



August 27, 2021

Tom Gissen
Meritage Homes
8400 E Prentice Avenue, Suite 200
Greenwood Village, CO 80111

**RE: Murphy Creek PA 13, 14, 9-C / Traffic Generation Analysis
Aurora, Colorado**

Dear Mr. Tom Gissen,

SM ROCHA, LLC is pleased to provide traffic generation information for the development entitled Murphy Creek PA 13, 14, 9-C. This development is located on the northwest corner of E Jewell Avenue and Harvest Road in Aurora, Colorado.

The intent of this analysis is to present traffic volumes likely generated by the proposed development, provide a traffic volume comparison to previous land use assumptions approved for the development site, 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 and surrounded by a mix of open space, residential, and recreational land uses. The proposed development is understood to entail the new construction of 132 single-family detached homes.

Proposed access to the development is provided at the following locations: three full-movement access drives onto S Flatrock Trail (referred to as Access A, Access B, and Access C). Access A is proposed as an extension of E Gunnison Drive east of S Flatrock Trail, Access B is proposed as an extension of S De Gaulle Way east of S Flatrock Trail, and Access C is proposed to align with the future North Access serving the Jewell & Flat Rock Trail site as described within the development's previously approved traffic impact analysis¹.

General site and access locations are shown on Figure 1. A conceptual site plan, as prepared by Henry Deign Group Inc., is shown on Figure 2. This plan is provided for illustrative purposes.

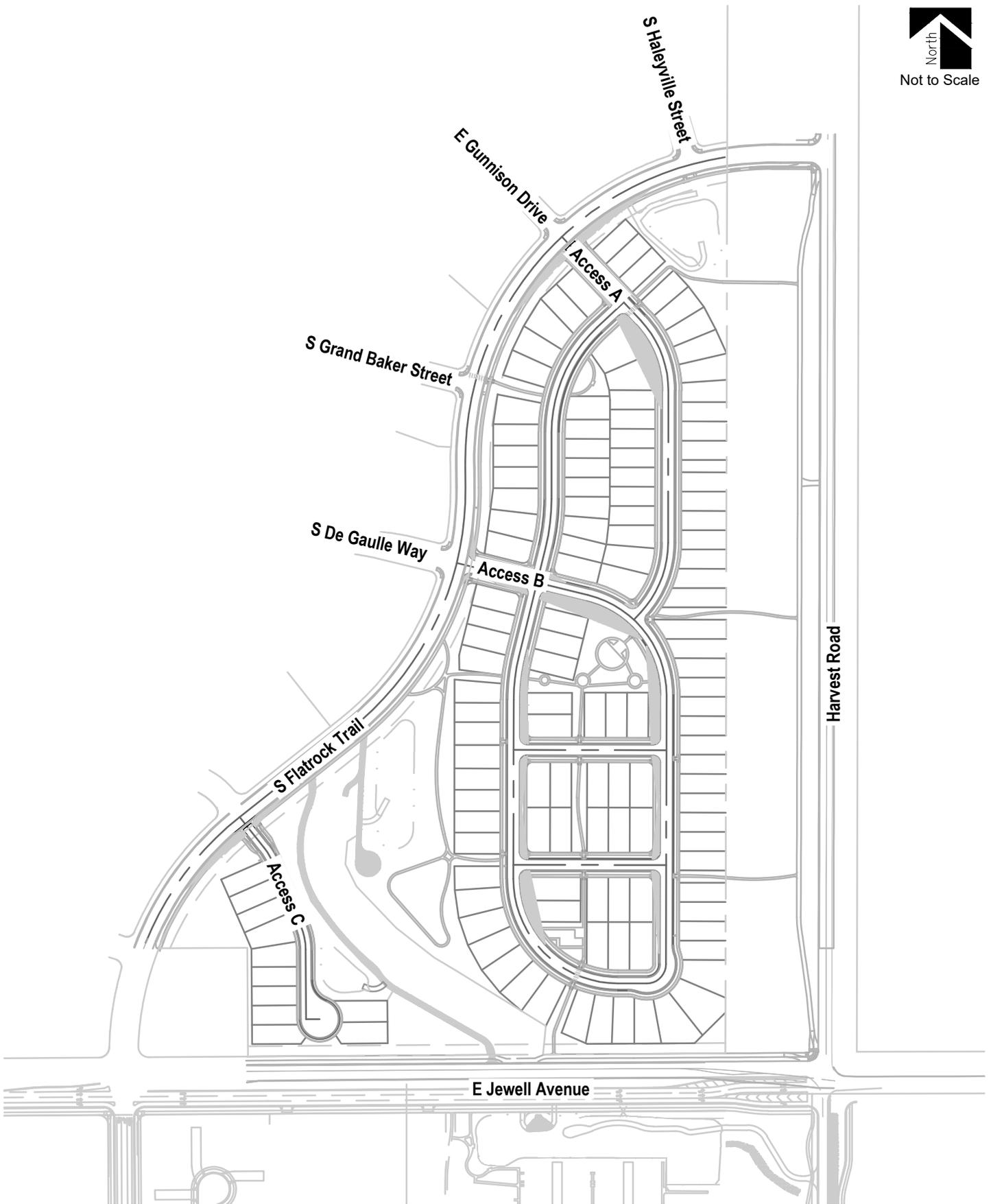
¹ Murphy Creek 15 CSP, LSC Transportation Consultants, Inc., July 2019.



MURPHY CREEK PA 13, 14, 9-C
Traffic Generation Analysis

SM ROCHA, LLC
Traffic and Transportation Consultants

Figure 1
SITE LOCATION



Vehicle Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 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.

The previously approved Murphy Creek Ranch Development traffic impact study² for the overall area used trip generation rates from ITE’s Trip Generation Manual, 6th Edition, and included 98 single-family dwelling units, 81 multifamily dwelling units, and 129,000 square feet of commercial land use in the same development area as currently proposed with this project.

It is important to note that current zoning ordinance allows for a more-dense residential development than that previously analyzed within the Murphy Creek Ranch Development traffic impact study. The approved General Development Plan (GDP)³ prepared for the overall Murphy Creek development area indicates that 136 single-family dwelling units, 112 multifamily dwelling units, and 129,000 square feet of commercial land use are allowed within the same development area as currently proposed with this project.

Table 1 presents average trip generation rates for the previously approved land uses and for the development area proposed. Use of average trip generation rates presents a conservative analysis. ITE land use code 210 (Single-Family Detached Housing) was used for analysis because of its best fit to the proposed land use description.

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
210	Single-Family Detached Housing	DU	9.44	0.19	0.56	0.74	0.62	0.37	0.99
220	Multifamily Housing (Low-Rise)	DU	7.32	0.11	0.35	0.46	0.35	0.21	0.56
820	Shopping Center	KSF	37.75	0.58	0.36	0.94	1.83	1.98	3.81

Key: DU = Dwelling Units. KSF = Thousand Square Feet Gross Floor Area.
 Note: All data and calculations above are subject to being rounded to nearest value.

Trip generation shown above in Table 1 were applied to the previously approved Murphy Creek GDP and to the development area proposed. Site trips analyzed within the Murphy Creek Ranch Development traffic impact study applied trip generation rates from ITE’s Trip Generation Manual, 6th Edition.

² Murphy Creek Ranch Development, LSC Transportation Consultants, Inc., November 2000.

³ Murphy Creek General Development Plan, Amendment No. 1, Murphy Creek LLC, June 19, 2000.

Table 2 summarizes the projected ADT and peak hour traffic volumes likely generated by the land use area proposed and provides comparison to traffic volume estimates for land uses previously approved within the Murphy Creek Ranch Development traffic impact study and within the previously approved Murphy Creek GDP.

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	
<u>Site Development - Previously Approved GDP</u>										
210	Single-Family Detached Housing	136 DU	1,284	25	75	101	85	35	120	
220	Multifamily Housing (Low-Rise)	112 DU	820	12	40	52	40	23	63	
820	Shopping Center	129.0 KSF	4,870	75	46	121	236	256	491	
<i>Previously Approved GDP Total:</i>			6,973	112	161	273	360	314	674	
<u>Site Development - Previously Approved TIS *</u>										
210	Single-Family Detached Housing	98 DU	938	19	55	74	64	35	99	
230	Residential Condo/Townhouse	81 DU	475	6	29	35	29	15	44	
820	Shopping Center	129.0 KSF	8,028	113	72	185	356	386	742	
<i>Previously Approved TIS Total:</i>			9,441	138	156	294	449	436	885	
<u>Site Development - Proposed</u>										
210	Single-Family Detached Housing	132 DU	1,246	24	73	98	82	48	131	
<i>Proposed Total:</i>			1,246	24	73	98	82	48	131	

Note: All data and calculations above are subject to being rounded to nearest value.
* ITE's Trip Generation Manual, 6th Edition.

As Table 2 shows, the proposed development area has the potential to generate approximately 1,246 daily trips with 98 of those occurring during the morning peak hour and 131 during the afternoon peak hour. Table 2 further shows how proposed development traffic volumes do not exceed those approved in the Murphy Creek Ranch Development traffic impact study nor the Murphy Creek GDP.

Comparison of assumed proposed trips to traffic volume estimates from the previously approved Murphy Creek Ranch Development traffic impact study indicate an average trip reduction of 8,195 vehicles per day, or an approximate 87 percent trip reduction.

Comparison of assumed proposed trips to traffic volume estimates from the previously approved Murphy Creek GDP indicate an average trip reduction of 5,727 vehicles per day, or an approximate 82 percent trip reduction.

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.

It should be noted that the Murphy Creek Ranch Development traffic impact study applied a 25 percent reduction for internal capture related to the residential land uses.

Vehicle Trip Generation Comparison & Development Impacts

As Table 2 shows, the proposed development does not exceed traffic volumes approved for the area in comparison to previously projected volumes of the overall development area. These volumes are not likely to negatively impact operations of Cottonwood Drive nor other adjacent roadways or intersections.

Conclusion

This analysis assessed traffic generation for the Murphy Creek PA 13, 14, 9-C development, provided a traffic volume comparison to previous land use assumptions approved for the development site, and considered 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 access, nor at the E Jewell Avenue intersection with Harvest Road, and is in compliance with the Murphy Creek Ranch Development traffic impact study.

We trust that our findings will assist in the planning and approval of the Murphy Creek PA 13, 14, 9-C 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