

LSC RESPONSES TO EPC TIS REDLINE COMMENTS



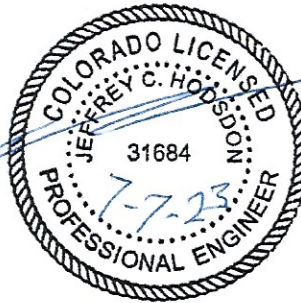
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Davis Ranch Subdivision Master Traffic Impact Study (LSC #S224640) July 7, 2023

Add PCD File No. SKP232 ¹

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.

A handwritten signature in blue ink, appearing to be 'M. A. D.', written over a horizontal line.


7-12-23
Date

LSC RESPONSES TO EPC TIS REDLINE COMMENTS

Page: 1

 Number: 1 Author: Daniel Torres Subject: Text Box Date: 9/18/2023 1:46:31 PM

[Add PCD File No. SKP232](#)

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:49 AM
LSC Response: Added as requested.

note shown on the sketch plan.
Please coordinate with the planning consultant so that the sketch plan and TIS are consistent

2

Please revise the traffic analysis as it was determined that no access would be allowed along Stapleton as 1/2 mile spacing is not met and access proposed is not identified on the Stapleton corridor plan.

1

planned for the site. For purposes of estimating trip generation, this report assumes 52,500 square feet of building square footage for the commercial uses.

Access and Circulation

The Sketch Plan shows the following proposed public roadway intersection spacings:

- Full-movement intersection/access on Stapleton Road **one-quarter mile** north of Judge Orr
- Full-movement access on Judge Orr Road 300feet west of Elbert Road (**Note: LSC recommends this access be shifted to a location about 1,000 feet west of Elbert Road** – depending on acceptable sight distance and/or other factors).
- Full-movement access on Elbert Road a quarter mile north of Judge Orr Road
- Full-movement access on Elbert Road a half mile north of Judge Orr Road

Figure 2 contains the proposed Sketch Plan showing the proposed general land uses, on-site roadway network, and proposed access points. Access points may be private street/driveway connections or they may be developed as public streets. This will be determined later, but this report treats them as potential public street connections.

Please state that site distance analysis will be provided when access layout is finalized

3

SIGHT DISTANCE

Intersection sight distance at all proposed public road/site access intersection locations on Judge Orr Road, Stapleton Road, and Elbert Road shown in the site plan must meet intersection sight distance requirements in *ECM* Table 2-21. Intersections not meeting sight distance may need to be shifted or otherwise mitigated for sight distance. Lines of sight for all public road intersections/access points will need to be kept clear of any sight distance obstructions, including landscaping, signage, etc.

ROAD AND TRAFFIC CONDITIONS AND MTCP CLASSIFICATION

Figure 1 shows the roads adjacent to and in the vicinity of the site. Adjacent roads serving the site are identified below followed by a brief description of each:

US Highway 24 (US Hwy 24) is a state highway extending locally from the City of Colorado Springs to Peyton in a northeasterly direction and then continuing east. US Hwy 24 is planned to be widened to four lanes through the Falcon area and is classified as an E-X – Expressway by the Colorado Department of Transportation (CDOT) and a 4-lane Principal Arterial on the *El Paso County Major Transportation Corridors Plan (MTCP)*. The posted speed limit on US Hwy 24 at Stapleton Road is 65 miles per hour (mph). Auxiliary left-turn lanes currently exist on the northbound and southbound approaches at the signalized intersections of Stapleton/US Hwy 24 and US Hwy 24/Judge Orr.

Judge Orr Road is a two-lane roadway that extends east from Eastonville Road across most of El Paso County. It is shown on the *El Paso County 2040 Major Transportation Corridors Plan* and

Hwy 24/Stapleton is not signalized.
Revise accordingly

4

Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 9:58:04 AM

Please revise the traffic analysis as it was determined that no access would be allowed along Stapleton as 1/2 mile spacing is not met and access proposed is not identified on the Stapleton corridor plan.

Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:42 AM

LSC Response: The access on the west side of Stapleton has been removed. The access on the east side remains, as no frontage on Judge Orr is available and a connection for access to the north does not exist. The volume projected to utilize the access would be low and it is unlikely that a signal warrant would be met. In the future, this access could potentially be restricted or closed if/when additional street connections become available through adjacent properties.

Number: 2 Author: Daniel Torres Subject: Callout Date: 9/19/2023 9:57:58 AM

note shown on the sketch plan. Please coordinate with the planning consultant so that the sketch plan and TIS are consistent

Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:36 AM

LSC Response: The TIS now matches the sketch plan.

Number: 3 Author: Daniel Torres Subject: Callout Date: 9/18/2023 2:25:56 PM

Please state that site distance analysis will be provided when access layout is finalized

Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:27 AM

LSC Response: Added as requested.

Number: 4 Author: Daniel Torres Subject: Callout Date: 9/19/2023 9:58:20 AM

Hwy 24/Stapleton is not signalized. Revise accordingly

Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:21 AM

LSC Response: Revised.

Bill Guman
Davis Ranch Subdivision

The section south of Hwy 24 which is labeled as Stapleton is a 4-lane Principal arterial in the 2040 plan. Revise accordingly the description of Curtis and/or Stapleton Rd accordingly.

July 7, 2023
Traffic Impact Study

the *Preserved Corridor Network Plan* as a four-lane Minor Arterial adjacent to the site (and west of Curtis Road). Posted speed limits adjacent to the site range from 45 to 55 mph. West of Curtis Road, the speed limit is 45 mph, while it generally increases to 55 mph east of Curtis Road. The intersection of US Hwy 24/Judge Orr is currently signalized. Due to the oblique angle of this intersection, the eastbound and westbound approaches are split-phased. The *US 24 Access Control Plan/PEL Study* shows future plans for realignment of Judge Orr at US Hwy 24 to improve the intersection and provide an intersection angle closer to 90 degrees.

Curtis Road is a two-lane roadway that extends south from the intersection of US Hwy 24/Stapleton Road intersection to Drennan Road. It is shown as a two-lane, rural Principal Arterial on El Paso County's *2040 Major Transportation Corridors Plan* and a four-lane Principal Arterial on the *Preserved Corridor Network Plan*. Adjacent to the site, the posted speed limit is 45 mph. Both intersections of Curtis Road/Judge Orr Road and Curtis Road/Falcon Highway are two-way, stop-sign controlled. The newer section north of Judge Orr (adjacent to this site) was constructed to current *ECM* standards with paved shoulders, etc. Generally, Curtis Road is an "unimproved," two-lane paved road between Judge Orr and Falcon Highway. However, upgrades are planned as part of the Saddlehorn Development.

Stapleton Road is shown as an Urban four-lane Principal Arterial on the El Paso County *Major Transportation Corridors Plan (MTCP)* and El Paso County *Corridor Preservation Plan (CPP)*. Stapleton Road extends east from Towner Drive to US Hwy 24. Stapleton continues southeast then south as Curtis Road. It is planned to be ultimately extended west to connect with the Briargate Parkway extension. Stapleton Road currently is a half-section of a four-lane Principal Arterial (one through lane in each direction) between Meridian Road and US Hwy 24.


Elbert Road is a two-lane roadway that extends north from Judge Orr Road in El Paso County to State Highway 86 in Elbert Road. Shown on the *El Paso County 2040 Major Transportation Corridors Plan* as a four-lane Minor Arterial, the posted speed on Elbert Road is 55 mph. Elbert Road is paved without shoulders in the vicinity of the site (paved, unimproved roadway).

Existing Traffic Volumes

Vehicular turning-movement counts were conducted for the following dates and times at the following intersections. Raw count data is attached:

Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 5:23:10 PM

The section south of Hwy 24 which is labeled as Stapleton is a 4-lane Principal arterial in the 2040 plan. Revise accordingly the description of Curtis and/or Stapleton Rd accordingly.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:15 AM

LSC response: Updated to reflect roadway classifications shown in the newly-adopted 2045 MTCP rather than the previous 2040 MTCP.

- Judge Orr Road/Elbert Road
 - Wednesday, January 11, 2023 from 6:30 – 8:30 a.m.
 - Wednesday, January 11, 2023 from 4:00 – 6:00 p.m.
- Judge Orr Road/Curtis Road
 - Thursday, April 21, 2022 from 6:30 – 8:30 a.m.
 - Thursday, April 21, 2022 from 4:00 – 6:00 p.m.
- US Hwy 24/Elbert Road
 - Tuesday, January 17, 2023 from 6:30 – 8:30 a.m.
 - Tuesday, January 17, 2023 from 4:00 – 6:00 p.m.
- US Hwy 24/Judge Orr Road
 - Tuesday, May 10, 2022 from 6:30 – 8:30 a.m.
 - Tuesday, May 10, 2022 from 4:00 – 6:00 p.m.
- US Hwy 24/Stapleton Road
 - Tuesday, January 10, 2023 from 6:30 – 8:30 a.m.
 - Tuesday, January 10, 2023 from 4:00 – 6:00 p.m.

Provide up to date counts as these are greater than a year old. Refer to ECM App. B.3.1.A

1

PEDESTRIAN AND BICYCLE FACILITIES

Judge Orr Road, Stapleton Road, and Elbert Road do not currently have sidewalks. Stapleton Road between Judge Orr and US Highway 24 has paved outside shoulders, which accommodate bicycles. Proposed subdivision roads are likely to be primarily Rural Local roadways and, per *ECM* criteria, would not require sidewalks.

TRIP GENERATION


Estimates of the vehicle trips projected to be generated by the proposed Davis Subdivision residential development have been made using the nationally published trip-generation rates from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Corresponding trip-generation rates from ITE Land Use category “210 – Single-Family Detached Housing” have been used to develop trip-generation estimates for the proposed 92-dwelling units. ITE Land Use category “821 – Strip Retail Plaza without a Supermarket (40-150 KSF)” was used to estimate potential trip generation for the approximately 8 acres of commercial space on the property (on two separate parcels). LSC has assumed that a 15-percent floor-area-ratio for the 8 total acres of commercial space.

Table 1 below presents a summary of the estimated site trip generation. A detailed trip-generation estimate for the site, including ITE rates land uses, is presented in Table 4 (attached). The proposed sketch plan is attached for reference.

The sketch plan land uses are projected to generate about 4,479 total vehicle trips on the average weekday during a 24-hour period, with approximately half entering and half exiting the site. During the morning peak hour, approximately 74 entering vehicles and 86 exiting vehicles are estimated to be generated. Approximately 191 entering and 173 exiting vehicles are estimated to be generated by the site during the afternoon peak hour.

Number: 1 Author: Daniel Torres Subject: Callout Date: 9/18/2023 2:47:43 PM

[Provide up to date counts as these are greater than a year old. Refer to ECM App. B.3.1.A](#)

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:08 AM

LSC Response: These counts have since been updated. The new count dates are reflected in the updated TIS report.

The attached **LOS Tables** 1-12 show the LOS values results for the weekday morning and afternoon peak hours for the proposed site-access intersections and off-site intersections in the study area. All LOS calculations for long-term scenarios were based upon the recommended lane geometries and traffic controls outlined in the Synchro reports.

Stapleton Road/Proposed Northwest Site Access

Please clarify that this is proposed/analyzed as a signalized intersection as shown in the figures provided.

All individual turning movements and approaches are projected to operate at LOS C or better through the long term with the addition of site-generated traffic.

Judge Orr Road/Proposed Southeast Site Access

All individual turning movements and approaches are projected to operate at LOS B or better through the long term with the addition of site-generated traffic.

Elbert Road/Proposed East Site Access

Please update the LOS analysis accordingly as access to Stapleton would not be allowed.

All single-lane approaches are projected to operate at LOS A through the long term with the addition of site-generated traffic.

Elbert Road/Proposed Northeast Site Access

All single-lane approaches are projected to operate at LOS A through the long term with the addition of site-generated traffic.

Judge Orr Road/Curtis Road

Short Term


All individual turning movements are projected to operate at LOS C or better during the short term with the addition of site-generated traffic. Short-term analysis assumes two-way stop-sign control (TWSC) at Judge Orr/Curtis.

Long Term

Assuming the intersection of Judge Orr/Curtis is converted from TWSC to a two-lane roundabout in the future, all individual turning movements would operate at LOS B or better during both peak hours of the long-term buildout scenario. This intersection improvement was previously recommended in the *Saddlehorn Ranch* traffic study. Additionally, eastbound and westbound approaches on Judge Orr Road and the southbound approach on Curtis Road are assumed to be two through lanes in each direction (per the 2040 *MTCP*).

 Number: 1 Author: Daniel Torres Subject: Callout Date: 9/18/2023 4:20:04 PM


Please clarify that this is proposed/analyzed as a signalized intersection as shown in the figures provided.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:39:02 AM

LSC response: This proposed access is projected to operate at LOS C or better with stop-sign control, so a signal will not be required at this intersection.

 Number: 2 Author: Daniel Torres Subject: Text Box Date: 9/19/2023 10:16:44 AM

Please update the LOS analysis accordingly as access to Stapleton would not be allowed.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:56 AM

LSC Response: The LOS analysis in the report has been revised to reflect that the access on the west side of Stapleton has been removed. The access on the east side remains, as no frontage on Judge Orr is available and a connection for access to the north does not exist. The volume projected to utilize the access would be low and it is unlikely that a signal warrant would be met. In the future, this access could potentially be restricted or closed if/when additional street connections become available through adjacent properties.

Please indicate what this developments possible responsibility is for upgrading the intersection to satisfactory conditions. Is it providing escrow? or does this development trigger the signal warrants? please address.

US Highway 24/Stapleton Road

Short-Term

Currently, the intersection of US Hwy 24/Stapleton is two-way stop-sign-controlled (TWSC). The following turning movements currently operate at LOS E or worse, with or without the addition of site-generated traffic: northwest-bound left, northwest-bound through, southeast-bound left, and southeast-bound through.

Once signalized, all individual turning movements and the intersection overall are projected to operate at and are projected to operate at LOS C or better during both short-term peak hours, with or without the addition of site-generated traffic. CDOT has indicated that this intersection is on the list of intersections programmed for signalization.

Long-Term

Based on the long-term scenario analyzed in this report, dual left-turn lanes are projected to be constructed to all approaches at the intersection of US Hwy 24/Stapleton Road. Additionally, all approaches on US Hwy 24 and Stapleton Road would be improved to two through lanes in each direction. Assuming the planned future traffic-signal control, the northeast-left and southwest-left turn lanes are projected to operate at LOS E during the AM and PM peak hours.

All other individual turning movements and the intersection overall are projected to operate at LOS D or better during both long-term peak hours, with or without the addition of site-generated traffic. Please refer to the attached Synchro sheets for anticipated/assumed future lane geometry and LOS at this intersection.

US Highway 24/Judge Orr Road

Short Term


The intersection of US Hwy 24/Judge Orr is currently signalized. The *US 24 Access Control Plan* shows this intersection realigned to one of two alternate alignments that would provide an intersection angle closer to 90 degrees. All movements at this intersection except for the westbound-through movement are currently operating at LOS D or better during both peak hours.

what is the LOS for this movement

Short-term analysis assumes the proposed realignment has not yet been constructed, nor does it assume that the future southbound right-turn deceleration, a southbound right-turn acceleration, and an eastbound right-turn lane would be constructed in the short term. These turn lanes are shown at the intersection of US Hwy 24/Judge Orr in CDOT's *US 24 Planning & Environmental Linkages (PEL) Study*.


Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 10:01:37 AM

Please indicate what this developments possible responsibility is for upgrading the intersection to satisfactory conditions. Is it providing escrow? or does this development trigger the signal warrants? please address.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:49 AM
LSC Response: This has been addressed in the updated TIS report.

Number: 2 Author: Daniel Torres Subject: Callout Date: 9/19/2023 10:02:13 AM

what is the LOS for this movement

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:44 AM
LSC Response: This has been added to the updated TIS report.

Long-Term

By 2043, it was assumed US Hwy 24 would be with projected 2043 background geometry shown in the Synchro reports, this intersection is projected to operate at an overall LOS C during the peak hours. Some minor movements are projected to operate at LOS E during the peak hours simply because of the likelihood of arrival at the traffic signal at the beginning of the red phase at an intersection with many phases and a long cycle length. These movements would not be considered “failing” since the volume-to-capacity ratios would be less than 1.0. The justification is that to progress through traffic along an arterial corridor, the traffic signal offsets and left-turn and side street phase times have been adjusted to favor the through traffic band, which can often result in higher delay for the left-turn movements even though there is sufficient capacity for them.

Highway 24 is an expressway. Staff assumption is that the minor movements indicated are along Judge Orr as opposed to hwy 24. Please clarify.

US Highway 24/Elbert Road

Short Term

Please also provide long term analysis.

All individual turning movements are projected to operate at LOS D or better during the short-term with the addition of site-generated traffic. Short-term analysis assumes two-way stop-sign control (TWSC) at US Hwy 24/Elbert Road.

Judge Orr Road/Elbert Road

All single-lane approaches are projected to operate at LOS A through the long term with the addition of site-generated traffic.

ROADWAY IMPROVEMENTS

Auxiliary Turn-Lane Thresholds

Section 2.3.7.D of the *ECM* lists ingress/egress volume thresholds in which exclusive right- or left-turn lanes would be required, by classification:

- Principal Arterial
 - Left-turn deceleration lane – 10 vehicles per hour (vph) or greater
 - Right-turn deceleration lane – 25 vph or greater
 - Right-turn acceleration lane – 50 vph or greater (if speed limit greater than 40 mph)
- Minor Arterial
 - Left-turn deceleration lane – 25 vph or greater
 - Right-turn deceleration lane – 50 vph or greater
 - Right-turn acceleration lane – not generally required

☰ Number: 1 Author: Daniel Torres Subject: Callout Date: 7/29/2024 7:02:41 PM

Highway 24 is an expressway. Staff assumption is that the minor movements indicated are along Judge Orr as opposed to hwy 24. Please clarify.

👉 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:36 AM

LSC Response: This paragraph has been revised for clarity. The term "an arterial corridor" was intended as a more generic term for a major thoroughfare with traffic-signal control at intersections rather than a specific CDOT or County roadway classification. In this case, Judge Orr Road is considered the "side street."

☰ Number: 2 Author: Daniel Torres Subject: Callout Date: 9/19/2023 10:08:04 AM

Please also provide long term analysis.

👉 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:28 AM

LSC Response: Included in the updated TIS report.

Major roadways in the study area have the following 2040 *ECM* roadway classifications:

- Stapleton Road – Principal Arterial
- Judge Orr Road – Minor Arterial
- Elbert Road – Minor Arterial

All proposed auxiliary turn lanes would be required to meet design criteria outlined in Section 2.3.7.E of the *ECM*.

Stapleton Road/Proposed Northwest Site Access

Based on projected left-turn and right-turn peak-hour turning volumes, the following auxiliary turn lanes would be required at the proposed northwest site access on Stapleton Road:

- Northbound-left-turn deceleration lane
- Southbound-left-turn deceleration lane
- Southbound-right-turn deceleration lane

The following auxiliary turn lanes would **not** be required at the proposed northwest site access on Stapleton Road:

- Northbound-right-turn deceleration lane
- Westbound-to-northbound-right-turn acceleration lane
- Eastbound-to-southbound-right-turn acceleration lane

1
revise accordingly for the intersection in question

Judge Orr Road/Proposed Southeast Site Access

Based on projected left-turn and right-turn peak-hour turning volumes, the following auxiliary turn lane would be required at the proposed southeast site access on Judge Orr Road:

- Eastbound-left-turn deceleration lane

The following auxiliary turn lanes would **not** be required at the proposed **2** northwest site access on **3** Stapleton Road:

- Westbound-right-turn deceleration lane
- Southbound-to-westbound-right-turn acceleration lane

4
indicate whether a southbound right turn lane or left turn lane along the proposed collector roadway will be required.

Elbert Road/Proposed East Site Access

Based on projected northbound-left and southbound-right peak-hour turning volumes, no auxiliary turn lanes would be required at the proposed east site access on Elbert Road.

Elbert Road/Proposed Northeast Site Access

Based on projected northbound-left and southbound-right peak-hour turning volumes, no auxiliary turn lanes would be required at the proposed northeast site access on Elbert Road.

☰ Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 10:20:29 AM

[revise accordingly for the intersection in question](#)

↶ Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:20 AM

LSC Response: The west-side access to Stapleton Road has been removed from the Sketch Plan and TIS.

☰ Number: 2 Author: Daniel Torres Subject: Highlight Date: 9/19/2023 10:20:38 AM

northwest

↶ Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:11 AM

LSC response: This has been addressed in the updated report.

☰ Number: 3 Author: Daniel Torres Subject: Highlight Date: 9/19/2023 10:19:48 AM

tapleton Roa

↶ Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:06 AM

LSC response: This has been addressed in the updated report.

☰ Number: 4 Author: Daniel Torres Subject: Callout Date: 9/19/2023 10:22:21 AM

[indicate whether a southbound right turn lane or left turn lane along the proposed collector roadway will be required.](#)

↶ Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:38:00 AM

LSC Response: This access has been removed from the TIS to match the Sketch Plan.

Bill Guman
 Davis Ranch Subdivision

provide auxiliary lane analysis for Elbert Rd/Judge Orr and for Stapleton/Judge Orr. For Stapleton/Judge Orr, indicate whether any additional turn lanes or changes to the existing turn lanes are necessary.

US Highway 24/Judge Orr Road

Auxiliary turn lanes are planned to be added at this intersection as part of El Paso County intersection improvement project C14. This roadway improvement project has been identified as being needed by the year 2040 per Map 13 and Table 4 of El Paso County’s 2016 *MTCP*:

- C14 – Judge Orr Road from Eastonville Road to Peyton Highway (\$38,248,000)
- Existing conditions – 2-lane Rural Minor Arterial
- Future conditions – 4-lane Rural Minor Arterial

As such, no modifications would be required by the applicant at the intersection of US Hwy 24/Judge Orr as a result of additional site-generated traffic from this development.

Intersection Configuration and Traffic Control

All proposed site-access points would be two-way stop sign-controlled intersections.

ROADWAY CLASSIFICATIONS

Generally, roadways within the sketch plan should be classified as Rural Local as projected ADT volumes are below 750 vehicles per day. These recommended classifications can be revisited at the preliminary plan stage when commercial land uses are more defined relative to trip generation. Also, more information may be known at that time about potential development on adjacent parcels. Based on estimated daily traffic volumes and other factors, the following internal roadway classifications are recommended by LSC (as shown in Table 3 and graphically shown in Figure 3):

Table 3: Roadway Classifications at Proposed Site Access Points


Major Road	Access Location	Side of Road	Projected ADT	Recommended Classification
Stapleton Rd	Northwest	West	1600	Rural Major Collector
Stapleton Rd	Northwest	East	575	Rural Minor Collector
Judge Orr Rd	Southeast	North	2000	Rural Major Collector*
Elbert Rd	East	West	300	Rural Minor Collector
Elbert Rd	Northeast	West	150	Rural Local
Other Internal Roads			Varies	Rural Local

* Along the commercial site; Rural Minor Collector north to east/west street connecting to Elbert Road.

Date: 7/7/2023

 Number: 1 Author: Daniel Torres Subject: Text Box Date: 9/19/2023 10:58:30 AM

provide auxiliary lane analysis for Elbert Rd/Judge Orr and for Stapleton/Judge Orr. For Stapleton/Judge Orr, indicate whether any additional turn lanes or changes to the existing turn lanes are necessary.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:37:50 AM

LSC Response: This comment has been addressed in the updated TIS as requested.

The following is a list of known and planned multi-modal and pedestrian accommodations in the vicinity of the site:

- A park-and-ride facility has been constructed near Meridian Road and US Highway 24.
- The Rock Island Regional Trail passes near the site to the north.
- Many of the area County roads have been or will be upgraded to provide paved shoulders for cyclists. Stapleton is shown as a future “bike route.”
- The Highway 24 PEL study also includes multi-modal elements.

DEVIATIONS

Potentially-Required Deviations

The following are deviations that may be required based on this Sketch Plan.

- The proposed public-road intersection spacing along Curtis Road is less than one-half mile, which does **not** meet *ECM* criteria for intersection spacing along a Principal Arterial Roadway. As such, deviation request(s) would be required for this proposed site public road intersection location.
- The proposed public road intersection spacing along Judge Orr Road is less than one-quarter mile, which does **not** meet *ECM* criteria for intersection spacing along a Minor Arterial Roadway. As such, deviation request(s) would be required for this proposed site public road intersection location. LSC recommends this access/roadway connection to Judge Orr be shifted to a location about 1,000 feet west of Elbert Road (depending on acceptable sight distance and/or other factors).

Deviations will be submitted with the zoning or Preliminary Plan.

Approved Deviations (for Reference)

Judge Orr Road




Please also identify what this developments requirements are for the north side of Judge Orr Road along the property frontage. It may be provided in a separate section of the report as this section is identifying previous deviations. 1

As part of the Saddlehorn Ranch development, a deviation (by JR Engineering, dated September 4, 2020) was approved for modification to the standard *ECM* cross section of Judge Orr Road, which has a 2040 classification of Rural Four-Lane, Minor Arterial roadway (*ECM* Section 2.2.4 criteria). Although Judge Orr Road is shown as a four-lane Rural Minor Arterial in the 2040 *MTCP*, the *ECM* does not have a standard cross-section for this type of roadway functional classification. The deviation shows an interim four-lane Rural Minor Arterial cross-section with an additional eastbound 12-foot travel lane on the south side (Saddlehorn side).

Additional ROW would be required for completion of the full 4-lane section, but additional ROW is not available (not controlled by this development) on the north side of Judge Orr. Currently, Saddlehorn Ranch is dedicating an additional 40 feet of ROW to facilitate this in the future.

 Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 11:05:44 AM

Please also identify what this developments requirements are for the north side of Judge Orr Road along the property frontage. It may be provided in a separate section of the report as this section is identifying previous deviations.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:37:42 AM

LSC Response: This comment has been addressed in the updated TIS as requested.

1
Page 16
Master Traffic Impact Study
Identify whether any improvements such as additional shoulder width to Stapleton/Curtis Rd north of Judge Orr is required due to this developments impacts.

Curtis Road

As part of the Saddlehorn Ranch development, a deviation (by JR Engineering, dated September 28, 2020) was approved for modification to the standard *ECM* cross section of Curtis Road south of Judge Orr Road, a Rural Two-Lane, Principal Arterial roadway (*ECM* Section 2.2.4 criteria). The *ECM* requires that Rural Principal Arterial cross-sections consist of 12-foot travel lanes with 8-foot paved, outside shoulders. The approved deviation shows the modified interim cross section with a 2-foot paved, outside shoulder on the west side of the roadway instead of an 8-foot shoulder, 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 owners. The east side of the roadway will be constructed with an 8-foot outside shoulder.

CDOT PROCESS AND REQUIREMENTS

The following is for information only, as this is a sketch plan application. The following can be revisited at the next stage of the process.

- US Hwy 24/Stapleton is planned to be signalized. The CDOT has indicated for other area projects a requirement to escrow a fair share amount toward this future traffic signal.
- The “formula” for calculating the development responsibility has been based on the average AM & PM site-generated passenger cars directly impacting the 4-hour warrant, the development would be responsible an amount based on the number of site-generated new vehicles / 60 vehicles-to-warrant x ~\$700K/signal cost.
- **LSC 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 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.

2
Please identify that it is the applicants responsibility to go before the road impact fee advisory committee for any possible credits from the fee program.

FINDINGS AND CONCLUSIONS

- The site is projected to generate about 4,479 new driveway vehicle-trips on the average weekday.
- During the weekday morning peak hour of adjacent street traffic, 74 vehicles would enter the site while 86 vehicles would exit.
- During the weekday afternoon peak hour of adjacent street traffic, 191 vehicles would enter the site while 173 vehicles would exit.
- Projected levels of service would be LOS C or better at all proposed site access locations. Please refer to the “Level of Service” section above for detailed LOS results and discussion regarding all study-area intersections.

☰ Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 11:07:31 AM

Identify whether any improvements such as additional shoulder width to Stapleton/Curtis Rd north of Judge Orr is required due to this developments impacts.

👤 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:37:26 AM

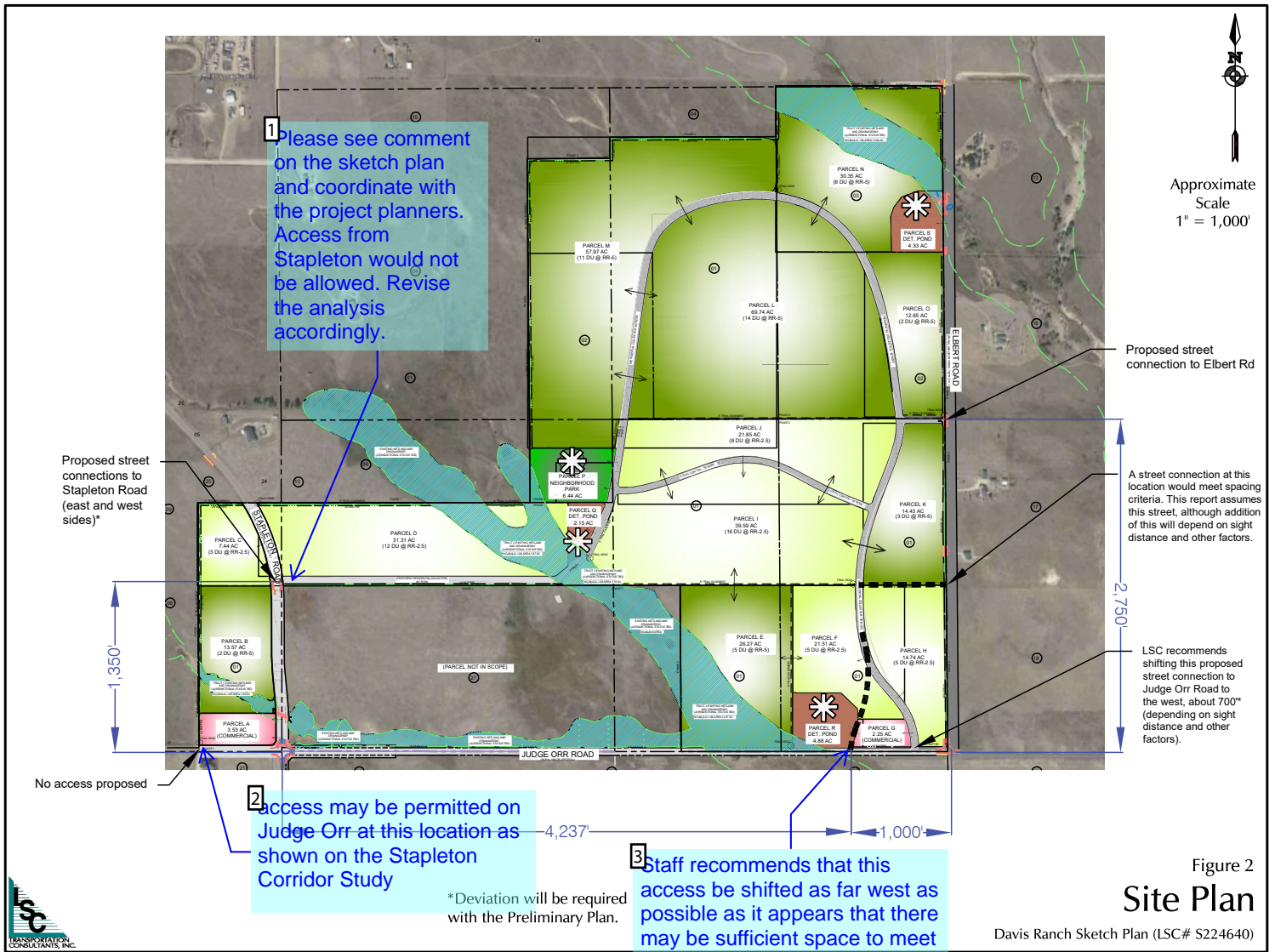
LSC Response: This comment has been addressed in the updated TIS as requested.

☰ Number: 2 Author: Daniel Torres Subject: Callout Date: 9/19/2023 11:11:22 AM

Please identify that it is the applicants responsibility to go before the road impact fee advisory committee for any possible credits from the fee program.

👤 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:37:17 AM

LSC Response: Added as requested.



☰ Number: 1 Author: Daniel Torres Subject: Callout Date: 9/19/2023 11:20:22 AM

Please see comment on the sketch plan and coordinate with the project planners. Access from Stapleton would not be allowed. Revise the analysis accordingly.

👉 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:37:02 AM

LSC Response: The west-side access/street connection has been removed. The east-side access has not been removed from the Sketch Plan and TIS as this access is necessary. Please refer to the narrative for justification.

☰ Number: 2 Author: Daniel Torres Subject: Callout Date: 9/19/2023 11:21:10 AM

access may be permitted on Judge Orr at this location as shown on the Stapleton Corridor Study

👉 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:37:10 AM

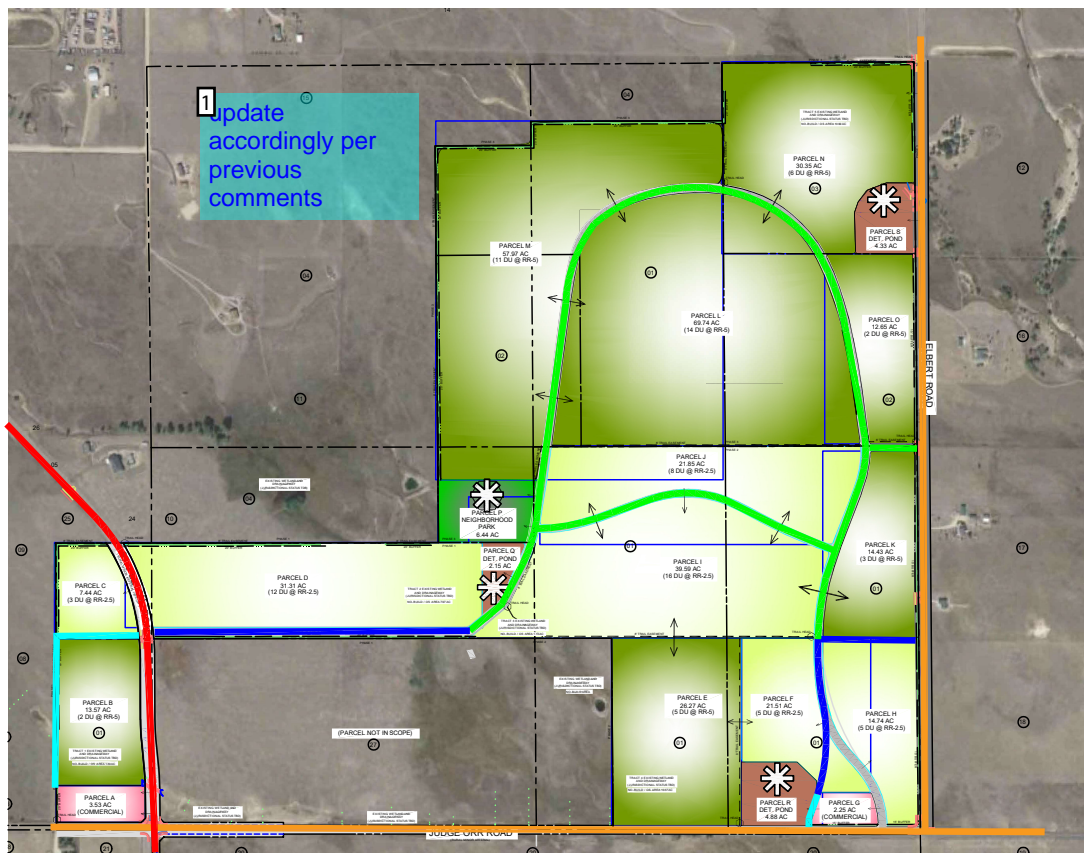
LSC Response: Comment noted. The updated Sketch Plan and TIS continue to show this access and the spacing to the Curtis/Judge Orr intersection to the east.

☰ Number: 3 Author: Daniel Torres Subject: Callout Date: 9/19/2023 5:22:33 PM

Staff recommends that this access be shifted as far west as possible as it appears that there may be sufficient space to meet criteria prior to encroaching onto the floodplain

👉 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:36:54 AM

LSC Response: The updated Sketch Plan and TIS show this access shifted west to 1,240 feet west of Elbert Road.



Approximate Scale
1" = 1,000'


- Rural Local
- Principal Arterial
- Rural Minor Collector
- Rural Major Collector
- Rural Minor Arterial

Figure 3
Roadway Classifications
Davis Ranch Sketch Plan (LSC# S224640)

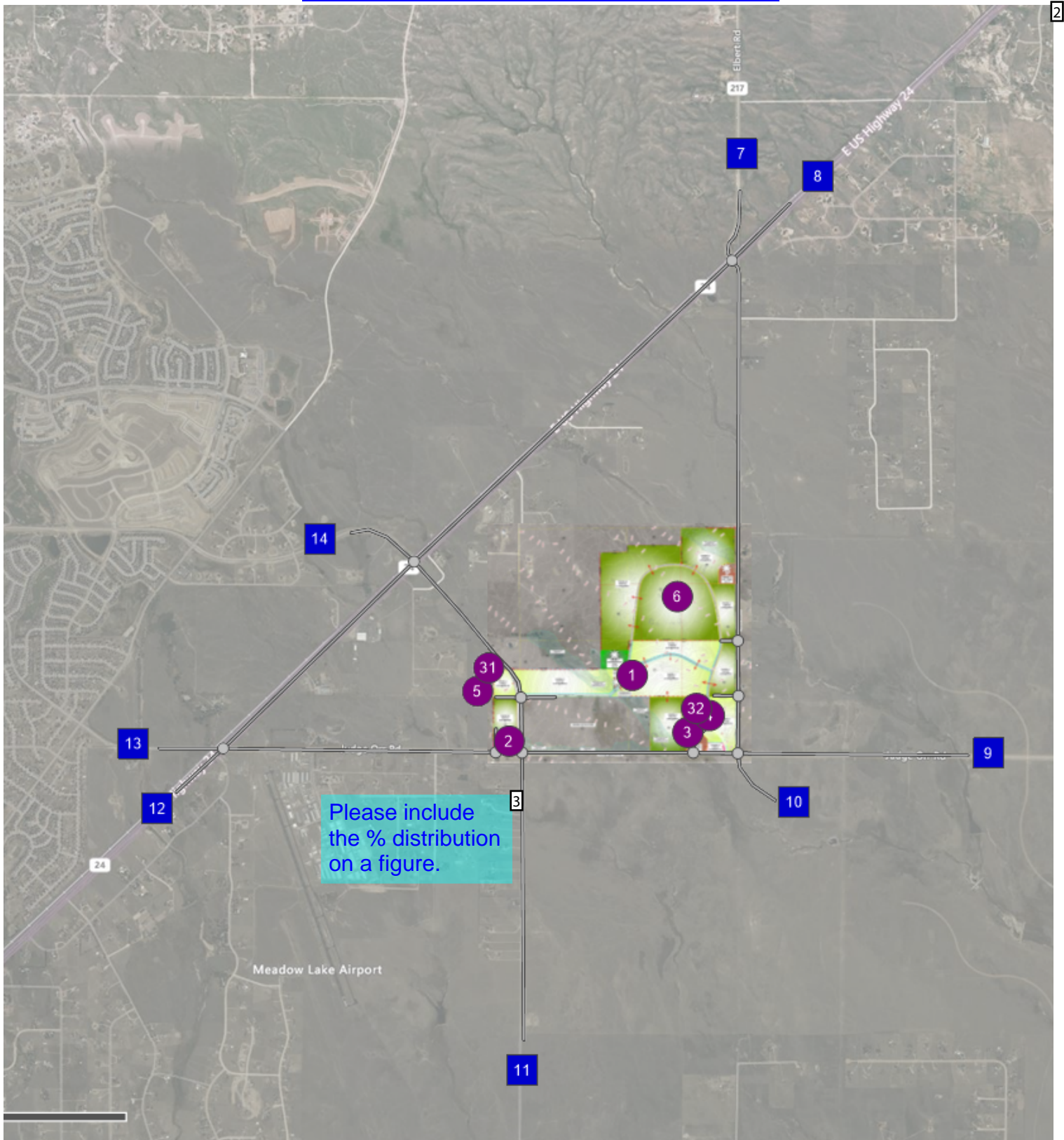


 Number: 1 Author: Daniel Torres Subject: Text Box Date: 9/19/2023 11:21:47 AM

[update accordingly per previous comments](#)

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:36:47 AM
LSC Response: Revised in the updated TIS report.

Vistro Traffic Model



☰ Number: 1 Author: jchodsdon Subject: Text Box Date: 7/7/2023 3:16:52 PM

Vistro Traffic Model

👤 Author: jchodsdon Subject: Sticky Note Date: 7/29/2024 6:50:43 PM

NOT A COMMENT - Just a label.

👤 Number: 2 Author: jchodsdon Subject: Stamp Date: 7/7/2023 3:15:58 PM

☰ Number: 3 Author: Daniel Torres Subject: Text Box Date: 9/19/2023 5:19:58 PM

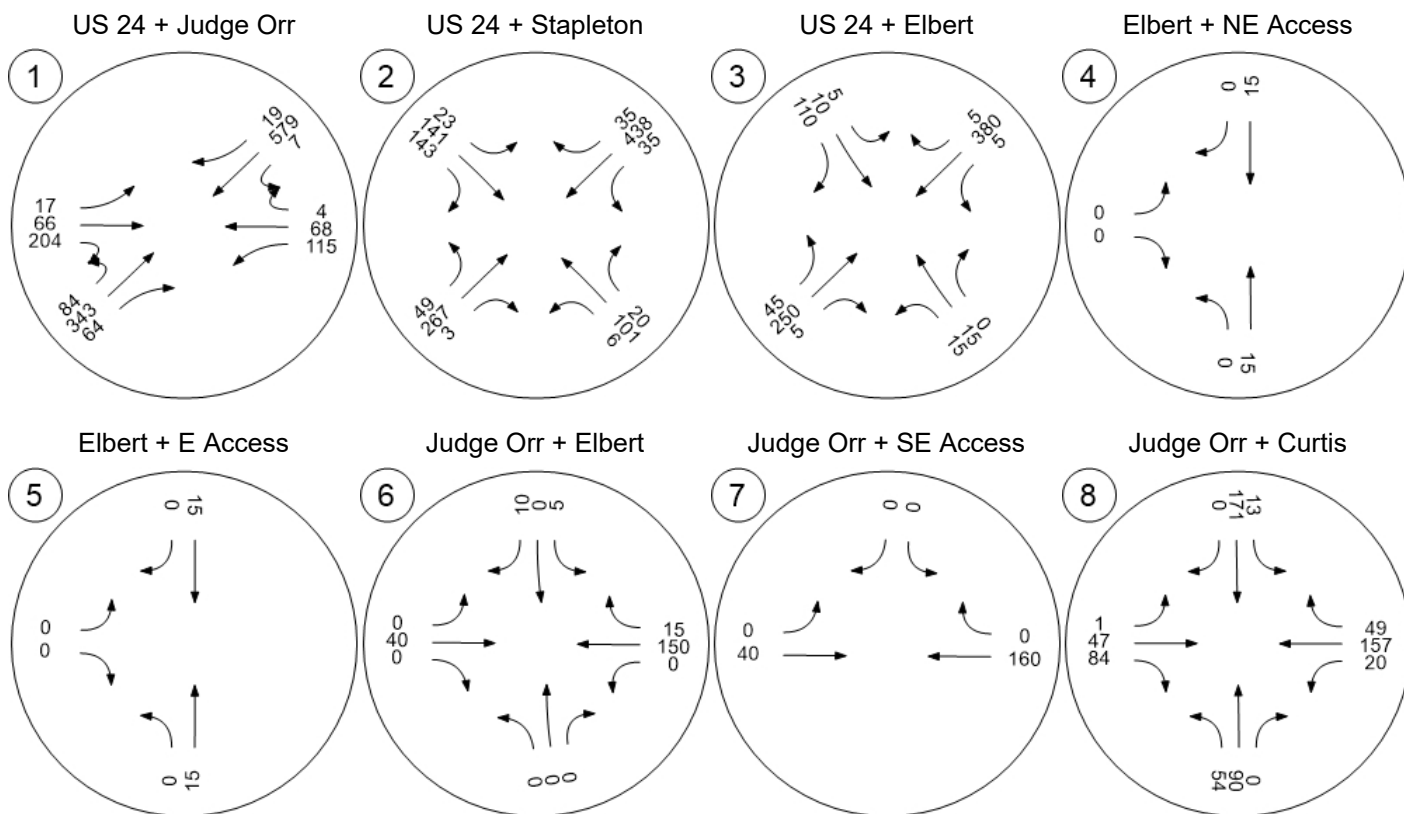
Please include the % distribution on a figure.

👤 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:36:35 AM

LSC Response: Included as requested.


Please clarify that the base volume is existing counts and future total volume is existing (including short term background) + site trips. This can be done in the narrative.

Traffic Volume - Base Volume



Number: 1 Author: Daniel Torres Subject: Text Box Date: 9/19/2023 11:29:16 AM

Please clarify that the base volume is existing counts and future total volume is existing (including short term background) + site trips. This can be done in the narrative.

 Author: jchodsdon Subject: Sticky Note Date: 8/12/2024 11:36:24 AM

LSC Response: Figures have been created for this updated TIS which clarify, along with the revised narrative, all the scenarios and associated volumes and levels of service.