

Table 1: Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) ⁽¹⁾
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more

(1) For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.

The intersection of Burgess/Vollmer has been analyzed based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The results of the analysis are shown on Figure 5c.

Burgess/Vollmer

Unresolved:
State if signalization of this intersection or other studied intersections is recommended. Provided table analysis.

The stop-sign-controlled intersection of Burgess/Vollmer is currently operating at LOS E for the eastbound approach and LOS F for the westbound approach during the afternoon peak hour.

Safety and Accident Analysis

The Colorado State Patrol (CSP) provided LSC with crash history data for Vollmer Road between Tahiti Drive and Burgess Road from September 2019 through September 2022. During the reported time period, there were twelve reported crashes. Of the twelve reports, ten were single-vehicle non-intersection-related crashes on Vollmer Road. One crash involved a southbound vehicle that turned right onto Poco Road and crashed into several cars parked on Poco Road partially in the lane. The only intersection-related crash occurred in June 2022. A vehicle heading northbound on Vollmer Road was slowing to turn left at Lochwinnoch Road and the vehicle behind them attempted to pass on the left side. The crash history data has been attached.

BASELINE CONDITIONS

Baseline traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development’s trip generation of site-generated traffic volumes. Baseline traffic (for a specified horizon year) includes the through traffic and the traffic generated by nearby developments (existing and planned, including traffic generated by

LSC Responses to TIS Redline Comments

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 Number: 1 Author: CDurham Subject: Text Box Date: 12/20/2023 3:12:34 PM

[Unresolved: State if signalization of this intersection or other studied intersections is recommended. Provided table analysis.](#)

 Author: kdferrin Subject: Sticky Note Date: 1/12/2024 3:48:20 PM
LSC Response: All-Way, Stop-Sign Control and Traffic Signal Control warrant analysis has been included in the updated TIS.

Recommended Improvements

- Table 5 shows detailed **intersection** improvements needed with SRE Filing 5 Preliminary Plan at the site-access points and the intersection of Briargate/Sterling Ranch. The recommended improvements are based on the short-term and 2043 total traffic volumes shown in Figures 12b and 12b and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)*.
- Table 6 shows a list of the **roadway segment** improvements in the vicinity of the site. Please see Figure 14 for a map of the key street segment locations. These recommendations are consistent with the LSC Sketch Plan TIS report.

TRANSPORTATION IMPROVEMENT FEE PROGRAM AND CREDIT AGREEMENTS

The applicant will be required to participate in the Countywide Transportation Improvement Fee Program. These projects will annex into the 5 mil PID, which has a per-lot upfront building permit fee of \$2,527 per dwelling unit. The total building permit fee amount for the 160 lots within SRE Phase 1 Preliminary Plan would be \$195,360. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

A road fee credit agreement and development agreement and Subdivision Improvements Agreement will be required to address developer's road fee credits for construction of Vollmer Road. Additional credit agreements will be needed with each phase of construction to account for reimbursement of costs for the additional lanes and major intersection improvements.

* * * * *

Unresolved:
Include a section discussing the proposed rezone
for filing 5 and impact to the county roadway.

☰ Number: 1 Author: CDurham Subject: Text Box Date: 12/20/2023 3:13:23 PM

Unresolved: Include a section discussing the proposed rezone for filing 5 and impact to the county roadway.

↩ Author: kdferrin Subject: Sticky Note Date: 1/16/2024 9:03:37 AM

LSC Response: The Land Use section on page 2 of this report was expanded to address this issue. The revised TIS will further clarify that the zone change will not result in additional impacts to county roadway beyond those identified in the MTIS.

**Table 5
Sterling Ranch East Filing 5
Intersection Improvements**

Item #	Improvement	Trigger	Timing	Responsibility
1) Burgess Road/Vollmer Road				
1	Reconstruct as a modern one-lane roundabout	When the LOS degrades below LOS F	Existing deficiency	This intersection may be eligible intersection under the fee impact program
5) Briargate Parkway/Sterling Ranch Road				
2	Construct an eastbound left-turn lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 435' long plus a 200' taper.	eastbound left-turn volume > 10 vph	With Sterling Ranch East Filing 1	Sterling Ranch
3	Construct an eastbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 235' long plus a 200' taper.	eastbound right-turn volume > 25 vph	With Sterling Ranch East Filing 1	Sterling Ranch
4	Construct a northbound to eastbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. The lane should be 580' long plus a 180' taper.	northbound right-turn volume > 50 vph	Long Term (with the construction of Briargate Parkway east of Sterling Ranch Road)	Sterling Ranch
5	Construct a westbound left-turn lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 285' long plus a 200' taper.	westbound left-turn volume > 10 vph	Long Term (with the construction of Briargate Parkway east of Sterling Ranch Road)	Sterling Ranch
6	Construct an eastbound right-turn deceleration lane on Briargate Parkway approaching Sterling Ranch Road. The lane should be 235' long plus a 200' taper.	eastbound right-turn volume > 25 vph	Long Term (with the construction of Briargate Parkway east of Sterling Ranch Road)	Sterling Ranch
7	Construct a southbound to westbound right-turn acceleration lane on Briargate Parkway at Sterling Ranch Road. The lane should be 580' long plus a 180' taper.	southbound right-turn volume > 50 vph	With Sterling Ranch East Filing 2	Sterling Ranch
8) Sterling Ranch Road/Oak Park Place				
8	Construct a southbound left-turn lane on Sterling Ranch Road approaching Oak Park Place. The lane should be 220' long plus a 160' taper.	southbound left-turn volume > 25 vph	A center painter median is part of the standard Non-Residential Collector cross section and a left-turn lane is planned with Sterling Ranch East Filing 1	Sterling Ranch
9	Construct a northbound right-turn deceleration lane on Sterling Ranch Road approaching Oak Park Place. The lane should be 155' long plus a 160' taper.	northboundbound right-turn volume > 50 vph	Planned with Sterling Ranch East Filing 5	Sterling Ranch
12) Marksheffel Road/Vollmer Road				
10	Signalization of the intersection	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Not Anticipated With Sterling Ranch East Filing 5	This intersection may be eligible intersection under the fee impact program
13) Marksheffel Road/Sterling Ranch Road				
11	Signalization of the intersection	Once warrants are met. The decision on timing of traffic signal installation rests with The City of Colorado Springs.	Not Anticipated With Sterling Ranch East Filing 5	SRMD#3
305) Sterling Ranch Road/Lake Tahoe Drive				
12	Construct an northeastbound left-turn deceleration lane on Sterling Ranch Road approaching Lake Tahoe Drive. The lane should be 225' long plus a 160' taper	northeastbound left-turn volume > 25 vph	With Sterling Ranch East Filing 1	Sterling Ranch
13	Construct a southwestbound left-turn lane on Sterling Ranch Road approaching Lake Tahoe Drive. The lane should be 205' long plus a 200' taper.	southwestbound left-turn volume > 25 vph	The left-turn volumes are not projected to exceed the threshold, however, a center painter median is part of the standard Non-Residential Collector cross section and a left-turn lane is planned with Sterling Ranch East Filing 1	Sterling Ranch
14	Construct an northeastbound right-turn deceleration lane on Sterling Ranch Road approaching Lake Tahoe Drive. The lane should be 155' long plus a 160' taper	northeastbound right-turn volume > 50 vph	Planned with Sterling Ranch East Filing 5	Sterling Ranch
306) Sterling Ranch Road/Newport Beach Drive				
14	Construct a northeastbound left-turn lane on Sterling Ranch Road approaching Newport Beach Drive. The lane should be 205' long plus a 200' taper.	northeastbound left-turn volume > 25 vph	With Sterling Ranch East Filing 1	Sterling Ranch
15	Construct a southwestbound left-turn lane on Sterling Ranch Road approaching Newport Beach Drive. The lane should be 205' long plus a 200' taper.	southwestbound left-turn volume > 25 vph	The left-turn volumes are not projected to exceed the threshold, however, a center painter median is part of the standard Non-Residential Collector cross section and a left-turn lane is planned with Sterling Ranch East Filing 5	Sterling Ranch

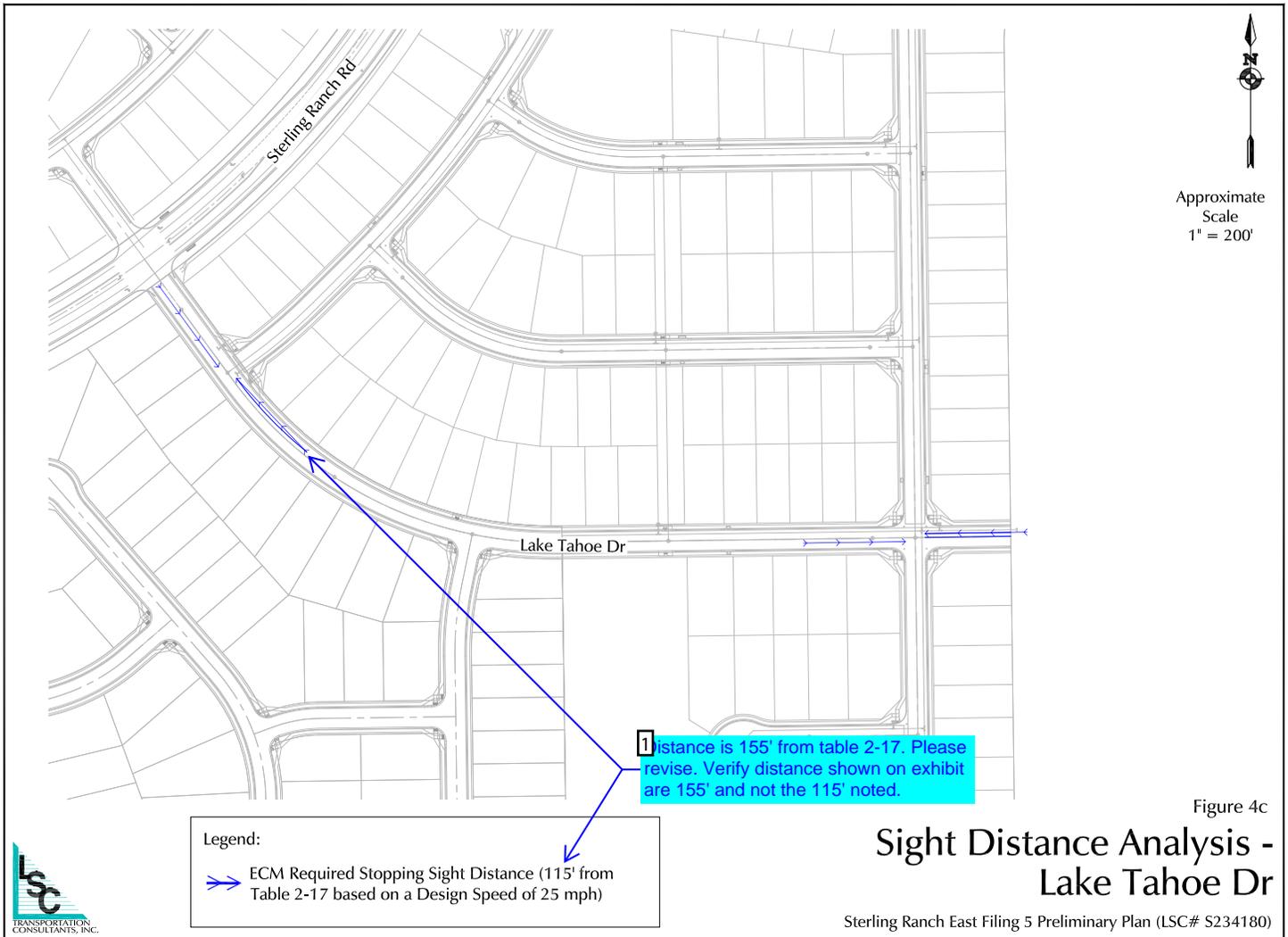
Source: LSC Transportation Consultants, Inc. (November 2023)

Highlight items to be completed with this filing for easy reference.

 Number: 1 Author: CDurham Subject: Text Box Date: 12/20/2023 8:29:22 AM

[Highlight items to be completed with this filing for easy reference.](#)

 Author: kdferrin Subject: Sticky Note Date: 1/16/2024 9:03:24 AM
LSC Response: Revised as requested.



Legend:
 ➤ ECM Required Stopping Sight Distance (115' from Table 2-17 based on a Design Speed of 25 mph)

1 distance is 155' from table 2-17. Please revise. Verify distance shown on exhibit are 155' and not the 115' noted.

Approximate Scale
 1" = 200'

Sight Distance Analysis - Lake Tahoe Dr

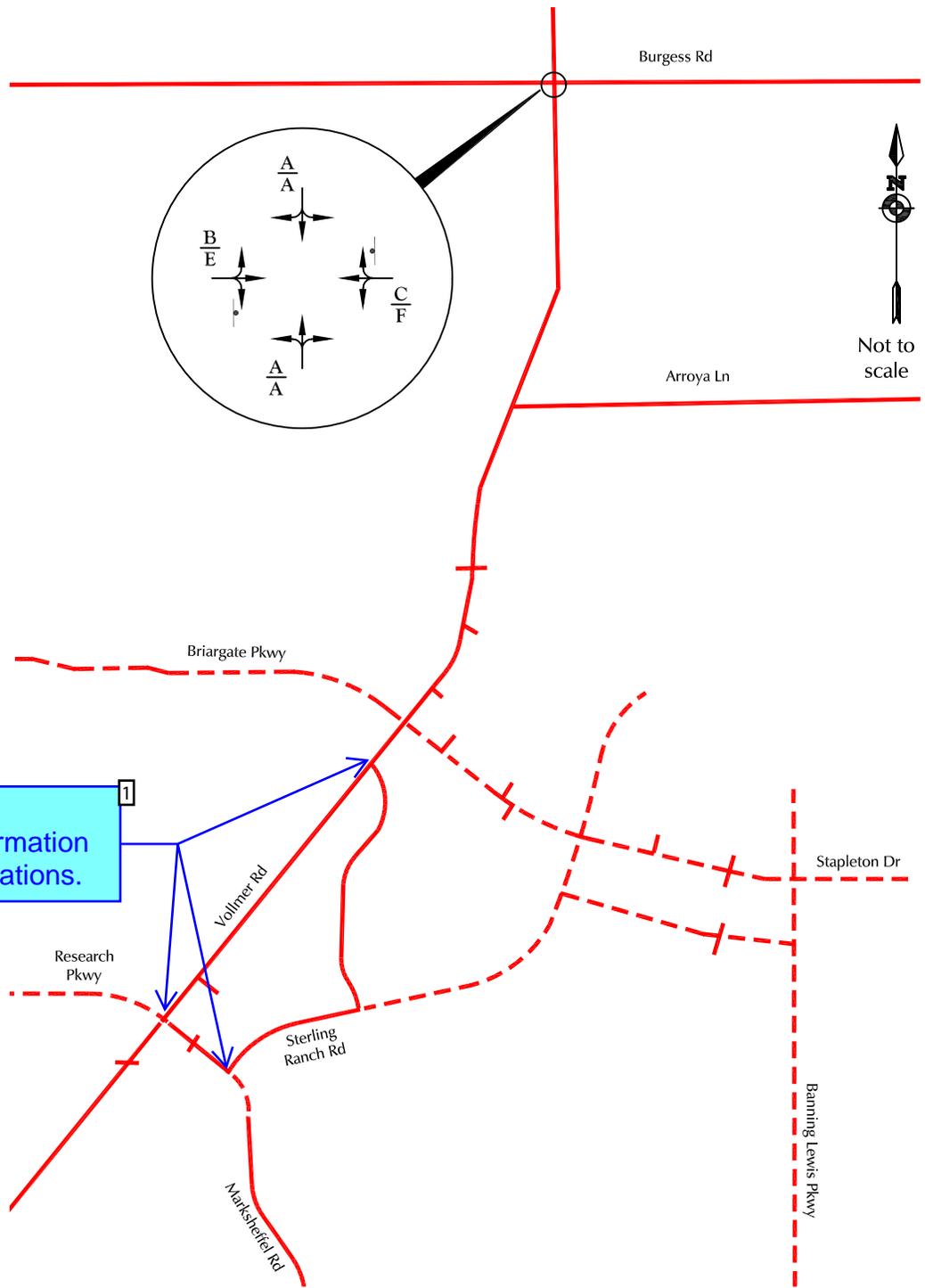
Figure 4c

Number: 1 Author: CDurham Subject: Callout Date: 12/20/2023 8:36:25 AM

Distance is 155' from table 2-17. Please revise. Verify distance shown on exhibit are 155' and not the 115' noted.

 Author: kdferrin Subject: Sticky Note Date: 1/16/2024 9:03:14 AM

LSC Response: LSC verified that the distances shown on the exhibit are 155'. The legend has been corrected in the updated TIS.



1
Unresolved:
Provide information
for these locations.

LEGEND:

$$\frac{A}{B} = \frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$$

† = Stop Sign

- Existing Roadway
- - - - Future Roadway

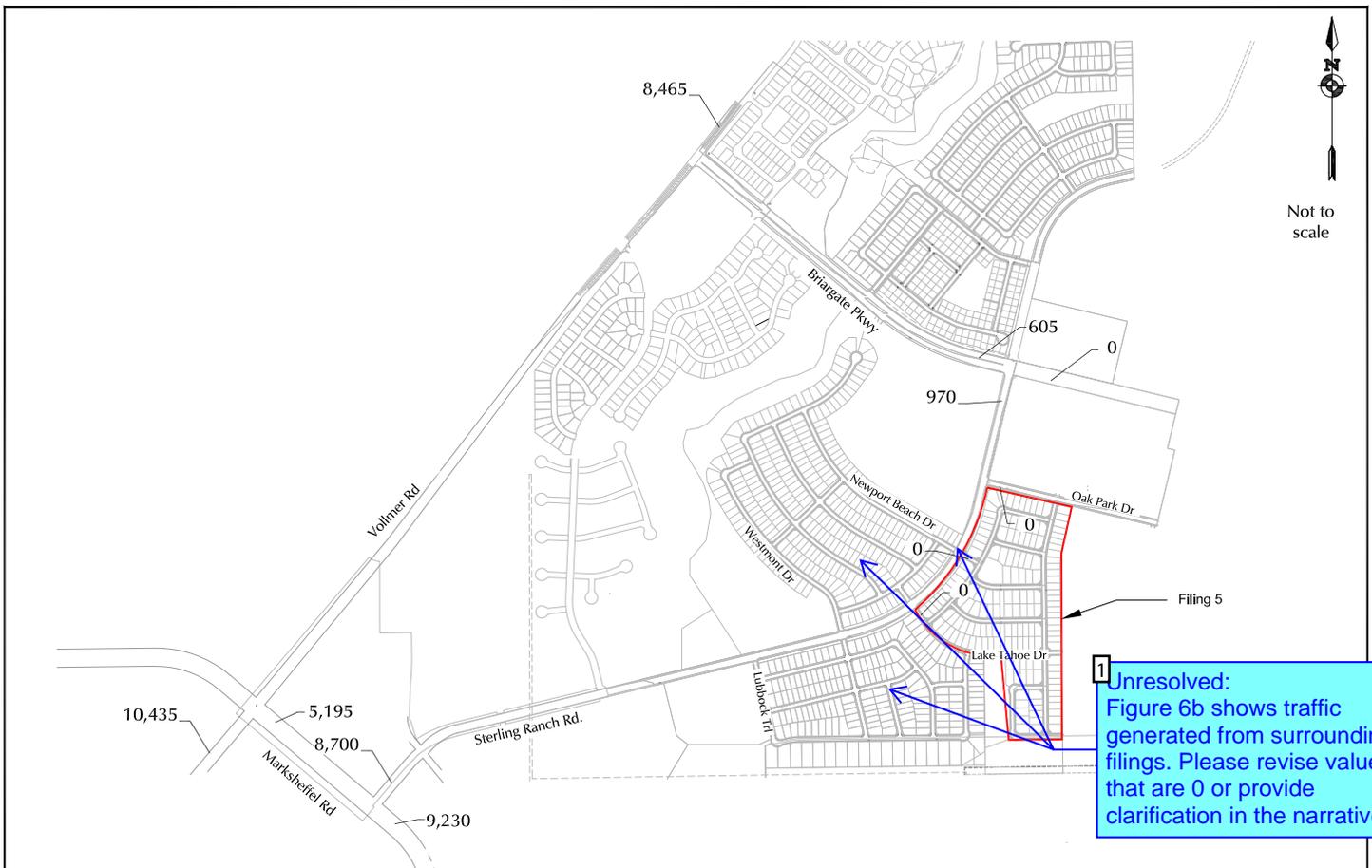


Figure 5c
**Existing Lane Geometry,
Traffic Control, and Level of Service**

 Number: 1 Author: CDurham Subject: Callout Date: 12/20/2023 8:38:44 AM

Unresolved: Provide information for these locations.

 Author: kdferrin Subject: Sticky Note Date: 1/16/2024 9:03:05 AM
LSC Response: The additional information has been provided as requested.



Not to scale

LEGEND: XXX = Average Weekday Traffic (vehicles per day)(AWT)



Short-Term Background Average Weekday Traffic

Figure 6a

Sterling Ranch East Filing 5 Preliminary Plan (LSC# S234180)

Number: 1 Author: CDurham Subject: Callout Date: 12/20/2023 3:15:48 PM

Unresolved: Figure 6b shows traffic generated from surrounding filings. Please revise values that are 0 or provide clarification in the narrative.

 Author: kdferrin Subject: Sticky Note Date: 1/16/2024 9:02:56 AM

LSC Response: The narrative has been revised to clarify that the short-term background traffic only includes traffic generated by the approved filings (Filings 1 and 2) within Sterling Ranch East Preliminary Plan 1.