



SM ROCHA, LLC

TRAFFIC AND TRANSPORTATION CONSULTANTS

January 8, 2020

Woody Bryant
Engineering Service Company
14190 East Evans Avenue
Aurora, Colorado 80014

**RE: Granit Pointe Estates / Traffic Generation Analysis
Aurora, Colorado**

Dear Mr. Woody Bryant,

SM ROCHA, LLC is pleased to provide traffic generation information for the development entitled Granit Pointe Estates. This development is located near the northeast corner of the Iowa Avenue and Dayton Street intersection at 1598 S. Dayton Street in Aurora, Colorado.

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

The proposed residential building has approximately 89,300 square feet of gross floor area. Land for the development is currently vacant and is surrounded a mix of residential, religious, and commercial land uses.

Development site traffic is accommodated by two full-movement accesses. One primary access is on Iowa Avenue and the other on Dayton Street. Both access drives are existing and operate as stop-controlled intersections.

General site and access locations are shown on Figure 1.

A conceptual site plan, as prepared by Engineering Service Company, is shown on Figure 2. This plan is provided for illustrative purposes.



Not to Scale



Figure 1
SITE LOCATION





Not to Scale

LOT 1, BLOCK 1
RISING STAR SUBDIVISION
FILING NO. 1
ZONED: R-3

Site Access

(E) UTILITY EASEMENT
(REC. NO. B5058334)

(E) 8" UTILITY EASEMENT
(REC. NO. B5058334)

(E) 16" UTILITY EASEMENT
(REC. NO. B5058334)

(E) 23" FIRE LANE &
UTILITY EASEMENT
(REC. NO. B5058334)

(P) 18" UTILITY
EASEMENT

(E) 23" FIRE LANE &
UTILITY EASEMENT
(REC. NO. B5058334)

(P) RESIDENTIAL BUILDING
FF=5510.00

(E) 4" SIDEWALK EASEMENT
(REC. NO. B5058334)

(E) 12" UTILITY EASEMENT
(REC. NO. B5058334)

Site Access

Iowa Avenue

S89°41'24"W 346.22'

FIRE LANE - NO PARKING

SIGHT LINE/TRIANGLE

SIGHT LINE/TRIANGLE

LOT 1, BLOCK 1
PULTON COURT SUBDIVISION

GRANIT POINTE ESTATES
Traffic Generation Analysis

Figure 2
SITE PLAN

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Vehicle Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation, 10th 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. ITE land use code 221 (Multifamily Housing (Mid-Rise)) was used for analysis because of its best fit to the proposed land use.

TABLE 1 TRIP GENERATION RATES									
ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
221	Multifamily Housing (Mid-Rise)	DU	5.44	0.09	0.27	0.36	0.27	0.17	0.44

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Table 2 summarizes the projected average daily traffic (ADT) and peak hour traffic volumes likely generated by the land use area proposed.

TABLE 2 TRIP GENERATION SUMMARY									
ITE CODE	LAND USE	SIZE	TOTAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
221	Multifamily Housing (Mid-Rise)	50 DU	272	5	13	18	13	9	22
Total:			272	5	13	18	13	9	22

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 272 daily trips with 18 of those occurring during the morning peak hour and 22 during the afternoon peak hour.

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 existing access. Distribution along Dayton Street is general and assumed to be 50 percent to/from the north and 30 percent to/from the south. Distribution along Iowa Avenue is assumed to be 10 percent to/from the east and 10 percent to/from the west.

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 existing accesses. These volumes are then divided further upon travel through adjacent roadways serving the overall development area. The table below uses the trip generation volumes from Table 2 and denotes projected traffic volumes at each existing access and adjacent intersections.

Development Site Access	AM Peak Hour Inbound Volume	AM Peak Hour Outbound Volume	PM Peak Hour Inbound Volume	PM Peak Hour Outbound Volume
Access on Dayton Street				
Westbound Left	N/A	2	N/A	1
Westbound Right	N/A	7	N/A	5
Northbound Right	1	N/A	2	N/A
Southbound Left	3	N/A	7	N/A
Access on Iowa Avenue				
Eastbound Left	1	N/A	3	N/A
Westbound Right	0	N/A	1	N/A
Southbound Left	N/A	1	N/A	1
Southbound Right	N/A	3	N/A	2
Dayton Street / Iowa Avenue				
Eastbound Through	0	N/A	1	N/A
Westbound Left	N/A	3	N/A	2
Westbound Through	N/A	1	N/A	1
Northbound Through	1	N/A	2	N/A
Northbound Right	1	N/A	2	N/A
Southbound Through	N/A	2	N/A	1

Development Impacts

As Table 2 shows, there is an increase in peak hour traffic volumes anticipated for the proposed development which is considered minor. These minor volumes are not likely to negatively impact operations of Dayton Street or other adjacent roadways or intersections.

Conclusion

This analysis assessed traffic generation for the Granit Pointe Estates 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 existing site accesses, nor at the Dayton Street intersection with Iowa Avenue. 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 Granit Pointe Estates development. Please contact us should further assistance be needed.

Sincerely,

SM ROCHA, LLC

Traffic and Transportation Consultants



Brandon Wilson
Traffic Engineer



Fred Lantz, PE
Traffic Engineer