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Pinon Mesa Rock Creek
Master Traffic Impact Study
PCD File No. P209
(LSC #184380)
March 2, 2021

LSC Responses to EPC TIS Redline comments on this document

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.

COLORADO LICENSED
JEFFREY C. HODSDON
31684
3-2-21
PROFESSIONAL ENGINEER

Developer's Statement

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

Kelly Nelson

March 2, 2021
Date

LSC RESPONSES TO EPC TIS REDLINE Comments 4/30/2021

Page: 1

Number: 1 Author: jchodsdon Subject: Text Box Date: 5/2/2021 19:52:26

LSC Responses to EPC TIS Redline comments on this document

Table 3: 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	≤ 10.0
B	10.1 - 20.0	10.1 - 15.0
C	20.1 - 35.0	15.1 - 25.0
D	35.1 - 55.0	25.1 - 35.0
E	55.1 - 80.0	35.1 - 50.0
F	≥ 80.1	≥ 50.1

[1] For unsignalized intersections, if v/c is > 1.00, then LOS is LOS F, regardless of the projected average control delay per vehicle

The following intersections have been analyzed to determine the projected levels of service for the key intersection turning movements.

- State Highway 115/Pawnee Road
- State Highway 115/Cherokee Drive

A summary of all short-term and 2040 traffic scenario levels of service during the weekday morning and evening peak hours are shown in the attached figures. Detailed Synchro reports are attached.

SH 115/Cherokee Drive

All approaches are projected to operate at LOS B or better during both peak hours through the 20-year horizon, with or without the addition of site-generated traffic.

1 This intersection is repeated. Please revise accordingly.

SH 115/Pawnee Road

All approaches are projected to operate at LOS B or better during both peak hours through the 20-year horizon, with or without the addition of site-generated traffic.

SH 115/Cherokee Drive

All approaches at the intersection of SH 115/Cherokee Drive are projected to operate at LOS B or better during both peak hours through the 20-year horizon, with or without the addition of site-generated traffic.

TRAFFIC SIGNAL WARRANT ANALYSIS

The intersection of SH 115/Pawnee Road has been analyzed to evaluate the potential for meeting a warrant(s) for a traffic-control signal in the future. The combination of major street approach

Page: 8

Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 11:29:48

This intersection is repeated. Please revise accordingly.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:37:22

LSC Response: Duplicate text has been removed in the updated TIS report.

volumes (includes the sum of northbound and southbound approach volumes) and minor street left-turn volumes (eastbound approach volume) were analyzed to determine **if** the combination would exceed the threshold criteria for Four-Hour Vehicular-Volume Traffic-Signal Warrants and applicable other warrants in the *2009 Manual on Uniform Traffic Control Devices (MUTCD)*.

Five separate one-hour periods within the following morning and late-afternoon/evening periods have been analyzed:

- 6:00 – 7:00 a.m. (short-term only)
- 7:00 – 8:00 a.m.
- 8:00 – 9:00 a.m.
- 4:00 – 5:00 p.m.
- 5:00 – 6:00 p.m.

1 This section appears to be repeated. Please revise the text accordingly.

Warrant 2 - Four-Hour Vehicular Warrant

The MUTCD Warrant 2 (Four-Hour Vehicular Volume) contains a graph with threshold curves based on major and minor street traffic volumes, the number of intersection approach lanes on the major and minor streets, and the speed of the major street. This graph is shown in MUTCD Figure 4C-2. Details of this warrant are contained in Section 4C.03 of the MUTCD.

MUTCD Warrant 2 (Four-Hour Vehicular Volume) contains a graph (shown in MUTCD Figure 4C-2) with threshold curves based on major and minor street traffic volumes, the number of intersection approach lanes on the major and minor streets, and the speed of the major street.

Short-Term Baseline Traffic

Results from the four-hour traffic-signal warrant analysis for the short-term baseline (background only) traffic scenario are shown in the Warrant 2, Four-Hour Vehicular-Volume (MUTCD Figure 4C-2) signal-warrant chart in Figure 11. Two separate major/minor street volume data points exceeded the minimum threshold curve for an intersection with one lane for the major approach and one lane for the minor approach. As a result, the Four-Hour Vehicular-Volume Traffic-Signal Warrant threshold at the intersection of SH 115/Pawnee Road is **not** projected to be exceeded, based on the short-term baseline traffic scenario.

Note: both turning movements have been included in the side-street volumes.

Page: 9

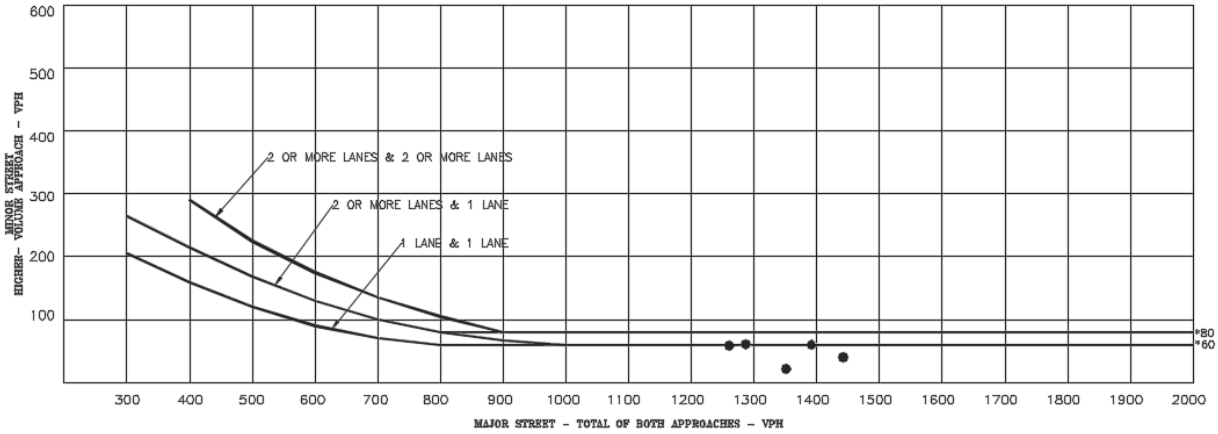
Number: 1 Author: Daniel Torres Subject: Cloud+ Date: 3/30/2021 11:35:07

This section appears to be repeated. Please revise the text accordingly.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:38:36

LSC Response: Duplicate text has been removed in the updated TIS report.

Figure 11: MUTCD Warrant 2, Four-Hour Vehicular Volume (Short-Term Baseline)



Major and minor street volumes shown in Figure 11 above are summarized in Table 4**Table 4** below.

fix duplicate text

Table 4: Major/Minor Volumes for 4-Hour Signal Warrants (Short-Term Baseline)

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?
6:00	7:00	1262	59	No
7:00	8:00	1390	61	Yes
8:00	9:00	1285	63	Yes
16:00	17:00	1438	47	No
17:00	18:00	1353	22	No
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant				***2 / 5 (No)***

Short-Term Baseline Plus Site-Generated Traffic

Results from the four-hour traffic signal warrant analysis for the short-term baseline plus site-generated traffic scenario are shown in the Warrant 2, Four-Hour Vehicular-Volume (MUTCD Figure 4C-2) signal warrant chart in Figure 12. Five separate major/minor street volume data points exceeded the minimum threshold curve for an intersection with one lane for the major approach and one lane for the minor approach. As a result, the Four-Hour Vehicular Volume Traffic-Signal Warrant threshold at the intersection of SH 115/Pawnee Road **is** projected to be exceeded, based on the short-term baseline plus site-generated traffic scenario.

Note: both turning movements have been included in the side-street volumes.

Page: 10

Number: 1 Author: Daniel Torres Subject: Highlight Date: 3/30/2021 11:37:12

Table 4Table

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:39:12

LSC Response: Duplicate text has been removed in the updated TIS report.

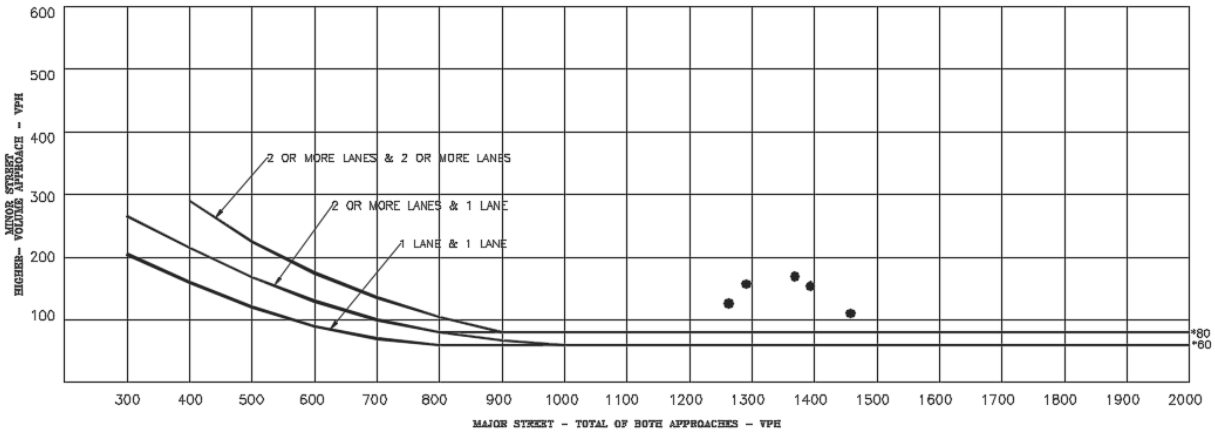
Number: 2 Author: Daniel Torres Subject: Callout Date: 3/30/2021 11:37:23

fix duplicate text

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:39:21

LSC Response: Duplicate text has been removed in the updated TIS report.

Figure 12: MUTCD Warrant 2, Four-Hour Vehicular Volume (Short-Term Baseline + Site)



Major and minor street volumes shown Figure 12 above are summarized in Table below.

Table 5: Major/Minor Volumes for 4-Hour Signal Warrants (Short-Term Baseline + Site)

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?
6:00	7:00	1267	123	Yes
7:00	8:00	1397	149	Yes
8:00	9:00	1292	154	Yes
16:00	17:00	1461	106	Yes
17:00	18:00	1375	148	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant				***5 / 5 (Yes)***

2040 Background Traffic

Results from the four-hour traffic-signal warrant analysis for the 2040 background traffic scenario are shown in the Warrant 2, Four-Hour Vehicular-Volume (MUTCD Figure 4C-2) signal warrant chart in Figure 13. Zero separate major/minor street volume data point exceeded the minimum threshold curve for an intersection with two lanes for the major approach and one lane for the minor approach. As a result, the Four-Hour Vehicular-Volume Traffic-Signal Warrant threshold at the intersection of SH 115/Pawnee Road **is not** projected to be exceeded, based on the 2040 background traffic scenario.

Note: both turning movements have been included in the minor street volumes.

Table 6 indicates that two of the data points meet the 4-hr warrant threshold. Please revise accordingly. 1

Page: 11

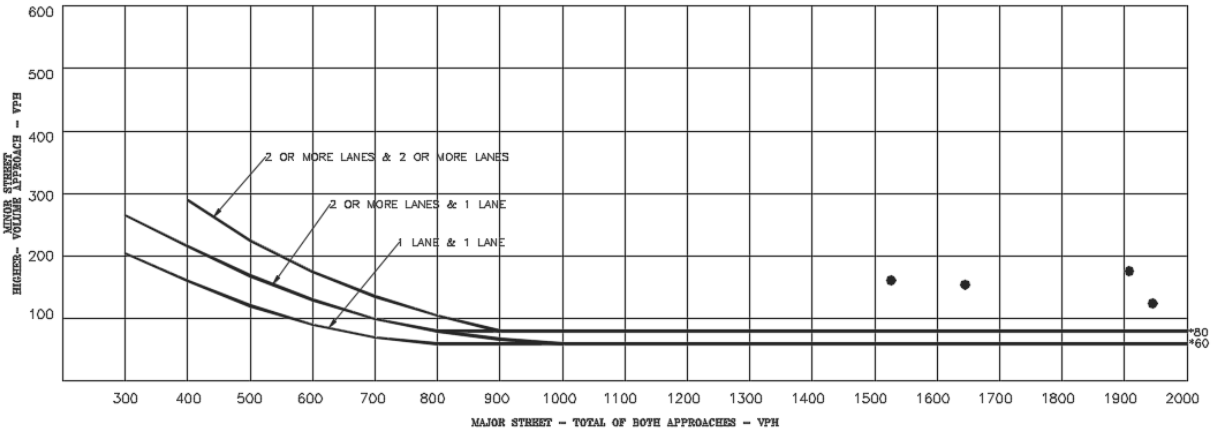
Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 12:54:46

Table 6 indicates that two of the data points meet the 4-hr warrant threshold. Please revise accordingly.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:42:03

LSC Response: This text has been revised in the updated TIS report to match Table 6 and reflect the correct number of data points (two) meeting the 4-hour warrant threshold.

Figure 14: MUTCD Warrant 2, Four-Hour Vehicular Volume (2040 Background + Site)



Major and minor street volumes shown in Figure 14 above are summarized in Table 7 below.

Table 7: Major/Minor Volumes for 4-Hour Signal Warrants (2040 Background + Site)

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?
7:00	8:00	1640	158	Yes
8:00	9:00	1517	163	Yes
16:00	17:00	1944	115	Yes
17:00	18:00	1906	181	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant				***4 / 4 (Yes)***

AUXILIARY TURN-LANE ANALYSIS

The following presents analysis of the evaluation of existing auxiliary turn lanes and needs for any additional turn lanes, based on the projected intersection turning movements.

SH 115/Pawnee Road

Southbound Right-Turn Deceleration Lane

Currently, a 545-foot exclusive southbound right-turn deceleration lane exists at the intersection of SH 115/Pawnee Road, consisting of the following length:

- 545-foot deceleration length
- 240-foot transition taper (20:1 ratio, which do[illegible]

Review 1 comment: Please provide analysis of the Auxiliary lanes that may be warranted on eastbound Pawnee and Cherokee due to the volume of those turn movements. It appears that left turn deceleration lanes meet the thresholds indicated in the ECM.
Review 2: Unresolved. Please address auxiliary lanes warranted on eastbound Pawnee at hwy 115. Per the peak hr volumes it appears that an exclusive eastbound left turn deceleration lane may be needed per ECM 2.3.7. Please address.

Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 13:18:56

Review 1 comment: Please provide analysis of the Auxiliary lanes that may be warranted on eastbound Pawnee and Cherokee due to the volume of those turn movements. It appears that left turn deceleration lanes meet the thresholds indicated in the ECM.Review 2: Unresolved. Please address auxiliary lanes warranted on eastbound Pawnee at hwy 115. Per the peak hr volumes it appears that an exclusive eastbound left turn deceleration lane may be needed per ECM 2.3.7. Please address.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 18:50:47

LSC Provided a response with the last submittal: *Separate turn lanes eastbound would not be required at Cherokee - the TIS shows this converted to a right-in/right-out intersection.***[regarding Pawnee/SH 115]** ***Separate turn lanes would not be needed as "speed change lanes" eastbound on Pawnee at SH 115 as 1) this is a T-intersection and all traffic turns and 2) most traffic turns left and the right turn volume is low.***

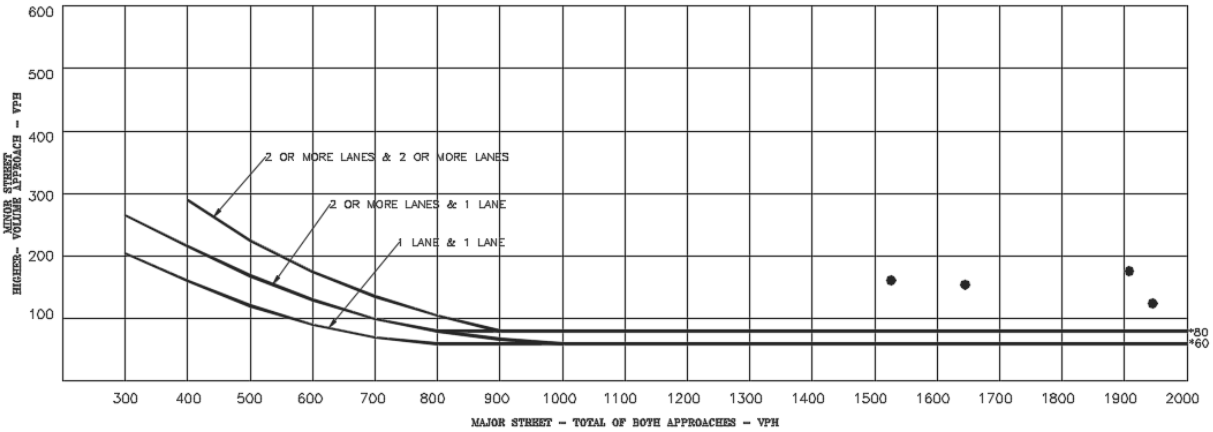
[LSC ADDED 4/30/2021 - To elaborate and expand upon our the previous response]: The following is our interpretation of the ECM criteria for turn lanes. Pawnee/SH 115 is actually a similar configuration to Figure 2-24, which presents a graphical guide to basic exclusive turn lane elements. Section 2.3.7.D describes the warrants for turn lanes generally in this manner: *[...] lane is required for any access with a projected peak hour right [or left] ingress turning volume of [...]*. The word "ingress" refers to traffic turning from the major street (in this case, Highway 115) onto the minor street (in this case, Pawnee) or access. Granted, if Pawnee/SH 115 were a four-leg intersection, the ECM turn movement threshold criteria could potentially apply in cases such as a full, four-leg signalized intersection. We have evaluated this intersection for eastbound approach turn lanes for this site-specific case, considering the intent of the ECM criteria.

Although the left turn volume exceeds 25 vph, this is a T intersection and there will be no eastbound through traffic creating a situation with a significant speed differential between turning traffic and through traffic (as all EB traffic will be turning). Aside from the eastbound right turning traffic volume being low, the right turning traffic will have a stop condition as well (if a directional signal is installed in the future, the right turning traffic will need to slow significantly to make the right turn) this eliminates the need for auxiliary "speed change lane(s)" to mitigate speed differential. Moreover, since the predominant movement is the EB LT, the right turning motorists will expect the lead vehicle to be a left turner.

As the speed differential reason for a separate turn lane does not exist in this situation, there would be a few situations where a separate left and right turn lanes would potentially be beneficial or warranted: 1) for "Convenience" for right turners, not having to wait behind left turning vehicles 2) to maintain satisfactory LOS (IE if a single lane approach has a low level a service, and separate RT and LT lanes improves the LOS or 3) to reduce queue length, if necessary, in the shared approach lane. The LOS and queue lengths are not shown to be problematic with the single eastbound approach lane.

Comments from page 13 continued on next page

Figure 14: MUTCD Warrant 2, Four-Hour Vehicular Volume (2040 Background + Site)



Major and minor street volumes shown in Figure 14 above are summarized in Table 7 below.

Table 7: Major/Minor Volumes for 4-Hour Signal Warrants (2040 Background + Site)

Start	End	Major Street Volume	Minor Street Volume	4-Hour Warrant Threshold Met?
7:00	8:00	1640	158	Yes
8:00	9:00	1517	163	Yes
16:00	17:00	1944	115	Yes
17:00	18:00	1906	181	Yes
# of hours meeting respective warrant thresholds/hours required to satisfy the warrant				***4 / 4 (Yes)***

AUXILIARY TURN-LANE ANALYSIS

The following presents analysis of the evaluation of existing auxiliary turn lanes and needs for any additional turn lanes, based on the projected intersection turning movements.

SH 115/Pawnee Road

Southbound Right-Turn Deceleration Lane

Currently, a 545-foot exclusive southbound right-turn deceleration lane exists at the intersection of SH 115/Pawnee Road, consisting of the following lengths:

- 545-foot deceleration length
- 240-foot transition taper (20:1 ratio, which does not meet the 25:1 ratio)

Review 1 comment: Please provide analysis of the Auxiliary lanes that may be warranted on eastbound Pawnee and Cherokee due to the volume of those turn movements. It appears that left turn deceleration lanes meet the thresholds indicated in the ECM.
Review 2: Unresolved. Please address auxiliary lanes warranted on eastbound Pawnee at hwy 115. Per the peak hr volumes it appears that an exclusive eastbound left turn deceleration lane may be needed per ECM 2.3.7. Please address.

The current southbound right-turn deceleration lane does **not** meet CDOT design criteria listed in Table 4-6 and Table 4-8 of the *State Highway Access Code*. The CDOT access code criteria prescribes the following:

- 700-foot deceleration length (adjusted for highway grades as applicable)
- 300-foot transition taper (25:1 ratio)

Potentially minor modifications to the shoulder and restriping could bring the turn lane up to standards, or a CDOT design waiver could be submitted if modifications would be extensive. This could be determined at the design stage.

Southbound Right-Turn Acceleration Lane

A southbound **right-turn** acceleration lane would **not** be required at the intersection of SH 115/Pawnee based on projected traffic volumes and criteria in 3.7.4(d) of the *State Highway Access Code*. Although the right turn acceleration lanes are not required as the turning volume is projected to fall below the threshold requiring the lane, there is a continuous southbound right-turn lane between these two intersections.

1

Review 1 comment: Please provide your recommendations. Are there any improvements/recommendations that are possible?
Review 2: Unresolved. You have stated the existing conditions and what the standard lengths of the state highway access code. Please indicate what your recommendation is for this acceleration lane. Should it stay as is? are any changes recommended?

Northbound Left-Turn Deceleration Lane

For the 60-mph design speed and EX category, the CDOT access code prescribes a standard length of 1,025 feet consisting of:

- 700-foot deceleration length
- 300-foot transition taper (25:1 ratio)
- 25 feet of storage stacking distance

The intersections of Pawnee Road and Cherokee Drive are separated by 380 feet (centerline distance along SH 115). Therefore, it is not possible for the northbound left-turn deceleration lane to meet the required 1,000-foot minimum CDOT criteria. However, assuming the conversion of Cherokee/SH 115 to a right-in/right-out intersection, the northbound left turn lane for the Pawnee Road intersection could be 1,025 feet (including transition taper) by utilizing the current left turn lane for Cherokee as additional length for the Pawnee left turn lane. Traffic using the lane for northbound left deceleration for a left turn onto Pawnee is minimal as the majority of the traffic arrives from the north.

Northbound Left-Turn Acceleration Lane

Currently, the 945-foot **northbound** left-turn acceleration lane consists of 635 feet of a full-width lane and what appears to be an approximately 750-foot merge taper. The roadway grade on SH 115 at this existing left-turn acceleration lane is approximately 6 percent for a portion of the lane north of Pawnee. However, the grades are less than six percent closer to the intersection. Although the criteria in Table 4-7 of the *State Highway Access Code* shows a grade adjustment factor of 0.5 applied for acceleration lanes on roadways with a posted speed limit of 60 mph and a 5%-7% downgrade, a portion of this lane has a grade of less than 5 percent. The standard length per Table 4-6 of the *State Highway Access Code*

Page: 14

Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 13:24:57

Review 1 comment: Please provide your recommendations. Are there any improvements/recommendations that are possible?Review 2: Unresolved. You have stated the existing conditions and what the standard lengths of the state highway access code. Please indicate what your recommendation is for this acceleration lane. Should it stay as is? are any changes recommended?

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 18:49:18

LSC Provided the following response with the last submittal: *LSC Response: The updated TIS provides updated recommendations for the channelized T. Detailed recommendations on the length and transition of the northbound left accel lane will be provided with the design stage and as part of the CDOT access permit process.*

[LSC ADDED 4/30/2021 - To elaborate and expand upon our the previous response]: A detailed survey and centerline profile of the section of Highway 115 would be beneficial in developing the design. The grades are variable, which affects vehicle acceleration, and the existing laneage is difficult to determine in the field without a survey. This level of detail would best be provided as plans for development progress. A survey within Highway 115 would be difficult, so completing one at this zoning stage would be premature. These design details would be provided with the access permit process and CDOT approval of a design for highway improvements would be required prior to issuance of a "notice-to proceed" (part of the access permit process).

Note: CDOT has provided a comment letter dated April 19, 2021. That letter did not indicate that these details couldn't be resolved following issuance of an access permit but prior to issuance of a NTP (Notice to Proceed). CDOT would require these details to be identified and design plans for highway improvements to be submitted and approved by CDOT prior to a NTP with construction.

for acceleration lanes on EX highways with grades of less than three percent is a 1,170-foot acceleration lane length plus 300 feet of transition taper length (25:1 ratio), totaling 1,470 feet.

SH 115/Cherokee Drive

Southbound Right-Turn Deceleration Lane

Due to the close proximity between these two intersections (380 feet centerline spacing), it would not be possible for a southbound right-turn deceleration lane to meet CDOT design criteria. Thus, there is an existing continuous southbound right-turn lane on SH 115 between Pawnee Road and Cherokee Drive.

Southbound Right-Turn Acceleration Lane

A southbound right-turn **acceleration** lane would **not** be necessary on SH 115 at its intersection with Cherokee Drive, based on the projected short-term and long-term background plus site-generated volumes and criteria in the *State Highway Access Code*, as shown in Figure 7 and Figure 9. Fewer than 10 total vehicles are projected to turn eastbound-right from Cherokee Drive to head southbound on SH 115 during either peak hour.

Northbound Left-Turn Deceleration Lane

review 1 comment: 380' is indicated in the previous page. Revise so that it is consistent.
Review 2: Unresolved. Please revise so that the narrative is consistent.

Currently, a 635-foot exclusive northbound left-turn deceleration lane exists at the intersection of SH 115/Cherokee Drive, consisting of the following lengths:

- 415-foot deceleration length
- 222-foot transition taper (18.5:1 ratio)

The current northbound left-turn deceleration lane is short of the 60-mph standard length listed in Table 4-6 and Table 4-8 of the *State Highway Access Code.* However, assuming the conversion of the Cherokee/SH 115 to a right-in/right-out intersection, the northbound left turn lane would not be needed for the Cherokee intersection, and the lane length could be used for the left turn lane for Pawnee.

Northbound Left-Turn Acceleration Lane

The intersections of Pawnee Road and Cherokee Drive are separated by 375 feet (centerline distance along SH 115). Therefore, an **exclusive** northbound left-turn **acceleration** lane is not feasible. The current configuration is for a continuous shared northbound left-turn lane for northbound left turns at Pawnee and for eastbound-to-northbound left turns accelerating from both intersections.

Assuming the conversion of the Cherokee/SH 115 to a right-in/right-out intersection, the northbound left turn acceleration lane would **not be needed** for the Cherokee intersection.

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Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 14:08:28

review 1 comment: 380' is indicated in the previous page. Revise so that it is consitent.Review 2: Unresolved. Please revise so that the narrative is consistent.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:45:05

LSC Response: This reference to the intersection spacing distance has been revised to match the 380-foot spacing referenced in the other sections of the report.

1

FYI: The proposed classifications and access of the roadways will be further reviewed when the actual design plans are submitted with the prelminary plan/final plat application is submitted. Acceptance of this TIS at this Rezone stage does not constitute approval of the recommended classification of the roadways.

COUNTY STREET CLASSIFICATIONS

Figure 10 shows the proposed roadway classifications.

Pawnee Road

Pawnee Road is currently classified as a Rural Local roadway. However, estimated current traffic and projected future traffic exceed the design ADT of 750 vehicles per day for Rural Local roadway on the section east of Piute. The projected ADT of 2,847 vehicles per day (vpd) is within the design ADT range of an Urban Local street. However, since the potential future land use and trip generation of the parcel northwest of SH 115/Pawnee is not known, LSC recommends an Urban Collector classification for the section of Pawnee from State Highway 115 west to a point 1,100 feet west of Highway 115. Between this point and Piute Road, LSC recommends Urban Local classification.

Cherokee Drive

Cherokee Drive is currently classified as a Rural Local roadway. The estimated current traffic is consistent with that classification.

Other Existing Roadways within the Study Area

Piute Road and existing portions of Delaware Road, Seneca Road and Sioux Road are shown to remain Rural Local roads.

Pinon Mesa Rock Creek Subdivision Streets

Figure 10 shows the recommended street classifications for the new Pinon Mesa Rock Creek subdivision streets. Streets are shown as Urban Local or Urban Local Low Volume streets.

COUNTY ROAD IMPROVEMENT FEE PROGRAM

Transportation Impact Fees

Per ECM Appendix B: *State what the current applicable Transportation Impact Fees are and what option the developer will be selecting for payment*.

The applicant intends to join the 10 mil PID.

For this PID option, the current upfront fee amount **rate** is $1,221 **per dwelling unit**. The total upfront fee amount under this option would be $201,465 based on a planned 165 dwelling units. Note: This is the current rate and is subject to change. El Paso County updates this rate periodically.

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Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 14:30:40

FYI: The proposed classifications and access of the roadways will be further reviewed when the actual design plans are submitted with the prelminary plan/final plat application is submitted. Acceptance of this TIS at this Rezone stage does not constitute approval of the recommended classification of the roadways.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 18:02:54

LSC Response: Comment Noted. Also, this note has been added to this section of the updated TIS.

- The intersection of Pawnee/SH 115 is projected to meet a four-hour traffic signal warrant with the conversion of Cherokee/SH 115 to a right-in/right-out intersection and with the addition of site-generated traffic. Although the level of service is C with the channelized T configuration, there may be a point in the future when a signal may need to be installed. Moreover, potential future development and resulting trip generation of the parcel northwest of SH 115/Pawnee would also likely add turning movements which could result in the future need for the signal.

- Due to the potential future need to signalize the intersection of Pawnee/SH 115, and the need to mitigate the intersection spacing of less than one-mile along Highway 115, the future signal would need to be a "directional" signal with the channelized T configuration. Raised curb channelization would be necessary to allow for a potential future directional traffic signal.

- The recommended classification for Pawnee is **Urban Collector** from SH 115 to 1,100 ft west of SH 115 and **Urban Local** from this point west to Piute Road as shown in Figure 10. West of Piute Road, the recommended roadway classification is Rural Local. The roadway will need to be upgraded between SH 115 and Piute Road.

- Cherokee Road will likely need to be classified as a Rural Local road (currently a Rural Local roadway) between SH 115 and Piute Road.

- Please refer to Table 8 (attached) which summarizes the roadway system improvements.

- Additional traffic studies will be provided with the subsequent applications.
  A State Highway Access Permit will be required for the west legs of both the intersection of SH 115/Pawnee Road and SH 115/Cherokee Drive due to changes in use (*State Highway Access Code* section 2.6). The traffic volume on the west leg of both intersections would increase by more than 20 percent. El Paso County would be the "Permittee" and the developer would be the "Applicant."

* * * * *

Please provide the table. 1

Page: 18

Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 13:51:07

Please provide the table.

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:46:50

LSC Response: The Roadway Improvements table (Table 8) is included in the updated TIS report.

Table 3

?

1

TRANSPORTATION
CONSULTANTS, INC.

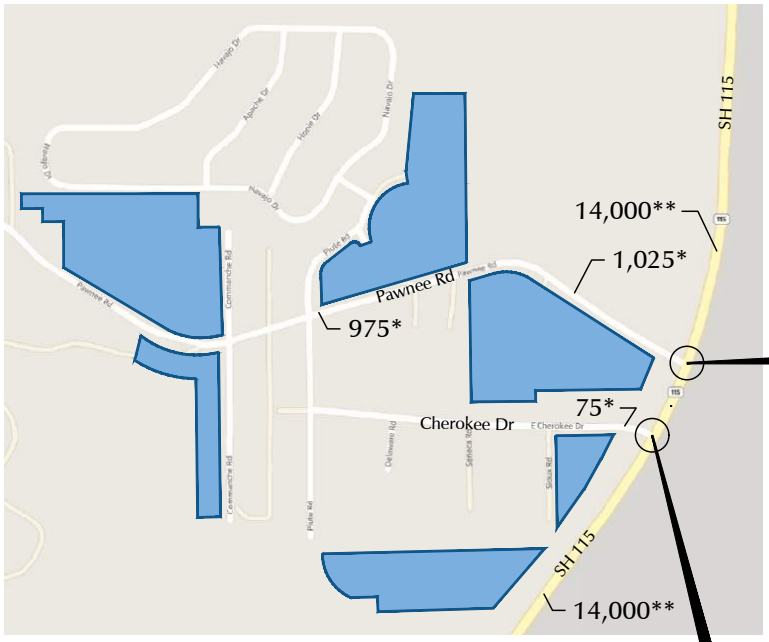
Page: 20

Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 13:50:44

?

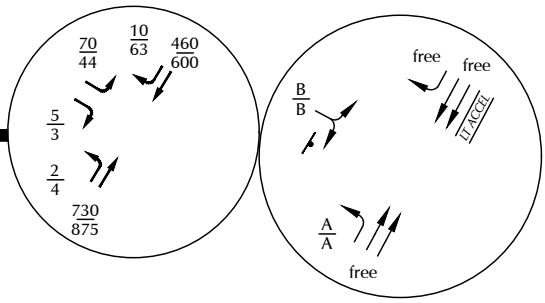
Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 19:59:42

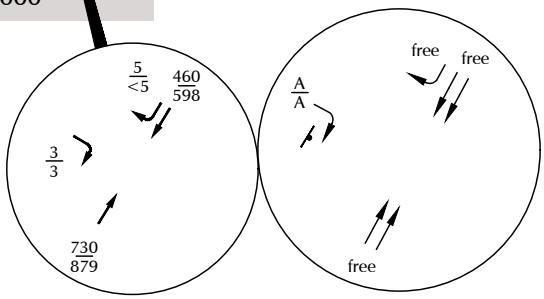
LSC Response: This divider page has been deleted as Table 3 is embedded in the report document rather than attached.



* Short-Term Baseline represents shifted "adjusted existing" volumes from Figure 3 to reflect the assumed conversion of SH 115/Cherokee Dr to a right-in/right-out (i.e., left turns at Cherokee Dr were shifted to Pawnee Rd)

Not to scale





* AADT estimated by LSC (adjusted for RIRO)

** AADT by CDOT (2019)

AM peak hour = 7:15-8:15am

PM peak hour = 4:15-5:15pm

1 Stop Sign

2 Traffic Signal

3 AM Individual Movement Peak-Hour LOS / PM Individual Movement Peak-Hour LOS

4 AM Weekday Peak-Hour Traffic (Veh/Hour) / PM Weekday Peak-Hour Traffic (Veh/Hour)

5 X,XXX Average Daily Traffic (Vehicles/Day)

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Figure 4

Short-Term Baseline* Traffic, Lane Geometry, Traffic Control, and LOS

Piñon Rock Creek Mesa (LSC# 184380)

Page: 26

Number: 1 Author: AutoCAD SHX Text Date: Indeterminate
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Number: 2 Author: AutoCAD SHX Text Date: Indeterminate
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Number: 3 Author: AutoCAD SHX Text Date: Indeterminate
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Number: 4 Author: AutoCAD SHX Text Date: Indeterminate
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Number: 5 Author: AutoCAD SHX Text Date: Indeterminate
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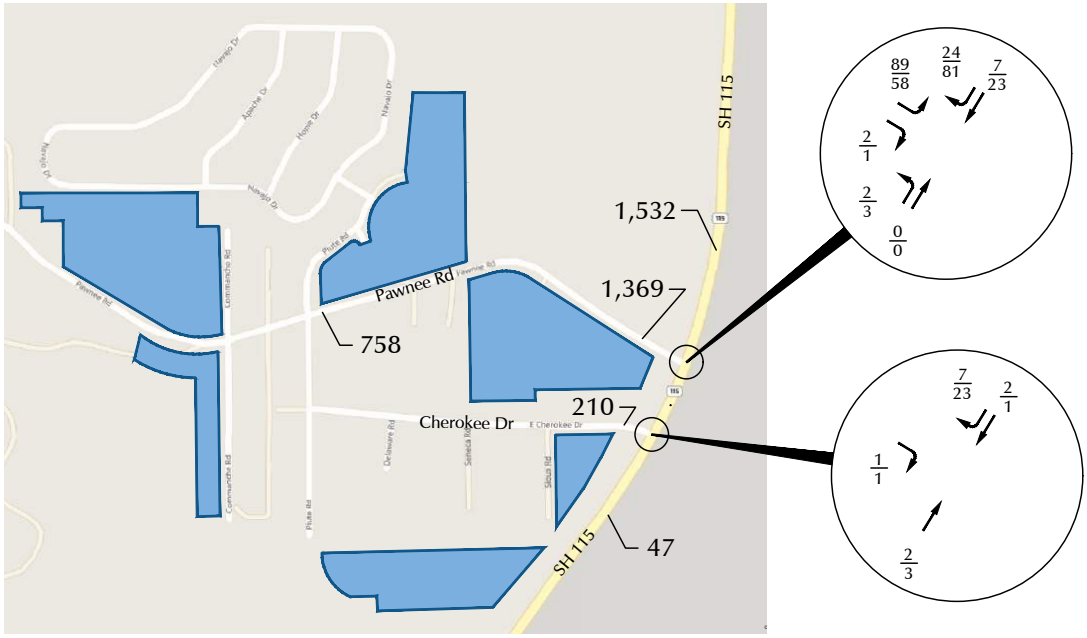

Not to scale

AM peak hour = 7:15-8:15am

PM peak hour = 4:15-5:15pm

XX/XX [1] — AM Weekday Peak-Hour Traffic (Veh/Hour) / PM Weekday Peak-Hour Traffic (Veh/Hour)

X,XXX [2] — Average Daily Traffic (Vehicles/Day)

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Figure 6

Site-Generated Traffic

Piñon Rock Creek Mesa (LSC# 184380)

Page: 28

Number: 1 Author: AutoCAD SHX Text Date: Indeterminate

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Number: 2 Author: AutoCAD SHX Text Date: Indeterminate

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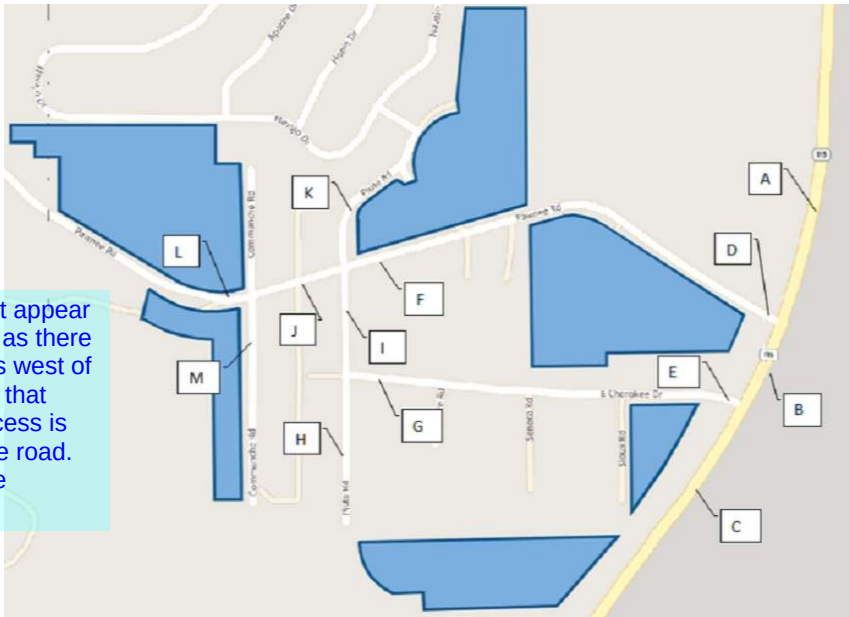
Parcels part of this application



Not to scale

1 This does not appear to be correct as there are many lots west of Commanche that their only access is off of Pawnee road. Please revise accordingly

* Assumes adjustment to background traffic with conversion of SH 115/Cherokee Dr to a right-in/right-out intersection

Location	Existing	Short-Term Baseline*	Site-Generated	Short-Term Baseline + Site	2040 Background*	2040 Background + Site
A	14000	14000	1532	15532	20868	22400
B	14000	14000	442	14442	19864	20306
C	14000	14000	47	14047	19853	19900
D	950	1025	1369	2395	1200	2575
E	150	75	210	285	175	385
F	900	975	758	1735	1125	1875
G	49	49	209	258	115	323
H	21	21	18	38	48	66
I	75	75	210	285	175	385
J	50	50	548	598	59	607
K	775	775	0	775	918	918
L	2	2	455	457	3	458
M	14	14	89	102	16	105

* Note: Assumes adjustment to background traffic with conversion of SH 115/Cherokee Drive from a full-movement to a right-in/right-out intersection

2

TRANSPORTATION CONSULTANTS, INC.

Exhibit 1

Projected ADTs

Piñon Rock Creek Mesa (LSC# 184380)

Page: 34

Number: 1 Author: Daniel Torres Subject: Callout Date: 3/30/2021 14:07:44

This does not appear to be correct as there are many lots west of Commanche that their only access is off of Pawnee road. Please revise accordingly

Author: jchodsdon Subject: Sticky Note Date: 5/2/2021 17:49:56

LSC Response: The ADT volume for call-out for location "L" has been corrected in the table (changed from 2 to 200 vehicles/day) to reflect the approximately 20 existing lots to the west of Comanche.

Number: 2 Author: Daniel Torres Subject: Highlight Date: 3/30/2021 14:06:28