# Sterling Ranch East Rezoning \& Preliminary Plan SP-22-004, P-22-012, P-22-013 

## Traffic Engineer's Statement

(Includes copied
P-22-012 comments)

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.

east side of Sand Creek area. This is shown in Figure 2. A 5-foot trail along the south boundary will provide connectivity from the eastern portion of Sterling Ranch to the Regional Trail on the west side of Sand Creek and the community parks, trails, and open space within Sterling Ranch.

A detached sidewalk will be provided along the west side of Sterling Ranch Road-The multi-use paved shoulder on Sterling Ranch Road will accommodate bicycles.

## Proposed Access Points

and both sides of Briargate Parkway?
Figure 3 shows the roadway connections that are planned to be constructed in the short term. As shown in Figure 3, in the short term Briargate Parkway is planned to be constructed to its final cross section between Vollmer Road and Sterling Ranch Road, Marksheffel Road is planned to be completed between Vollmer Road and Woodmen Road, and Sterling Ranch Road is planned to be constructed from Marksheffel Road to the northmost access point within the Sterling Ranch East Phase 1 Preliminary Plan area.

Figure 2 shows the access plan for the SRE Phase 1 Preliminary Plan. The access plan for this Preliminary plan is consistent with the access plan shown in the February 10, 2023 LSC Sketch Plan Master TIS.

## Briargate Access Points

The Briargate Parkway-Stapleton Road Corridor Study Appendix D: Access Control Plan shows the access locations and intersection access restrictions along Briargate Parkway between Black Forest Road and Meridian Road. The currently proposed plan has several access points that are not included in the access control plan.

- The access control plan shows a right-in/right-out access point north and south of Briargate Parkway between Wheatland Drive and Sterling Ranch Road. The currently proposed Preliminary Plan shows two offset three-quarter movement (left-in/right-in/right-out only) access points. A deviation request is being submitted with this application for the north-side access. The south-side access is not part of these Sterling Ranch East applications. However, it has been shown in case the school district needs it for access and/or adequate school circulation. The access request would be reviewed at the time of development of the future school.
- The access control plan shows the intersection of Briargate Parkway/Sterling Ranch Road as a three-leg intersection. The currently proposed Preliminary Plan includes a north leg at this future full-movement signal-controlled intersection.

The intersections of Lubbock Trail/Sterling Ranch Road (\#303), Bellflower Drive/Sterling Ranch Road (\#304), Lake Tahoe Drive/Sterling Ranch Road (\#305), Newport Beach Place/Sterling Ranch Road (\#306), Idaho Falls Drive/Sterling Ranch Road (\#308) and Vancouver Street/Sterling Ranch Road (\#309) are projected to operate at a satisfactory level of service (LOS C or better) during the peak hours as stop-sign-controlled intersections, based on the projected short-term and 2042 total traffic volumes

## Briargate Parkway Site Access Points (Intersection \#102-\#103)

The intersection of Boulder City Place/Briargate Parkway and the future K-8 school access to Briargate Parkway are projected to operate at LOS B or better for all movements as three-quarter movement (left-in/right-in/right-out only) stop-sign-controlled intersections, based on the projected short-term and 2042 total traffic volumes.

## SIGNAL WARRANT THRESHOLD ANALYSIS - AM AND PM PEAK HOURS

The intersections of Marksheffel/Vollmer and Marksheffel/Sterling Ranch were analyzed to determine if the thresholds for Four-Hour and/or Eight-Hour Vehicular-Volume Traffic-Signal Warrant thresholds would be reached or exceeded, based on the projected short-term peak-hour traffic volumes only. In order for an Eight-Hour Vehicular Volume Traffic Signal Warrant to be satisfied, the volume threshold would need to be met for six additional hours of the day and in order for a Four-Hour Vehicular Volume Traffic Signal Warrant to be satisfied, the volume threshold would need to be met for two additional hours of the day. For example, the four-hour warrant would be satisfied with the volume thresholds met for one hour in the morning, two hours (instead of the one-hour peak) during the afternoon peak period, and an hour during the mid-afternoon.

This "cursory"/planning-level analysis has been provided at the Preliminary Plan level to identify intersections which may need to be signalized in the short-term future. Detailed analysis of all applicable signal warrants should be evaluated with Filing submitted. The satisfaction of warrants does not indicate that a signal must be installed. The decision to require a signal to be installed rests with the County.

Table 3 shows the results of the analysis for the intersection of Marksheffel/Vollmer and Table 4 shows the results of the analysis for the intersection of Marksheffel/Sterling Ranch. As shown in Tables 3 and 4, the projected short-term morning and afternoon peak-hour traffic volumes at both intersections are projected to meet the thresholds for both Four-Hour and Eight-Hour Vehicular Volume Traffic Signal Warrants. This analysis indicates that traffic signal warrant(s) may be met at both of these intersections prior to buildout of SRE Phase 1 Preliminary Plan. Detailed analysis should be provided with each future filing within the Preliminary Plan. Escrow towards these improvements may also need to be provided with each filing.

## ROADWAY FUNCTIONAL CLASSIFICATIONS AND LANEAGE

Figure 16 shows the recommended functional classifications and number of through lanes for the streets in the study area.

## ARTERIAL CORRIDOR SIGNAL-PROGRESSION ANALYSIS

No additional full-movement intersections to an arterial corridor with the potential to become signalized are shown on this preliminary plan. Therefore, an arterial signal-progression analysis has not been included.

## DEVIATION REQUEST

A deviation request for the proposed three-quarter-movement access Boulder City Drive to Briargate Parkway has been prepared by JR Engineering and is included with this submittal.

## AREA MTCP 2040 ROADWAY IMPROVEMENT PROJECTS

The El Paso County 2016 Major Transportation Corridors Plan Update identified the following 2040 roadway improvement projects within the study area:

- C13: Vollmer Road from Marksheffel Road to Stapleton Drive as a Rural 4-Lane Minor Arterial;
- N5: Stapleton Drive [Briargate Parkway] from Towner Road to Black Forest Road as a 4-Lane Urban Principal Arterial;
- N12: Marksheffel Road from Woodman Road to Research Parkway as a 4-Lane Urban Principal Arterial; and
- M11: Vollmer Road Bicycle \& Primary Regional Trail from Marksheffel Road to Shoup Road.


## CONCLUSIONS AND RECOMMENDATIONS

## Trip Generation

- The residential portion of the Sterling Ranch East Phase 1 Preliminary Plan is projected to generate about 7,176 new external 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 19 vehicles would enter and 394 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 451 vehicles would enter and 265 vehicles would exit the site.
- The future school sites within Sterling Ranch East Phase 1 Preliminary Plan are projected to generate about 3,774 new external 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

660 vehicles would enter and 563 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 124 vehicles would enter and 143 vehicles would exit the site. As shown in the October 22, 2022, and subsequent Master TIS reports, about 60 percent of these trips are projected to be internal to the Sterling Ranch Sketch Plan area.

## Level of Service

- 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. The intersection currently has one-lane approaches in all directions. Based on existing traffic volumes shown in Figure 5 and the criteria contained in the El Paso County Engineering Criteria Manual (ECM), multiple auxiliary turn lanes would be required to meet the ECM standard. LSC recommends this intersection be reconstructed as a modern one-lane roundabout. As a modern roundabout, it is projected to operate at LOS C or better for all approaches during the peak hours based on the projected short-term and 2042 total traffic volumes.
- The intersections of Briargate/Vollmer and Briargate/Sterling Ranch are projected to operate at a satisfactory level of service as stop-sign-controlled intersections in the short-term future. By 2042, these intersections will likely need to be converted to traffic-signal control. As signalized intersections, all movements are projected to operate at LOS D or better during the peak hours based on the projected 2042 total traffic volumes.
- Some of the movements at the intersections of Marksheffel/Vollmer and Marksheffel/Sterling Ranch Road are projected to operate at LOS E or LOS F during the peak hours if they remain stop-sign controlled in the short-term future. Once signalized, all movements at these intersections are projected to operate at LOS D or better, based on the projected short-term and 2042 total traffic volum $\epsilon$ Main text states
- All of the site-access points to Sterling Ranch Road excintersections will operate at erling Ranch/Oak Park Place are projected to operate at a sati $\mathrm{LOS} \mathrm{C} \mathrm{or} \mathrm{better} .\mathrm{Please} \overrightarrow{\text { OS D }}$ or better) during the peak hours as stop-sign-controlleu revise to match projected short-term and 2042 total traffic volumes.
- The intersection of Oak Park Place/Sterling Ranch Road is projected to operate at LOS B or better for all movements as a stop-sign-controlled intersection, based on the projected short-term total traffic volumes shown in Figure 14b and the lane geometry shown in Figure 14c. By 2042, it was assumed the future K-8 School planned for the parcel southwest of Briargate/Sterling Ranch would be constructed and that an exit-only access would be constructed aligning with the Oak Park/Sterling Ranch intersection. Based on the 2042 total traffic volumes shown in Figure 15b and the lane geometry shown in Figure 15c, the eastbound and westbound left-turn movements are projected to operate at LOS E during the morning peak hour and LOS C during the afternoon peak hour. Alternate traffic control may be needed to achieve a satisfactory


Figure 2
LEGEND
Site Plan

4: Vollmer Rd \& Briargate Pkwy



Splits and Phases: 5: Sterling Ranch Rd \& Briargate Pkwy


4: Vollmer Rd \& Briargate Pkwy

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