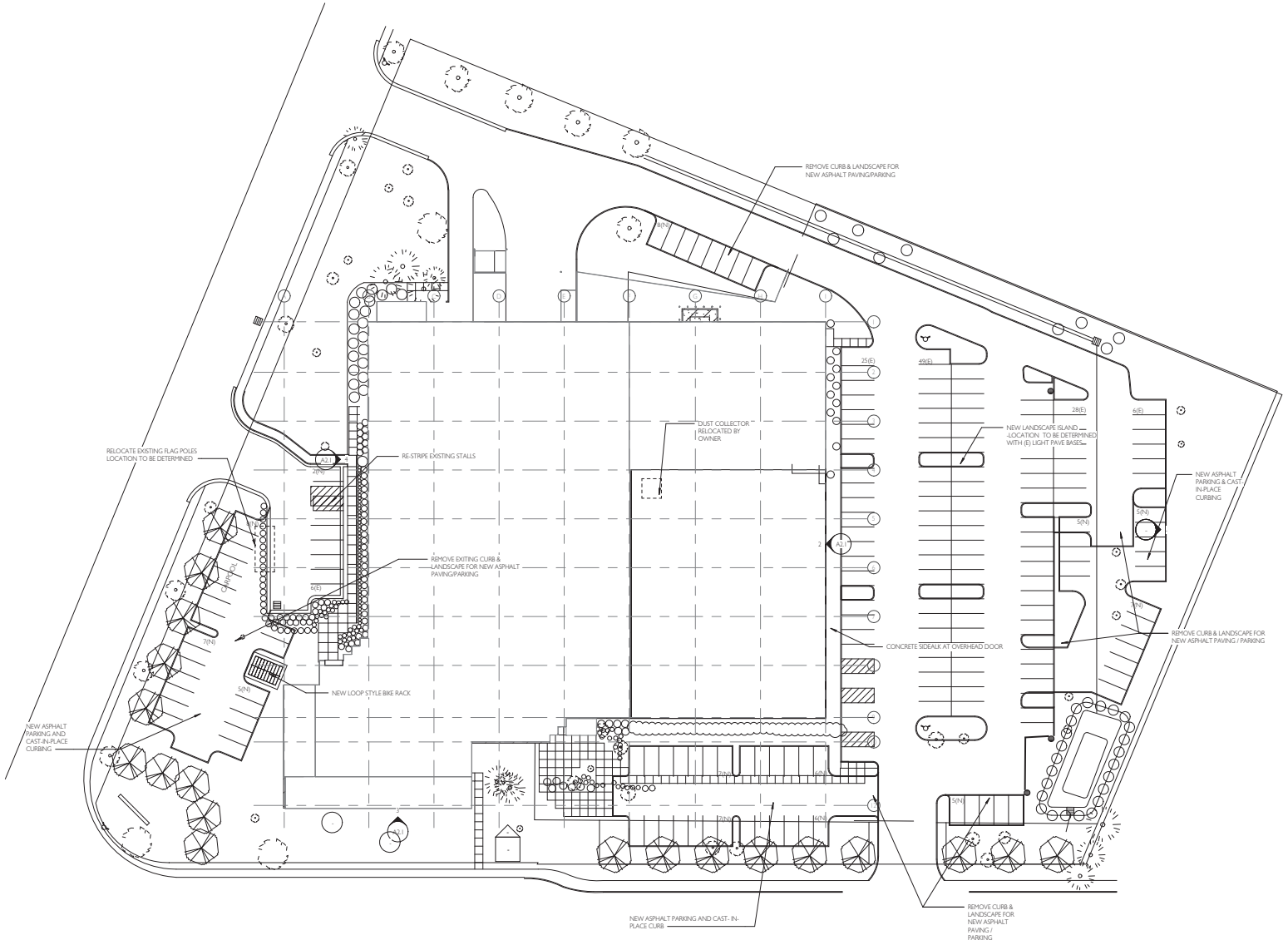
Based on the trip generation calculations, the project site with the expansion of the KAI USA Warehouse is projected to generate an additional of 3 morning peak hour trips, 3 evening peak hour trips, and 32 average weekday trips. These estimates fall below the Trip Generation and Distribution threshold of 100 ADT and TIA threshold of 60 morning, evening peak hour trips, and 32 ADT; therefore, no further traffic study is required.

SITE PLAN NOTES

EDIT AS REQUIRED-- SAVE TO YOUR PROJECT LIBRARY

1. RADIUS AT PARKING AREA TO BE 3'-0" UNLESS NOTED OTHERWISE.
2. EXISTING CONDITIONS SHOWN ARE BASED ON SURVEY DONE BY --- AND DATED ---.
3. CONTRACTOR TO CONFIRM EXISTING CONDITION SHOWN ON IMPLIED PRIOR TO START OF CONSTRUCTION AND NOTIFY A/E OF ANY DISCREPANCIES.

KEYNOTES



NORTH 1 A0.1 **ARCHITECTURAL SITE PLAN**

1" = 30'-0"

PRELIMINARY PLAN ONLY- NOT FOR CONSTRUCTION

ISSUE DATE

1 GC PRICMPRICING 9/13/22

CIDA
ARCHITECTURE
ENGINEERING
PLANNING
INTERIORS
LANDSCAPE
15895 SW 72ND AVE SUITE 200
PORTLAND, OREGON 97224
TEL: 503.226.1285
FAX: 503.226.1670
WWW.CIDAINC.COM

ADDITIONS FOR:

KIA - USA

PROJECT ADDRESS - TUALATIN, OREGON

SITE PLAN

A0.1

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TRIP GENERATION CALCULATIONS

Source: Trip Generation Manual, 11th Edition

Land Use:	Warehousing
Land Use Code:	150
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	1000 SF GFA
Trip Type:	Vehicle
Formula Type:	Rate
Variable Quantity:	18.43

AM PEAK HOUR

Trip Rate: 0.17

	Enter	Exit	Total
Directional Split	77%	23%	
Trip Ends	2	1	3

PM PEAK HOUR

Trip Rate: 0.18

	Enter	Exit	Total
Directional Split	28%	72%	
Trip Ends	1	2	3

WEEKDAY

Trip Rate: 1.71

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	16	16	32

SATURDAY

Trip Rate: 0.15

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	1	1	2

TRIP GENERATION CALCULATIONS

Source: Trip Generation Manual, 11th Edition

Land Use:	Warehousing
Land Use Code:	150
Land Use Subcategory:	All Sites
Setting/Location	General Urban/Suburban
Variable:	1000 SF GFA
Trip Type:	Truck
Formula Type:	Rate
Variable Quantity:	18.43

AM PEAK HOUR

Trip Rate: 0.02

	Enter	Exit	Total
Directional Split	52%	48%	
Trip Ends	0	0	0

PM PEAK HOUR

Trip Rate: 0.03

	Enter	Exit	Total
Directional Split	52%	48%	
Trip Ends	1	0	1

WEEKDAY

Trip Rate: 0.6

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	6	6	12

SATURDAY

Trip Rate: 0

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	NA	NA	NA