



September 1, 2023

Mike Triffler
Rocky Ridge Civil Engineering
420 21st Avenue, Suite 101
Longmont, CO 80501

**RE: Tarahumara Trucking / Traffic Generation Analysis
Aurora, Colorado**

Dear Mike,

SM ROCHA, LLC is pleased to provide traffic generation information for the development entitled Tarahumara Trucking. This development is located to the southeast of the intersection of Smith Road with Andes Way in Aurora, Colorado.

This information has been revised to address City Staff review comments dated June 23, 2023, regarding updates to trip generation rates, as well as discussion on pedestrian connectivity.

The intent of this analysis is to present traffic volumes likely generated by the proposed development and consider potential impacts to the adjacent roadway network.

The following is a summary of analysis results.

Site Description and Access

Land for the development is currently vacant, pursuant to Adams County assessor information. However, aerial imagery indicates the proposed development area is used as an outdoor vehicle storage yard in association with adjacent properties. The site is surrounded by a mix of industrial and residential land uses. The proposed development is understood to entail the relocation and reconstruction of an existing office building of approximately 3,800 square feet supporting an outdoor vehicle storage facility. Associated parking areas and other access and roadway improvements are also anticipated.

Proposed access to the development is provided at the following locations: one full-movement access onto Andes Way (referred to as Access A), and one full-movement access onto Argonne Street (referred to as Access B).

General site and access locations are shown on Figure 1. A site plan, as prepared by Rocky Ridge Civil Engineering, is shown on Figure 2. This plan is provided for illustrative purposes only.



Figure 1
SITE LOCATION



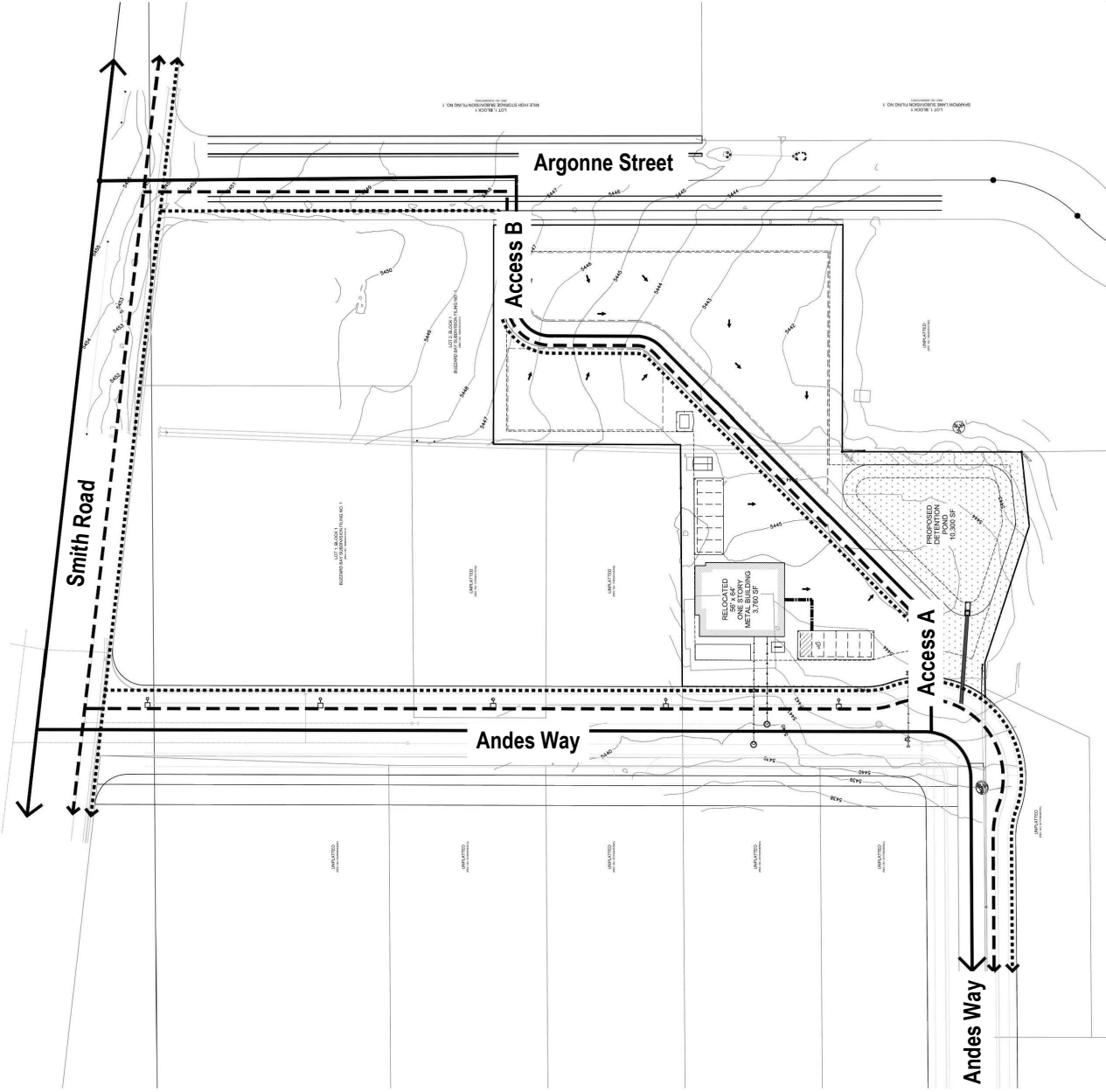


Figure 2
 SITE PLAN
 September 2023
 Page 3



Vehicle Trip Generation

Traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were applied to the proposed land use in order to estimate the average daily traffic (ADT) and peak hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from point of origin to point of destination.

Table 1 presents average trip generation rates for the development area proposed. Use of average trip generation rates presents a conservative analysis, with the averages of both Peak Hour of Adjacent Street Traffic and Peak Hour of Generator rates shown for comparison purposes. It is also noted that ITE does not provide data specific to an outdoor vehicle storage yard facility. However, pursuant to the anticipated business operations plan, ITE land use code 110 (General Light Industrial) was used for analysis because of its best fit to the proposed land use.

Table 1 – Trip Generation Rates

ITE CODELAND USEUNIT			TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
110	General Light Industrial	KSF	4.87	0.65	0.09	0.74	0.09	0.56	0.65
110	General Light Industrial *	KSF	4.87	0.79	0.12	0.91	0.14	0.66	0.80

Key: KSF = Thousand Square Feet Gross Floor Area.
* = Peak hour of generator rates

Table 2 summarizes the projected ADT and peak hour traffic by the additional land use area proposed. Per City review comments, only need peak hour generator rates. Table updated.

Table 2 – Trip Generation Summary

ITE CODELAND USESIZE			TOTAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
110	General Light Industrial	3.8 KSF	18	2	1	3	0	2	2
110	General Light Industrial *	3.8 KSF	18	3	0	3	1	2	3
Total:			37	5	1	7	1	5	5

Key: KSF = Thousand Square Feet Gross Floor Area.
* = Peak hour of generator rates
Note: All data and calculations above are subject to being rounded to nearest value.

As Table 2 shows, the development area has the potential to generate approximately 37 daily trips with 7 of those occurring during the morning peak hour and 5 during the afternoon peak hour. Table updated.

Adjustments to Trip Generation Rates

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

Trip Generation Distribution and Assignment

Overall directional distribution of site-generated traffic was determined based on existing area land uses, the site location within the City, and the available roadway network. Site-generated traffic is anticipated to be distributed through each proposed access. Distribution along Smith Road is general and assumed to be 10 percent to/from the east and west. Distribution along Tower Road is assumed to be 50 percent to/from the north and 30 percent to/from the south.

Traffic assignment is how the site-generated and distributed trips are expected to be loaded on the roadway network. Applying assumed trip distribution patterns to site-generated traffic provides the peak hour trip volume assignments for proposed accesses. These volumes are then divided further upon travel through adjacent roadways serving the overall development area. Table 3 below uses the total trip generation volumes from Table 2 and denotes projected traffic volumes at each proposed access.

Table 3 – Site Generated Trip Assignment

DEVELOPMENT ACCESS TURNING MOVEMENTS	AM PEAK HOUR		PM PEAK HOUR	
	Inbound Volume	Outbound Volume	Inbound Volume	Outbound Volume
Access A / Andes Way				
Westbound Left	-	1	-	3
Westbound Right	-	0	-	1
Northbound Right	2	-	0	-
Southbound Left	1	-	1	-
Access B / Argonne Street				
Eastbound Left	-	0	-	1
Eastbound Right	-	0	-	0
Northbound Left	0	-	0	-
Southbound Right	2	-	0	-

Development Impacts

As Tables 2 and 3 show, there is an increase in peak hour traffic volumes anticipated for the proposed development. However, these additional volumes are considered minor and are not likely to negatively impact operations of Smith Road nor other adjacent roadways or intersections.

Pedestrian Circulation & Safety Analysis

In accordance with Section 3.5.4 of the City's Traffic Impact Study Guidelines¹, an assessment to pedestrian connectivity and safety was considered.

The proposed development would accommodate pedestrians and bicyclists with the following improvements:

- Attached sidewalks along the existing adjacent roadway network and into the site along the proposed access drives.
- Bicycle lanes along the existing adjacent roadway network and the proposed access drives.
- ADA parking spaces adjacent to the building entrance.

With the assumption that the development's site plan was designed per the City's Specifications, and pursuant to the Federal Highway Administration's (FHWA) Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations², pedestrian safety is not expected to be of concern. Moreover, traffic calming and pedestrian crossing treatments are not applicable, and traffic calming is not recommended for the proposed conditions.

¹ Traffic Impact Study Guidelines, City of Aurora, Public Works Department, June 2015.

² Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, Federal Highway Administration, July 2018.

Conclusion

This analysis assessed traffic generation for the Tarahumara Trucking development and potential impacts to the adjacent roadway network.

It is our professional opinion that the proposed site-generated traffic is expected to create no negative impact to traffic operations for the surrounding roadway network and proposed site accesses, nor at the Smith Road intersection with Andes Way. Analysis of site-generated traffic concludes that proposed development traffic volumes are minor.

We trust that our findings will assist in the planning and approval of the Tarahumara Trucking development. Please contact us should further assistance be needed.

Sincerely,

SM ROCHA, LLC

Traffic and Transportation Consultants



Stephen Simon, EIT
Traffic Engineer



Fred Lantz, PE
Traffic Engineer