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Saddlehorn Ranch
Filing No. 2
Transportation Memorandum
(LSC #184751)
November 18, 2022
SF-21-33

Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

Date



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November 18, 2022

Mr. Bill Guman
William Guman & Associates, Ltd.
731 North Weber Street, Suite 10
Colorado Springs, CO 80903

RE: Saddlehorn Ranch Filing No. 2
El Paso County, Colorado
Transportation Memorandum
LSC 184751

Dear Mr. Guman:

LSC Transportation Consultants, Inc. has prepared this transportation memorandum for Filing No. 2 of the Saddlehorn Ranch residential development. The site is located southeast of the intersection of Curtis Road and Judge Orr Road in El Paso County, Colorado. Filing 2 is planned to contain 42 lots for single-family homes. Figure 1 shows the site location. Access is proposed to Curtis Road. This report has been prepared to accompany the Final Plat submittals to the County.

REPORT CONTENTS

The report contains the following:

- The proposed land use and access for the site.
- Note regarding conformance with the Preliminary Plan
- The existing and planned roadways in the study area
- Estimates of the average weekday and peak-hour vehicle-trips to be generated by the development and the directional distribution on the area roadways.
- Assignment of the site's projected traffic volumes to Curtis Road and the site access intersections for the short-term horizon
- Improvements Table with notation for Filing 2
- Improvements to Curtis Road with this Filing
- CDOT-required escrow for a future traffic signal to US Highway 24/Stapleton Drive

SITE **Include discussion on access permit requirements/updates for SH24/Stapleton & SH24/Judge Orr intersections per CDOT comments dated 11/4/21. Within discussion, include whether applicant agrees with CDOT's requirements**

The 824-acre Saddlehorn Ranch is a 2.5-acre-lot, single-family development located south of Judge Orr Road and east of Curtis Road. The currently proposed Filing No. 2 would contain 42 lots and is located adjacent to Curtis Road just north of Filing No. 1 which is located in the southwest corner of the overall

development, as shown in the site plan phasing in Figure 2. At buildout, Saddlehorn Ranch will contain 218 single-family homes. The development was previously studied in the LSC Traffic Impact Study (TIS) dated March 11, 2020. This current plan is in conformance with the Preliminary Plan street/lot layout.

- A new access to Curtis Road is proposed for construction with Filing No. 2 (Benito Wells Trail – which will be located 2,750 feet south of the intersection of Curtis Road/Judge Orr Road).
- Filing 2 will also connect to the Filing 1 road network, which included access to Curtis Road at Oscuro Trail. This Filing No. 1 access is 5,280 feet south of Curtis Road/Judge Orr.
- Note: Additional future connections to the north with future filings will include the following future planned access points to Judge Orr Road:
 - Barrosito Trail – 1,320 feet east of Curtis Road/Judge Orr
 - Del Cambre Trail – 2,750 feet east of Curtis Road/Judge Orr

TRIP GENERATION

Estimates of the vehicle-trips to be generated by the proposed Filing No. 2 development have been developed using the nationally published trip generation rates found in *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Table 1 (attached) shows the trip generation estimate. The table also includes Filing 1 for reference and for purposes of presenting the total Filing 1 plus Filing No. 2 trip generation.

Table 1 shows 213 trips

The Filing No. 2 portion of the development, in the short term, is projected to generate about 427 new vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 8 vehicles would enter and 24 vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 26 vehicles would enter and 16 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The estimated directional distribution of the site-generated traffic volumes on the adjacent roadways is an important factor in determining the site's traffic impacts. Figure 3 shows the directional distribution estimates for the projected site-generated vehicle-trips.

The estimates have been based on the "Short Term Site-Generated Traffic," presented in Figure 5 of the March 11, 2020 TIS report (with minor adjustments specific to this Filing).

When the distribution percentages (from Figure 3) were applied to the trip generation estimates (from Table 1), the Filing No. 2 site-generated traffic volumes at the two Saddlehorn Ranch access points on Curtis Road were determined. Figure 4 shows the "Short-Term Filing No. 2 Site-generated traffic" volumes. Figure 5 shows the "Filing 1 plus Filing 2 Site Generated traffic" volumes following buildout of these two filings. These volumes assume the short-term roadway system – IE not including the extension of Stapleton Drive west to Briargate Parkway.

Future needs to account
for 20 years out.

2040 TOTAL TRAFFIC

Please refer to the Preliminary Plan TIS report for future projected total traffic volumes.

ROADWAY IMPROVEMENTS

Curtis Road Improvements

Include what classification
is for Curtis Road.

The construction plans for Curtis Road with Filing No. 2 indicate that improvements will extend about 775 feet north of Benito Wells Trail and 1,100 feet south of Benito Wells Trail. Travel lanes will be 12-feet wide. The cross section will include 8' outside paved shoulder and 2' gravel shoulder along the east side of Curtis Road and a 2-foot outside paved shoulder and 2' gravel shoulder on the west side of Curtis Road.

Auxiliary turn lanes to be constructed at the intersection of Benito Wells Trail/Curtis Road will include a northbound right-turn deceleration lane and a southbound left-turn deceleration lane.

Adjacent to the northbound right-turn lane on the east side of the roadway, there will be a 2-foot-wide outside paved shoulder and a 2-foot-wide gravel shoulder. The Curtis Road section which will include the southbound left-turn lane will have a cross section including 2' outside paved shoulders (both sides) and 2' gravel shoulders.

Other Improvements

- Table 10 contained in the Preliminary Plan TIS report presented the roadway improvement recommendations including auxiliary turn lane needs, traffic control, anticipated right-of-way dedication, and corridor preservation. A copy of that table is attached with notation for improvements associated with Filing No. 2.
- Auxiliary turn lanes at the site access points will need to be phased with the development. Table 10 from the Preliminary Plan TIS report also includes potential additional turn lane needs at offsite intersections within the study area.
- US Highway 24/Stapleton is planned to be signalized. CDOT has indicated a requirement for participation toward the cost of a future traffic signal at Stapleton and US Highway 24. The development is required to participate in the cost of the future traffic signal at Stapleton and US Highway 24. Based on the average AM & PM site-generated passenger cars directly impacting the 4-hour warrant, the development would be responsible for ~\$75,000, (6.5 new vehicles / 60 vehicles-to-warrant x ~\$700K/signal cost). Note: There are a number of developments – in progress and future/planned - in the area which will also add traffic to this intersection and impact the 4-hour warrant. As CDOT collects escrow for other developments, LSC recommends that as the collective impact trips (directly impacting the 4-hour warrant volumes) by area developments begins to exceed the 60 vehicle-per-hour denominator, fair-share recalculation of pro-rata share escrow amounts and credit be provided to developments according to the updated fair-share calculations. Also, once the signal is

Include left-turn lane improvements on Falcon Highway & West bound right-turn decel lane on Judge Orr Road, approaching Curtis Road and providing escrow for said improvements.

installed, credit should be provided from the Countywide Fee Program based on a ratio of fee program unit signal cost divided by the \$700K signal cost. The applicant concurs with this paragraph.

- Curtis Road, Judge Orr Road, and Stapleton Road north of Curtis Road are shown to need roadway upgrades on the 2040 MTCP based on anticipated growth in the general area and the Stapleton extension to Briargate Parkway. The plans for Curtis Road improvements discussed above will be interim improvements that will include applicant-provided additional width on the east side of the roadway.
- The intersections of Curtis/Judge Orr and Curtis/Falcon Highway may need to be upgraded to roundabout or traffic signal control by 2040 based on anticipated growth in the general area and the Stapleton extension to Briargate Parkway.

FINDINGS AND CONCLUSIONS

Trip Generation

Address how and when Curtis Road will be widened to the south to Falcon Highway, north to Judge Orr, and how any intersection improvements will be determined.

Please refer to the attached Table 1 for the Filing 2 trip generation estimate. Filing 1 trip generation and the combination of Filings 1 and 2 trip generation are also shown in the table.

Projected Levels of Service

- Please refer to the “Projected Levels of Service” section in the Preliminary Plan report for the level of service analysis. Table 7 of that report indicates the Intersection of Benito Wells Trail/Curtis Road is projected to operate at LOS C in the long-term scenario.
- Level of service analysis results in the Preliminary Plan report indicate that roundabout or traffic signal control may be needed at the intersections of Curtis Road/Judge Orr and Falcon Highway/Curtis Road during the long term in order for the intersections to operate at an acceptable level of service (LOS D or better).

RECOMMENDED IMPROVEMENTS

Please refer to the “Roadway Improvements” section above.

ROW Dedication and Preservation

This project will be required to dedicate right-of-way for future improvement to Curtis Road. Details are presented in Table 10.

Subdivision Roadway Classifications

All roadways within this subdivision filing should be classified as Rural Local.

El Paso County Road Impact Fee Program

This project will be subject to participation in the El Paso County Road Impact Fee Program.

This project will request annexation into the 10 mil PID. The up-front fees will be per the current fee schedule for Single Family Detached housing.

Deviations from ECM Criteria

Curtis Road

A previously-submitted deviation (by JR Engineering, dated December 3, 2019) requested a deviation from ECM Section 2.2.4, criteria for Curtis Road, a Rural Minor Arterial roadway. The ECM requires that Rural Minor Arterial cross-sections consist of a 12-foot travel lane with an 8-foot paved shoulder. The applicant has proposed an alternative in which Curtis Road would have 2-foot paved shoulders instead of 8-foot shoulders, as this is the maximum that can fit within the existing western right-of-way (ROW) without needing to acquire additional ROW from the adjacent property owner. Although a Rural Minor Arterial cross-section could be constructed on the east side of Curtis Road, it is not the appropriate time to build out the full section (consisting of 8-foot paved shoulders) until development on both sides of Curtis Road can be constructed. Please refer to the attached deviation and deviation exhibit for more information.

* * * * *

Please include a copy of the deviation in the appendix.

Please contact me if you have any questions regarding this report.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

Jeffrey C. Hodsdon, P.E.
Principal

JCH:JAB/jas

Enclosures: Table 1
Figures 1-5
Roadway Improvements Table

Table 1

The table area is currently blank.



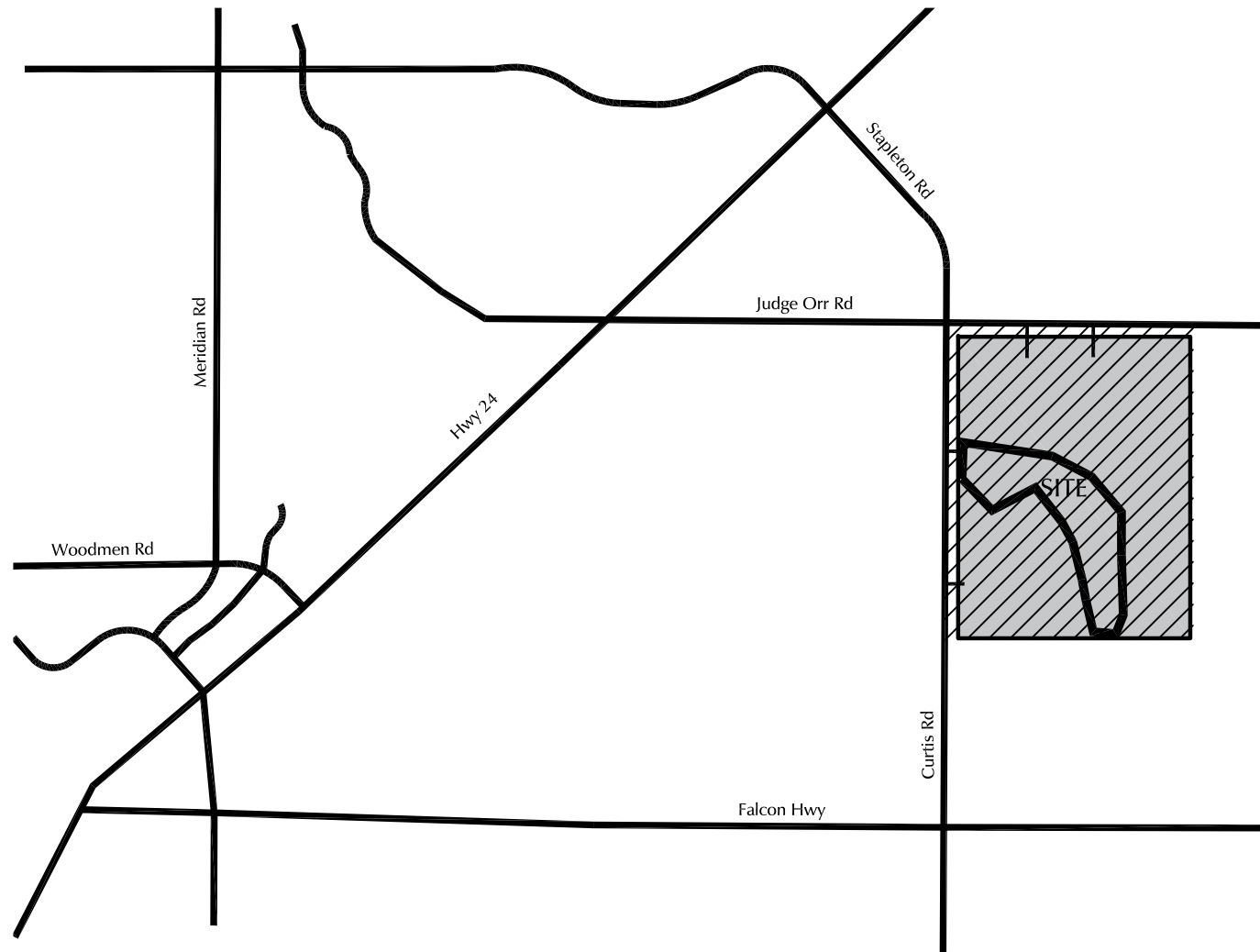
Number of units are switched between filings. Per Site plan, Filing 1 is 49 lots and Filing 2 is 42 lots

Table 1: Trip Generation Estimate

ITE		Trip Generation Rates ⁽¹⁾								Trips Generated			
Code	Land Use	Value	Units	Average Weekday	A.M. Peak		P.M. Peak		Average Weekday	A.M. Peak		P.M. Peak	
					In	Out	In	Out		In	Out	In	Out
Filing No. 1													
210	Single-Family Detached Housing	42	DU	10.16	0.19	0.56	0.63	0.37	213	8	24	26	16
Filing No. 2													
210	Single-Family Detached Housing	49	DU	10.16	0.19	0.56	0.63	0.37	498	9	27	31	18
Total		91	DU		Filings 1 & 2 Total				712	17	51	57	34
Source: ITE <i>Trip Generation</i> , 11th Edition 2021										Date:2/8/2022			

Figure 1-5







Filing
No. 2
42 Lots

Filing
No. 1
49 Lots

Figure 2
Site
Plan

Saddlehorn Ranch (LSC #184751)



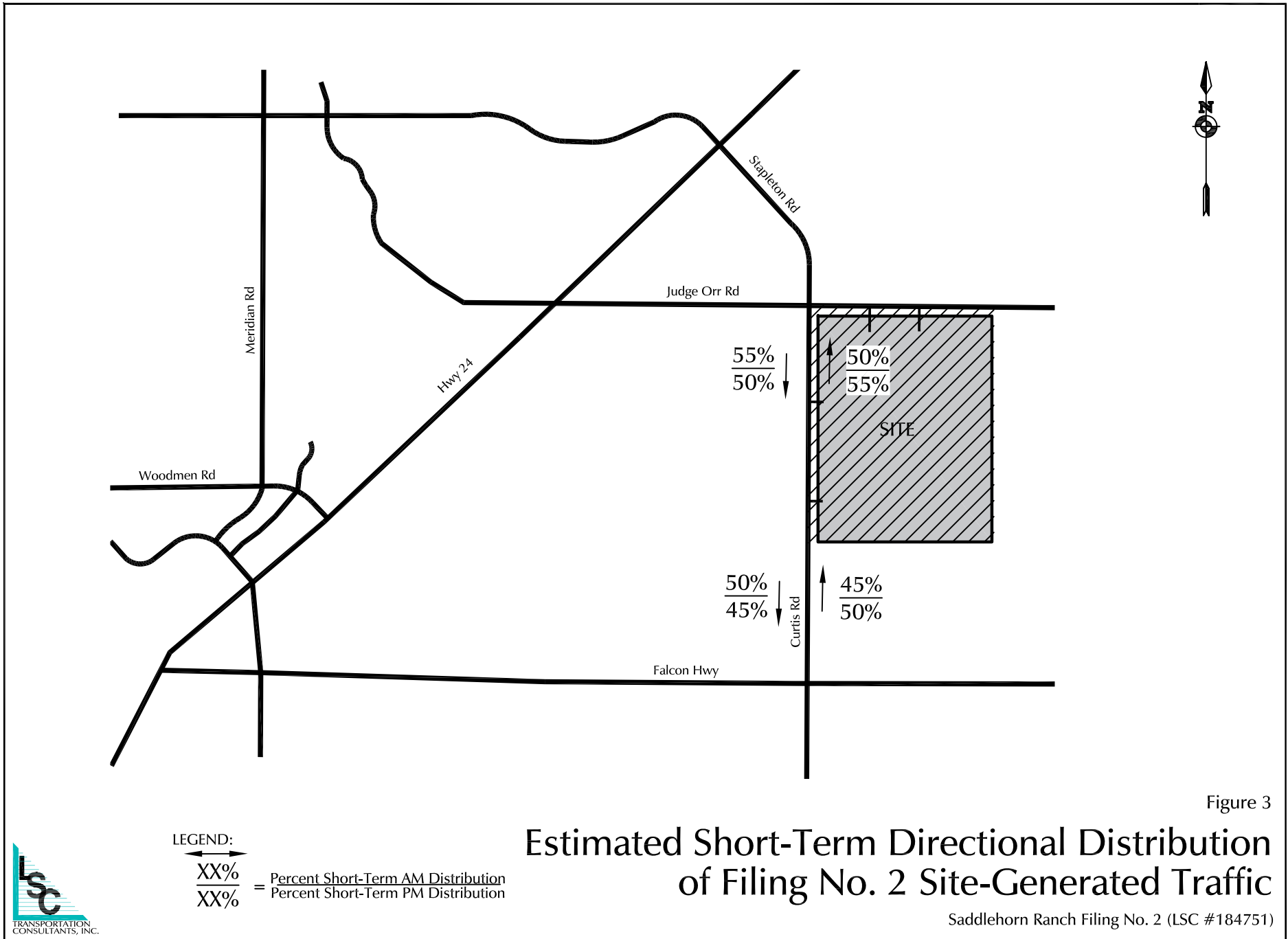
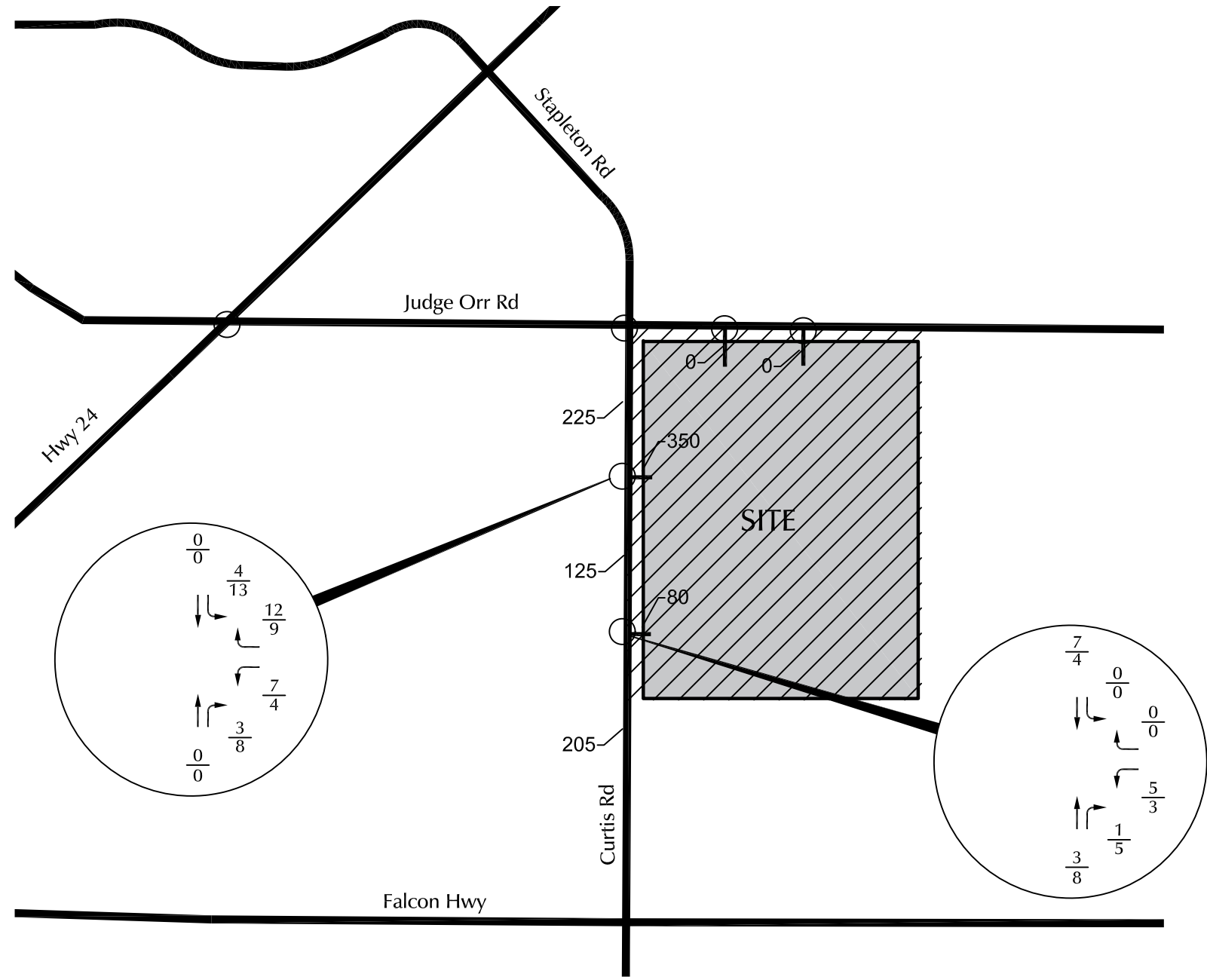


Figure 3

Estimated Short-Term Directional Distribution of Filing No. 2 Site-Generated Traffic

Saddlehorn Ranch Filing No. 2 (LSC #184751)





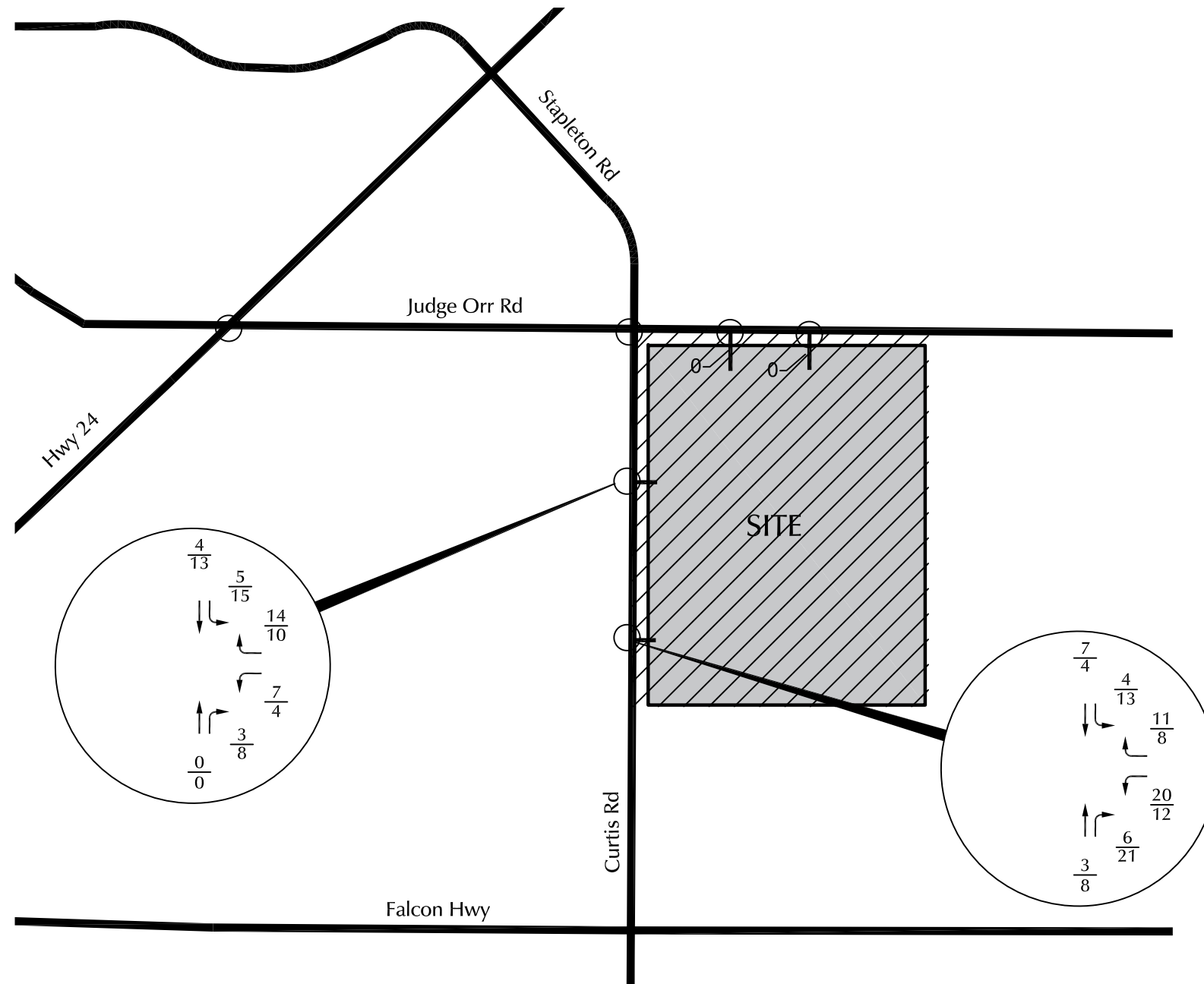
LEGEND:

- $\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
- $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
- X,XXX= Average Daily Weekday Traffic (vehicles per day)



Short-Term Filing No. 2 Site-Generated Traffic

Figure 4



LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Average Daily Weekday Traffic (vehicles per day)

Short-Term Filing Nos. 1 & 2 Site-Generated Traffic

Figure 5

Saddlehorn Ranch Filing No. 2 (LSC #184751)

Roadway Improvements Table



Table 10*: Roadway Improvements for Saddlehorn Ranch			
(w/November 2022 Notations for Filing No. 2 Plat Submittal)			
Offsite Intersections			
Item #	Improvement	Timing	Responsibility
US Highway 24/Judge Orr Intersection			
1.1	Realignment of Judge Orr Road at US Highway 24 per CDOT Hwy 24 PEL Study	Future (the PEL study identified this as high priority project with a time frame of less than 5 years)	CDOT
1.2	Southwest-bound right-turn deceleration lane on US 24 approaching Judge Orr Road	As required by other development(s) or with realignment of US 24/ Judge Orr	CDOT or by others
1.3	Construct southwest-bound right-turn acceleration lane on US 24 at Judge Orr Road	As required by other development(s) or with realignment of US 24/ Judge Orr	CDOT or by others
1.4	Eastbound left-turn lane on Judge Orr Road approaching US 24	With realignment of US 24/ Judge Orr	CDOT
1.5	Westbound dual left-turn lanes on Judge Orr Road approaching US 24	With realignment of US 24/ Judge Orr	CDOT
1.6	Northeast-bound right-turn deceleration lane on US 24 approaching Judge Orr Road	With realignment of US 24/ Judge Orr	CDOT
1.7	Eastbound right-turn deceleration lane on Judge Orr Road approaching US 24	As required by other development(s) or with realignment of US 24/ Judge Orr	CDOT or by others
US Highway 24/Stapleton Intersection			
2.1	Signalize the intersection	Once warrants are met	CDOT is collecting escrow from area developments impacting this intersection with each subdivision filing. CDOT is requiring escrow with Filing 2. Please refer to the report narrative for details.
Curtis Road/Falcon Highway			
3.1	Lengthen eastbound left-turn lane to ECM standards on Falcon Highway approaching Curtis Road	Currently warranted by ECM	Escrow for pro-rata share of improvement or construction at the time of Phase 2 development (fee program credit per fee program provisions)
3.2	Long Term: In the case of a future signalized intersection - Construct southbound right-turn deceleration lane on Curtis Road approaching Falcon Highway	Upon Signalization	Escrow for pro-rata share of improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
3.2	Long Term: Reconstruct intersection as a modern roundabout (or signalize the intersection)	Once LOS of AWSC drops below acceptable levels (roundabout); or once signal warrants are met (for conversion to a signal or roundabout)	El Paso County -- This intersection will be fee-program eligible for a signal/roundabout and applicant will pay fee program traffic impact fees.
Adjacent County Arterial Roadway ROW Requirements			
4.1	Judge Orr Right-of-Way Dedication - 4 Lane Minor Arterial, Rural 130' to 150 estimated right-of-way dedication' (Note: 4-lane Rural Principal is 180')	Shown in 2040 MTCP	Applicant
4.2	Judge Orr - 4 Lane Minor Arterial - Beyond above dedication, no additional right-of-way preservation needed	Shown in 2060 Corridor Pres Plan	Applicant
4.3	Curtis Road - 2 Lane Rural Principal Arterial 72' from existing centerline/section line to proposed ROW lind. This translates to 42 feet of ROW dedication. (Note: 4-lane Rural Principal is 180')	To be dedicated with the plat.	Applicant
4.4	Curtis Road - 4 Lane Rural Principal Arterial 180' right-of-way preservation (90 feet east of the existing centerline/section line).	Shown in 2060 Corridor Pres Plan	Applicant
Roadway Segment Improvements			
5.1	Falcon Highway - Upgrade to Two-Lane Rural Minor Arterial	Shown in 2040 MTCP	MTCP Project No. U5; Details TBD; applicant will pay fee program traffic impact fees.
5.2	Judge Orr Road - Widen to Four Lane Rural Minor Arterial	Shown in 2040 MTCP	MTCP Project No. C15; Details TBD; - applicant will pay fee program traffic impact fees.
5.3a	Curtis Road - Interim upgrades to Curtis Road - to be constructed with Filing No. 2 - Please refer to report narrative for details.	To be constructed with Filing No. 2	Applicant, potentially subject to fee program credit.
5.3	Curtis Road - Upgrade to Two-Lane Rural Principal Arterial	Shown in 2040 MTCP	MTCP Project No. U1; Applicant per rezone condition of approval, potentially subject to fee program credit.
Internal Subdivision Roadways			
6.1	Construct internal streets to County Rural Local Standards	Per the Filing 2 Construction Plans	specify timing in relation to Saddlehorn filing numbers
Adjacent Intersection and Access Intersections			
Item #	Improvement	Timing	Responsibility
Judge Orr/Curtis Road Intersection			
7.1	Westbound right-turn deceleration lane	Once peak hour westbound right turn volume exceeds 50 vehicles per hour.	Escrow for improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
7.2	Eastbound right-turn deceleration lane	Currently warranted by ECM	Escrow for improvement or construction at the time of Phase 2 development (fee program credit per fee program provisions)
7.3	Potentially sign for all way stop-sign control (AWSC)	Once warrants for AWSC are met	El Paso County
7.4	Long Term: Reconstruct intersection as a modern roundabout (or signalize the intersection)	Once LOS of AWSC drops below acceptable levels (roundabout); or once signal warrants are met (for conversion to a signal or roundabout)	El Paso County; This intersection will be fee-program eligible for a signal/roundabout and applicant will pay fee program traffic impact fees.
7.5	Long Term: In the case of a future signalized intersection - lengthening of northbound and southbound left-turn deceleration lanes.	As needed based on future speed limit and turning volume/stacking length criteria.	Escrow for improvement or construction if warranted at the time of development (fee program credit per fee program provisions)
Judge Orr/Barrosito Trail			
8.1	No Auxiliary Turn Lanes Required	-	-
Judge Orr/Del Cambre Trail			
9.1	No Auxiliary Turn Lanes Required	-	-
Curtis Road/Oscuro Trail			
10.1	<u>Short Term</u> No Auxiliary Turn Lanes Required	-	-
10.2	<u>Long Term</u> Construct northbound right-turn deceleration lane on Curtis Rd approaching the site access	With Phase 2/3 site development	Applicant
Curtis Road/Benito Wells Trail			
11.1	<u>Short Term</u> No Auxiliary Turn Lanes Required	Construction Plans show Auxiliary Turn Lanes to be constructed with Filing 2	-
11.2	<u>Long Term</u> Construct southbound left-turn deceleration lane on Curtis Rd approaching the site access	UPDATE: To be constructed with Filing No. 2	Applicant
11.3	<u>Long Term</u> Construct northbound right-turn deceleration lane on Curtis Rd approaching the site access	UPDATE: To be constructed with Filing No. 2	Applicant

* Table 10 From the Saddlehorn Ranch TIS dated March 11, 2020.

Source: LSC Transportation Consultants, Inc. REVISIONS: 2/8/2022, 11/18/2022 for Filing No. 2.