

LSC Responses to TIS Redline Comments



LSC TRANSPORTATION CONSULTANTS, INC.
2504 East Pikes Peak Avenue, Suite 304
Colorado Springs, CO 80909
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: <http://www.lsctrans.com>

Grandview Reserve Phases 2 & 3 Preliminary Plan & PUD Traffic Impact Analysis (LSC #S234340) December 21, 2023 PUDSP-23-006 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.


Bryan Reed

12/22/23
Date

LSC Responses to TIS Redline Comm

Page: 1

 Number: 1 Author: CDurham Subject: Text Box Date: 1/29/2024 3:20:53 PM
[PUDSP-23-006](#)

 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:39:50 AM
LSC Response: The additional information has been added as requested.

INTERMEDIATE-TERM (YEAR 2033) BACKGROUND TRAFFIC

Figure 6a shows the projected intermediate-term (Year 2033) background traffic volumes. These background traffic volumes have been based on the short-term (Year 2026) traffic volumes (from Figure 5a) plus increases in traffic due to general regional growth, including buildout of the following subdivisions in the vicinity of the site:

- Sanctuary at Meridian Ranch
- Rolling Hills Ranch North
- Latigo Trails Filing Nos. 1 and 2
- Grandview Reserve Phase 1

Figure 6b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the intermediate-term background volumes.


2043 BACKGROUND TRAFFIC Per ECM Appendix Section B.2.2, Long Range Horizon is 20-25 years out. Please update so Long term analysis fits within this time frame.¹

Figure 7a shows the projected 2043 background-traffic volumes. The small-area model was also used to develop these volumes. In addition to the 2033 background traffic and developments assumed to be developed by 2033, the 2043 background traffic volumes assume trips generated by/traffic volumes estimated for buildout of:


- The Meridian Ranch development including buildout of the proposed school site located north of Falcon High School,
- Grandview Reserve (except trips to be generated by land uses within the Phases 2 and 3 area, as these trips are included in the “site-generated traffic.”),
- The Waterbury Phase 1 and 2 developments to the southeast
- Latigo Trails and estimated buildout trips that may be generated by future development of the area generally north of Rex Road between Eastonville Road and US Hwy 24. This analysis assumes trip generation based on future development of 2 ½-acre residential lots.

The 2043 background-traffic scenario assumes Stapleton Drive extended west to connect with the Briargate Parkway extension and Rex Road extended east through the future phases of Grandview Reserve to US Hwy 24.

Figure 7b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the 2043 background volumes.

 Number: 1 Author: CDurham Subject: Text Box Date: 1/29/2024 1:13:16 PM

[Per ECM Appendix Section B.2.2, Long Range Horizon is 20-25 years out. Please update so Long term analysis fits within this time frame.](#)

 Author: kdfer Subject: Sticky Note Date: 2/21/2024 10:28:36 AM

LSC Response: The long-term background traffic has been updated to year 2045 as well as to account for a changes to the Grandview Reserve Sketch Plan to move the future school site south of Rex Road.

PROJECTED LEVELS OF SERVICE

The key area intersections and site-access points have been analyzed to determine the projected future levels of service based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board and Synchro signalized intersection procedures. Based on the criteria contained in the *ECM*, a peak-hour factor of 0.85 was used for the short-term (Year 2026) and intermediate-term (Year 2033) analysis, except for those intersections whose existing peak-hour factor calculated from traffic counts conducted by LSC was higher than 0.85. In those cases, the existing peak-hour factor was used. A peak-hour factor of 0.95 was used for the long-term (Year 2043). Two percent heavy vehicles were assumed for both the Year 2026 and Year 2043 analysis. The results of the analysis are contained in Figures 5b, 6b, 7b, 12b, 13b, 14b, and 15b. The level of service reports are attached.

What about the 2033 analysis? ¹

Rex Road/Eastonville Road (Intersection #1)

The intersection of Rex/Eastonville Road is planned to be constructed as a modern one-lane roundabout as part of the approved Grandview Reserve Phase 1 development. All approaches at this intersection are projected to operate at LOS D or better through 2043.

Rex Road/Ivybridge Boulevard (Intersection #2)

The intersection of Rex Road/Ivybridge Boulevard is projected to operate at LOS C or better for all movements based on the projected 2043 total traffic volumes as a two-way, stop-sign-controlled “T” intersection. This access to Rex Road is intended to remain a “T” intersection in perpetuity. If future access is needed for the parcels north of Rex Road, it was assumed this access would occur via a second “T” intersection east of Ivybridge.

Rex Road/Potential Future North Access (Planned Public Street) (Intersection #3)

If future access is needed for parcels north of Rex Road, it was assumed that this intersection would be a stop-sign controlled “T” intersection. All movements at this intersection are projected to operate at LOS C or better through 2043.

Rex Road/Phase 2 West Access (Planned Public Street) (Intersection #4)


The proposed west access for Phase 2 is proposed to operate at LOS B or better for all movements through 2043 as a stop-sign controlled intersection.

Rex Road/Phase 2 East Intersection (Planned Public Street) (Intersection #5)

The proposed east access for Phase 2 is proposed to operate at LOS C or better for all movements through 2043 as a stop-sign controlled intersection.

Number: 1 Author: CDurham Subject: Callout Date: 1/29/2024 1:15:51 PM

[What about the 2033 analysis?](#)

 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:45:12 AM
LSC Response: A reference to 2033 has been added to the text.

Rex Road/Phase 3 Access (Planned Public Street) (Intersection #6)

The proposed Phase 3 access to Rex Road is planned to be constructed as a modern one-lane roundabout. All approaches are projected to operate at LOS D or better through 2043 if a bypass lane is provided for the westbound-to-northbound movement.

Rex Road Intersection #7 and #8

Intersections #7 and #8 were not analyzed as part of this report as they are not planned as part of the currently proposed Phases 2 and 3. Detailed analysis will be provided with future submissions.

US Highway 24/Rex Road (Intersection #9)

For what Phase is this intersection expected to be constructed?

The intersection of US Highway 24/Rex Road is not planned to be constructed as part of Phase 1. By 2043, it was assumed that Rex Road would be constructed from Eastonville to US Hwy 24 and that intersection with US Hwy 24 would be constructed as a signal-controlled, channelized "T" intersection. All movements are projected to operate at LOS D, based on the projected 2041 total traffic volumes.

Eastonville Road/Dawlish Drive (Intersection #10)


The intersection of Eastonville Road/Dawlish Drive is planned to be constructed as a one-lane modern roundabout as part of the Grandview Reserve Phase 1 development. All approaches are projected to operate at LOS C or better through 2043.

Eastonville Road/Brixham Drive (Intersection #11)


The future stop-sign-controlled intersection of Eastonville Road/Brixham Drive is projected to operate at LOS C or better for all movements during the peak hours as a stop-sign-controlled "T" intersection, based on the short-term (Year 2026) total traffic volumes. By 2043, the westbound left-turn movement is projected to operate at LOS D during the peak hours.

Londonderry Drive/Eastonville Road (Intersection #12)


It is our understanding that the intersection of Londonderry/Eastonville is planned to be reconstructed as a modern roundabout as part of a PPRTA project. The intersection is projected to operate at LOS D or better for all approaches through 2043 as a modern roundabout.

 Number: 1 Author: CDurham Subject: Callout Date: 1/29/2024 1:18:36 PM


[For what Phase is this intersection expected to be constructed?](#)

 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:41:19 AM

LSC Response: The exact phase is not known. The text has been revised to indicate that the final segment of Rex Road will be completed as part of a future phase beyond Phase 3 as discussed on Page 5 under the "Roadway and Traffic Conditions->Area Roadways->Rex Road" section.

 Number: 2 Author: CDurham Subject: Highlight Date: 1/29/2024 1:18:01 PM

d 2041

 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:41:31 AM

LSC Response: The long term year has been updated to 2045.

Potentially Reimbursable Improvements Under the MTCP Fee Program

Nearby improvement projects potentially reimbursable under the Fee Program are (From MTCP Map No. 13):

- MTCP Project No. U19: Eastonville Road
- MTCP Project No. N4: Rex Road (extended between Eastonville & US Highway 24)
- MTCP Project No C12: Stapleton Road
- Also, potentially intersection improvements and traffic signals/roundabouts at major MTCP roadway intersections per fee program guidelines
- Also, potentially intersection improvements and traffic signals (or CDOT traffic signal escrows)/roundabouts at US 24 intersections with Rex Road and/or Stapleton Road per fee program guidelines

ROADWAY IMPROVEMENTS

The attached Table 3 presents the Phases 2 and 3 recommended roadway improvements.

- Based on the 2043 total traffic volumes shown in Figure 12a and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)*, a westbound left-turn lane will be required on Rex Road approaching the Phase 2 west access (Intersection #4). This lane should be 205 feet long plus a 160-foot taper.
- Based on the 2043 total traffic volumes shown in Figure 12a and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)*, a westbound left-turn lane will be required on Rex Road approaching the Phase 2 east access (Intersection #5). This lane should be 255 feet long plus a 160-foot taper.
- The proposed access for Phase 3 to Rex Road (Intersection #6) should be constructed as a one-lane roundabout. A westbound right-turn bypass lane will likely be needed in the future when the north leg of the intersection is constructed.

* * * * *

Provide a section on Queuing Analysis, ¹
MTCP 2040 Improvement Projects &
Auxiliary Turn Lanes

Include section discussing deviations. Per ²
roadways sections shown on preliminary plan,
some local roads are shown having a 65'
ROW, which would require a deviation. Also,
the section for Rex Road does not match
county standard. Indicate if a deviation has
been approved, is being reviewed, etc.

☰ Number: 1 Author: CDurham Subject: Text Box Date: 1/29/2024 3:25:52 PM

[Provide a section on Queuing Analysis, MTCP 2040 Improvement Projects & Auxiliary Turn Lanes](#)

↩ Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:41:57 AM

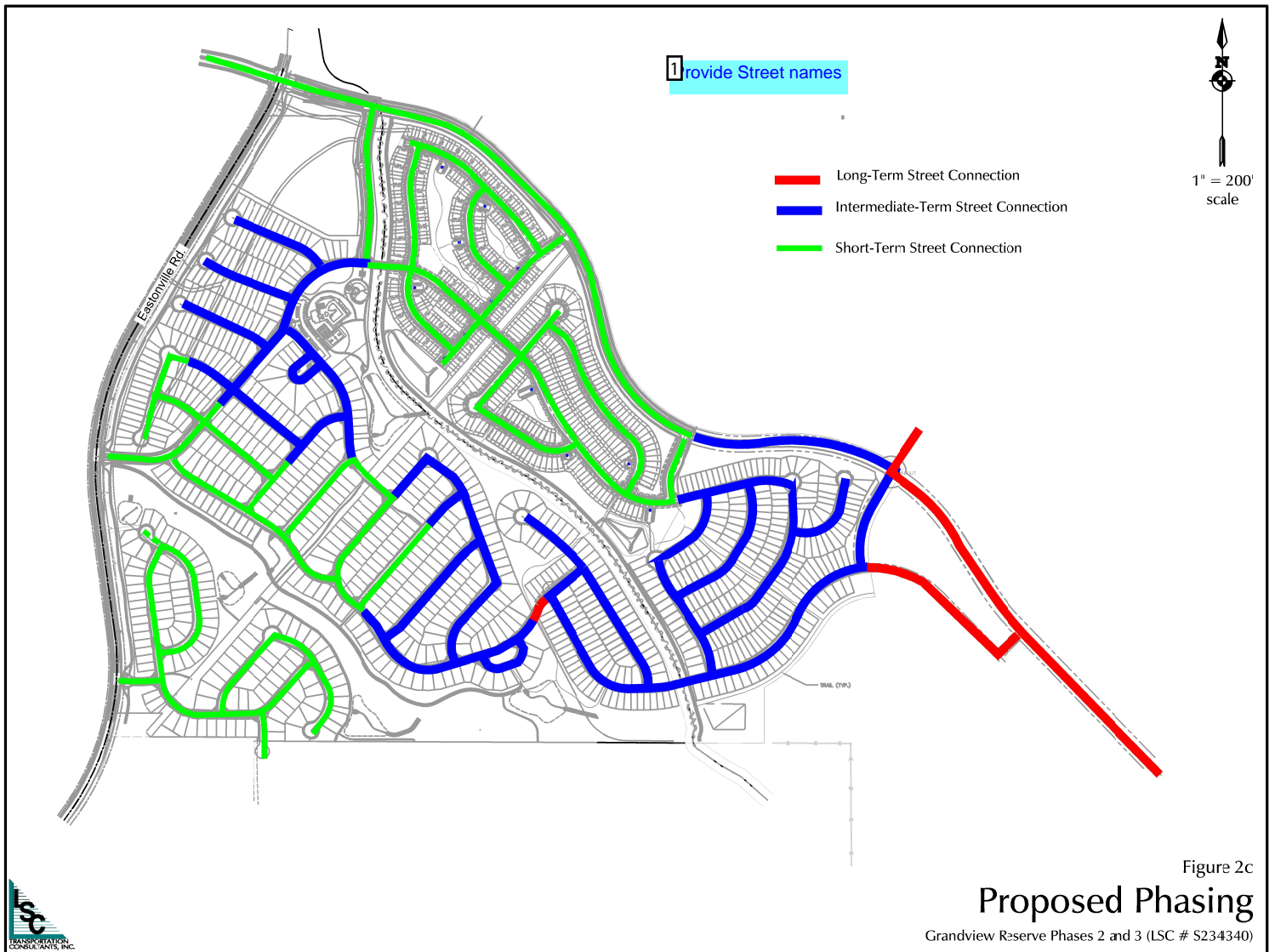
LSC Response: A queuing analysis section has been added as requested. This TIS includes a section on "Potentially Reimbursable Improvements Under the MTCP Fee Program" page 16. The "Roadway Improvements" section also on page 16 includes recommendations for auxiliary turn lanes.


☰ Number: 2 Author: CDurham Subject: Text Box Date: 1/29/2024 3:36:33 PM

[Include section discussing deviations. Per roadways sections shown on preliminary plan, some local roads are shown having a 65' ROW, which would require a deviation. Also, the section for Rex Road does not match county standard. Indicate if a deviation has been approved, is being reviewed, etc.](#)


↩ Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:42:07 AM

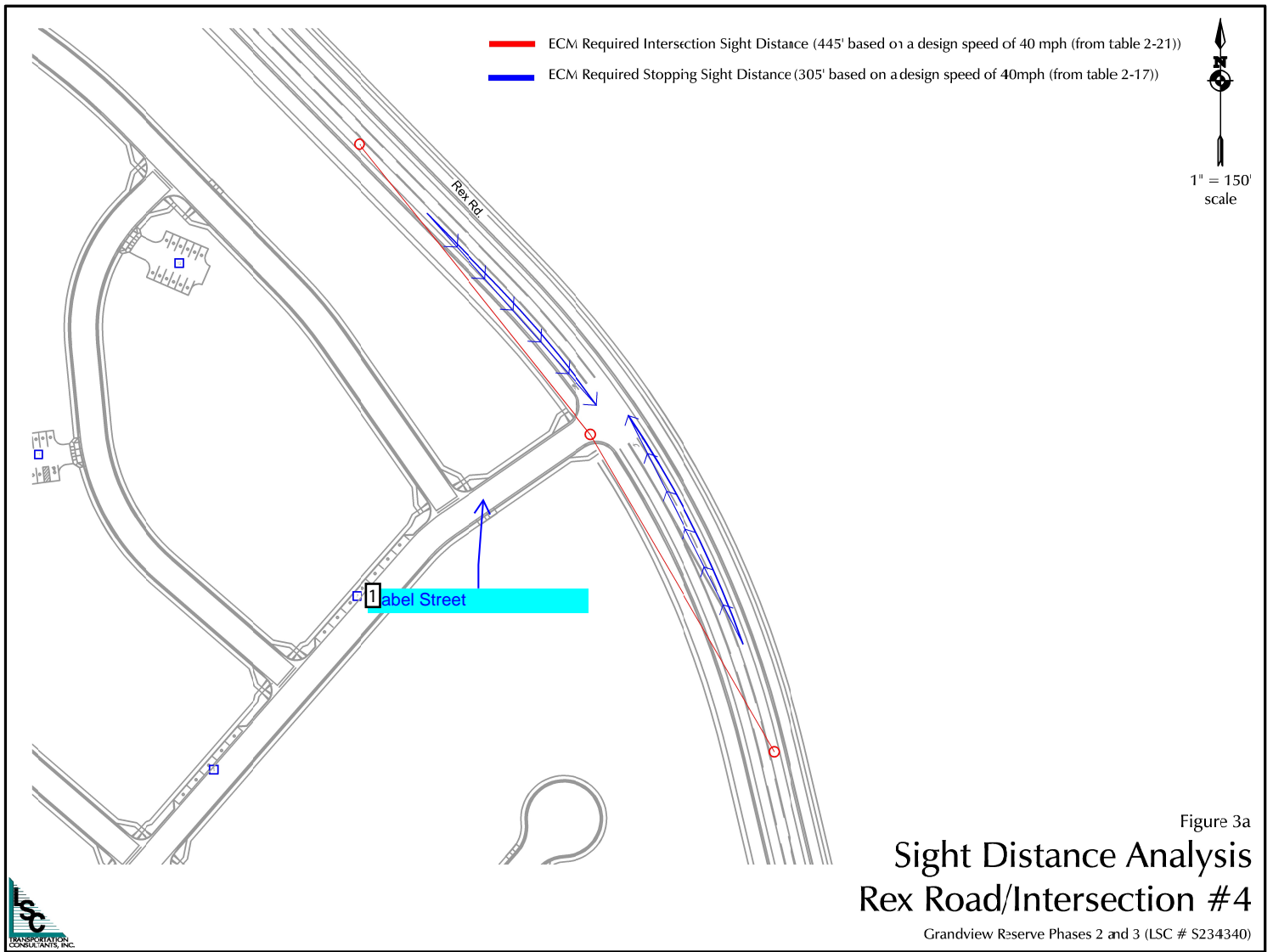
LSC Response: The additional information has been included as requested.



 Number: 1 Author: CDurham Subject: Text Box Date: 1/29/2024 2:48:58 PM


[Provide Street names](#)

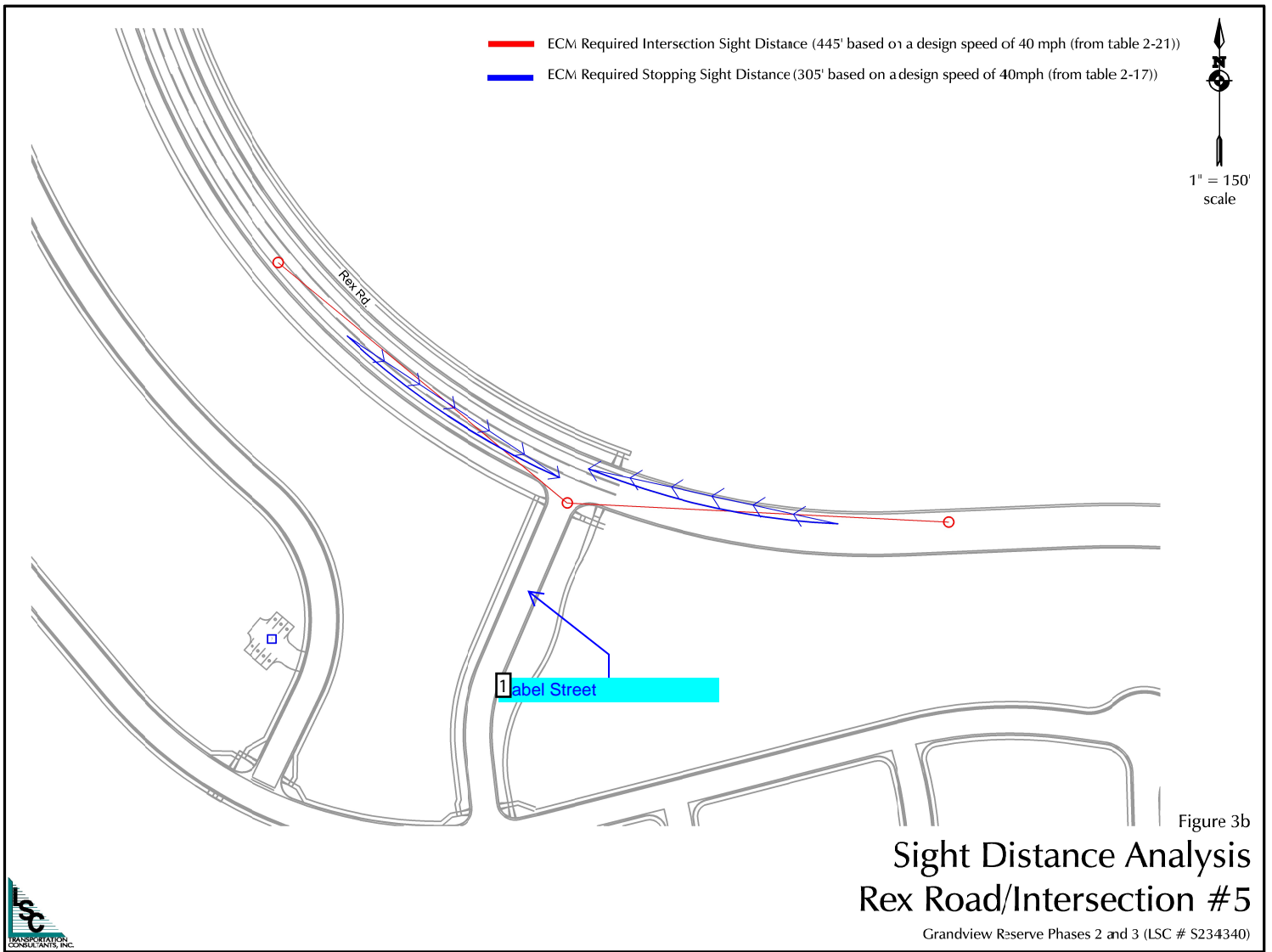
 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:42:15 AM
LSC Response: The figure has been revised as requested.



Number: 1 Author: CDurham Subject: Callout Date: 1/29/2024 2:49:36 PM


[Label Street](#)

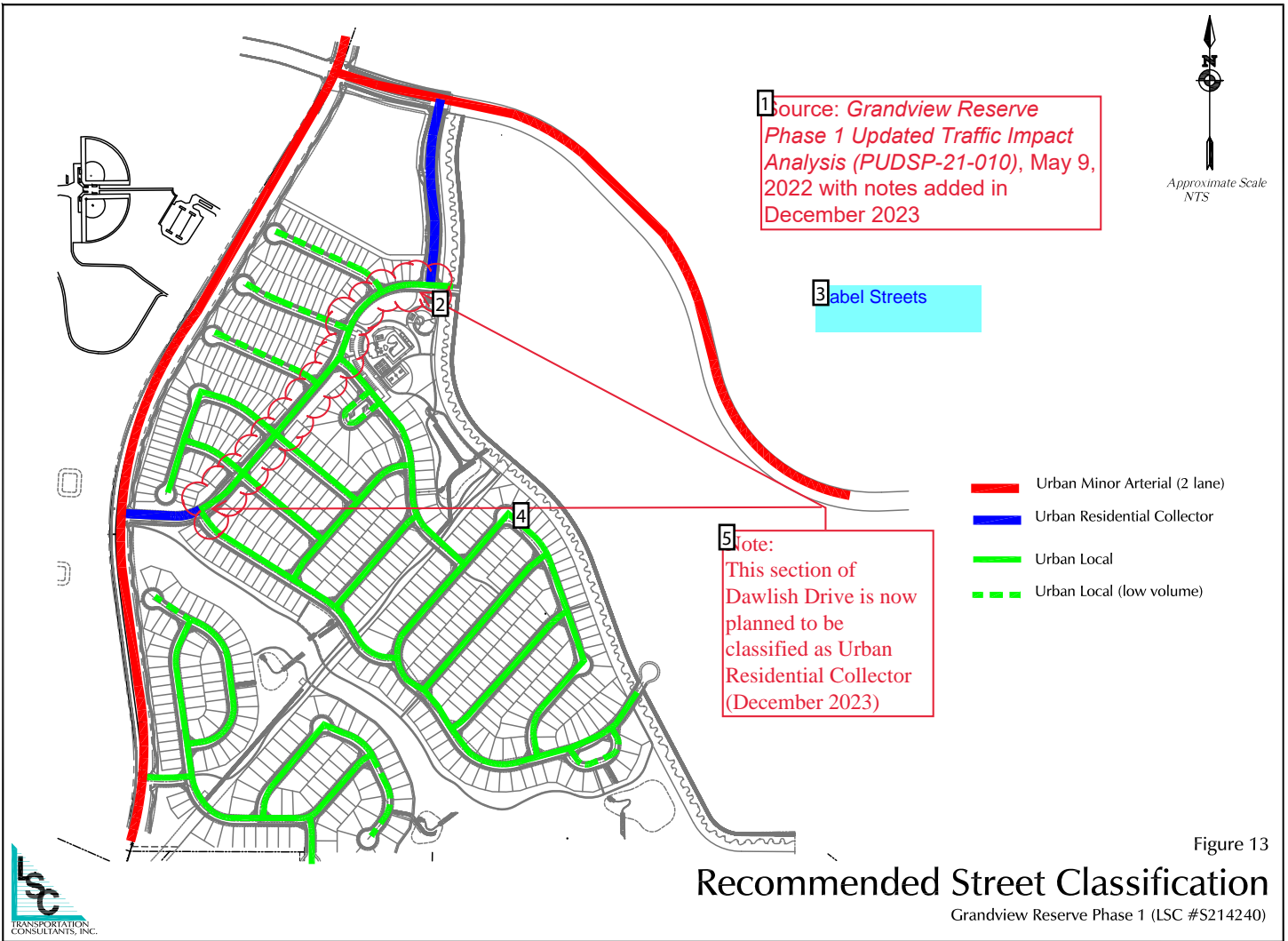
 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:42:23 AM
LSC Response: The figure has been revised as requested.




Number: 1 Author: CDurham Subject: Callout Date: 1/29/2024 2:49:50 PM


[Label Street](#)

 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:42:39 AM
LSC Response: The figure has been revised as requested.



 Number: 3 Author: CDurham Subject: Text Box Date: 1/29/2024 3:05:40 PM

[Label Streets](#)

 Author: kdfer Subject: Sticky Note Date: 3/4/2024 10:43:02 AM

LSC Response: This figure was taken from the approved Grandview Reserve Phase 1 TIS. Key street names have been added as notes.