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Eagle Rising Preliminary Plan Transportation Memorandum (LSC #S224260) July 6, 2022

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.

Signature needed

_____ Date

Eagle Rising Preliminary Plan

Traffic Technical Memorandum

My Pad, Inc. | Developer
Attn: Mr. Stephen Jacobs
Casas Limited Partnership #4
P.O. Box 2076
Colorado Springs, CO 80901-0276

JULY 6, 2022

LSC Transportation Consultants
Prepared by: Kirstin D. Ferrin, P.E.
Reviewed by: Jeffrey C. Hodsdon, P.E.

LSC #S224260



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Attn: Mr. Stephen Jacobs
Casas Limited Partnership #4
P.O. Box 2076
Colorado Springs, CO 80901-0276

RE: Eagle Rising Preliminary Plan
Traffic Technical Memorandum
El Paso County, Colorado
LSC #S224260

Dear Mr. Jacobs:

In response to your request, we have prepared this traffic technical memorandum for the proposed Eagle Rising Preliminary Plan in El Paso County, Colorado. The site, shown in Figure 1, is located generally east of Black Forest Road and north of the future Briargate Parkway. The site is planned to contain 17 lots for single-family homes (15 lots for new homes and two lots for existing homes). Access to the site is planned via extensions of Kurie Road and Eagle Wing Drive.

REPORT CONTENTS

The preparation of this report included the following:

- A list of traffic reports completed by LSC Transportation Consultants, Inc. for other area developments in the vicinity of the site;
- A summary of the proposed land use and access plan;
- The existing roadway and traffic conditions in the site's vicinity, including the roadway widths, surface conditions, lane geometries, traffic controls, and posted speed limits;
- Estimates of projected short-term and long-term traffic volumes;
- The projected average weekday and peak-hour vehicle trips to be generated by the proposed development;
- The assignment of the projected site-generated traffic volumes to the area roadways;
- The projected short-term and long-term average weekday total traffic volumes on the area roadways;
- The recommended street classifications and roadway surfaces for the internal streets within the proposed development;

- 2040 roadway improvement projects within the study area; and
- The project's obligation to the County roadway improvement fee program.

RECENT TRAFFIC REPORTS

A list of other traffic studies in the area of study completed within the past five years (that LSC is aware of) is attached for reference. This study accounts for the land use, trip generation, and the roadway network included in these studies.

CURRENTLY PROPOSED LAND USE AND ACCESS

Land Use and Vehicle Access

The 70.8-acre site currently has two single-family homes. Eagle Wing Estates is located just west of the site and the Highland Park residential development is located south of the site. The Park Forest Estates subdivision exists north of the site.

The Preliminary Plan shows the site subdivided into lots for 17 single-family homes (including lots for the existing homes). The plan is shown in Figure 2.

One of the existing homes and twelve of the proposed homes would have access to an extension of Eagle Wing Drive (as a private, gravel roadway) and one of the existing homes and three proposed homes would have access via a short extension of Kurie Road (The plan shows a proposed relocation of the existing cul-de-sac on Kurie Road to the south – just south of the property line).

Project Phasing

The project will include a first phase (Filing No. 1) and “future development” (future phase(s)). Filing No. 1 is being submitted concurrent with the Preliminary Plan. Please refer to the attached Copy of the Preliminary Plan and the Filing No. 1 exhibit, for reference. A separate LSC memo has also been prepared for inclusion in the Filing No. 1 application. Filing 1 will include eight lots – two will be for the existing dwelling units and six will be lots for new homes. Please refer to the LSC memo for Filing 1 for details.

Sight Distance Analysis

No new access points to Black Forest Road are proposed as part of the currently proposed preliminary plan.

Pedestrian and Bicycle Access/Multimodal Options

This is planned as a rural subdivision and it is surrounded by rural subdivisions. Sidewalks are not required along the roadways in rural subdivisions and generally bicycles are accommodated on the local roadways.

There are currently no sidewalks or bike lanes/shoulders along Black Forest Road. The Wolf Ranch development west of Black Forest Road is progressing to the east and will likely be developed in the short term. Pedestrian facilities and connections will become available in the future west of Black Forest Road. The Briargate/Stapleton corridor is currently under study.

The closest existing school, Legacy Peak Elementary School, is located southwest of the intersection of Black Forest Road and Research Parkway about one and a half miles from the site. Bussing will be necessary for this subdivision and is likely already in place for the adjacent Eagle Wing subdivision.

There is a Park & Ride facility located about two miles to the south on the northwest corner of Woodmen and Black Forest Road.

EXISTING ROAD AND TRAFFIC CONDITIONS

The adjacent streets are shown in Figure 1 and are described below. Copies of the *2016 El Paso County Major Transportation Corridors Plan (MTCP)*, *2040 Roadway Plan*, and *2016 MTCP 2060 Corridor Preservation Plan* with the site location identified on each of them have been attached to this report.

Black Forest Road is generally a paved two-lane rural roadway that begins just south of Woodmen Road and extends north, ultimately terminating at County Line Road. Black Forest Road is classified as a Principal Arterial between Research Parkway and Briargate Parkway and a Minor Arterial north of Briargate Parkway. South of Vollmer Road, Black Forest Road has two through lanes in each direction and a posted speed limit of 45 miles per hour (mph). Black Forest Road narrows to one through lane in each direction at Vollmer Road. Long-range transportation plans show Black Forest Road as a four-lane arterial.

Briargate Parkway currently extends east from Interstate 25 to Wolf Lake Drive located within the Wolf Ranch Master Plan area. This existing section is classified as a six-lane, Principal Arterial on the City of Colorado Springs' *Major Thoroughfare Plan (MTP)*. Currently there is also a short section of Briargate Parkway from Black Forest Road to Rising Eagle Place. This section of Briargate is about 25 feet wide and has a posted speed limit of 25 mph. Briargate Parkway is planned to be extended to Black Forest Road in the short-term future and extended east of Black Forest Road to connect with Stapleton Road in unincorporated El Paso County by 2040, per the *2016 El Paso County Major Transportation Corridors Plan (MTCP) 2040 Roadway Plan*. The Briargate/Stapleton corridor east of Black Forest Road is currently under study.

Kurie Road is a two-lane gravel road that extends south from Tobin Road to the north edge of the Eagle Rising site. The Preliminary Plan shows proposed ROW to allow for the proposed short extension and platting of a relocated cul-de-sac bulb just south of the property line. This would allow for the proposed extension of Kurie Road to just inside the site and for a new roadway termination in a publicly-owned and maintained gravel-surfaced cul-de-sac to serve four proposed lots depicted on the Preliminary Plan within Eagle Rising.

Kurie Road will continue to end in a cul-de-sac just south of the property line. It will not be extended through the site as a continuous roadway connection to either Eagle Wing Drive or Briargate Parkway. Park Forest Estates (north of the site) does not need a through road connection to the south as there are multiple roadway connections to Black Forest Road to the west and Burgess Road to the north. Also, there is the potential for a future connection to Vollmer Road via Wildflower Road in the future. Eagle Wing Subdivision also does not need a road connection through this site, as there are multiple access points to the adjacent arterial roadways.

Eagle Wing Drive is a paved two-lane residential street that extends from Black Forest Road to the site boundary. The intersection of Eagle Wing Drive and Black Forest Road is restricted to right-in/right-out only. Eagle Wing Drive is planned to be extended east and terminate in a cul-de-sac to serve 13 of the proposed lots and the existing home within Eagle Rising. This new road, Eagle Wing View, will be gravel-surfaced, privately owned, and maintained by the homeowner's association (HOA).

deviation request
required (2.2.7.B.1)

Rising Eagle Place is a paved two-lane residential street that extends north from the current terminus of Briargate Parkway to Eagle Wing Drive. Once Briargate Parkway is extended east to Vollmer Road, the intersection of Briargate Parkway and Rising Eagle Place may be restricted to a three-quarter-movement or right-in/right-out only intersection. The future intersection configuration is likely to be determined with the Stapleton corridor study (PPRTA/EPC).

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the adjacent streets without consideration of the proposed development's trip generation. It includes through traffic and traffic generated by adjacent developments but assumes zero traffic generated by the site. Background traffic assumes adjacent street extensions and the proposed new subdivision streets are in place but does not include trips to be added by this project.

Short-term background traffic is shown in Figure 3. The short-term background traffic volume assumes Briargate Parkway not yet extended east of Rising Eagle Place.

Background traffic for the long term (2040) is shown in Figures 4a and 4b. Background traffic volumes are estimates by LSC, based on volumes shown in the El Paso County 2040 *MTCP* on work completed for other area developments. Long-term background traffic on Briargate

Parkway assumes the completed roadway east and west of the site. The volumes shown in Figure 4a assume the intersection of Briargate/Rising Eagle will be restricted to right-in/right-out only once Briargate Parkway is extended east and constructed to its final cross section. The volumes shown in Figure 4b assume the intersection of Briargate/Rising Eagle will be restricted to three-quarter movement (left-in/right-in/right-out only). The future intersection configuration is likely to be determined with the Stapleton corridor study (PPRTA/EPC).

TRIP GENERATION

The site-generated vehicle trips were estimated using the nationally published trip-generation rates from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). Table 1 shows the trip-generation estimates.

Eagle Rising is projected to generate about 141 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 three vehicles would enter and eight 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 nine vehicles would enter and five vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of site-generated traffic on the adjacent roads is an important factor in the determination of the traffic impacts of the site. The specific short-term and long-term distribution estimates for the site-generated traffic are shown in Figure 5. The estimates are based on the following factors: the location of the site with respect to area residential, employment, commercial, and activity centers and the balance of the Colorado Springs area; the land uses proposed for the site; the proposed access system for the site; the roadway system serving the site; and future traffic patterns as indicated by the Wolf Ranch Master Plan Study by LSC. The short-term distribution estimates assume the existing roadway system. The long-term distribution estimates assume Briargate Parkway has been completed east and west of the site.

When the distribution percentages in Figure 5 are applied to the trip-generation estimates shown in Table 1, the site-generated traffic volumes on the adjacent streets can be determined. Figure 6 shows the short-term site-generated traffic volumes for this development. The short-term assignment assumes the existing roadway system. Figures 7a and 7b show the long-term site-generated traffic volumes for this development. The volumes shown in Figure 7a assume the intersection of Briargate/Rising Eagle will be restricted to right-in/right-out only once Briargate Parkway is extended east and constructed to its final cross section. The volumes shown in Figure 7b assume the intersection of Briargate/Rising Eagle will be restricted to three-quarter movement (left-in/right-in/right-out only). The future intersection configuration is likely to be determined with the Stapleton corridor study (PPRTA/EPC).

TOTAL TRAFFIC

The short-term total traffic volumes are shown in Figure 8. The short-term total traffic volumes are the sum of the short-term site-generated volumes from Figure 6 plus the short-term background traffic volumes from Figure 3.

The 2040 total traffic volumes are shown in Figures 9a and 9b. The volumes shown in Figure 7a assume the intersection of Briargate/Rising Eagle will be restricted to right-in/right-out only once Briargate Parkway is extended east and constructed to its final cross section. The volumes shown in Figure 7b assume the intersection of Briargate/Rising Eagle will be restricted to three-quarter movement (left-in/right-in/right-out only). The 2040 total traffic volumes are the sum of the long-term site-generated traffic volumes from Figures 7a and 7b, plus the 2040 background traffic volumes from Figures 4a and 4b.

SUBDIVISION ROADWAY CLASSIFICATIONS

Figure 10 shows the recommended roadway classifications and roadway surfaces for roadways within the Eagle Rising development. Figures 9a and 9b show a comparison of the projected average weekday traffic volumes on key street segments and the design-average-day traffic volumes from Tables 2-5 and 2-6 from the *El Paso County Engineering Criteria Manual*.

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:

- C11: Black Forest Road, from Hodgen Road to Stapleton Drive [Briargate Parkway], as a 2-Lane Minor Arterial.
- U11: Black Forest Road, from Stapleton Drive [Briargate Parkway] to 1300 feet south of Silver Pond Heights, as a 4-Lane Minor Arterial.
- N5 Stapleton Drive [Briargate Parkway], from Towner Road to Black Forest Road, as a 4-Lane Urban Principal Arterial.

TRANSPORTATION IMPROVEMENT FEE PROGRAM

The applicant will be required to participate in the Countywide Transportation Improvement Fee Program. The subdivision contains two lots with existing homes and fifteen (15) lots for new homes. The applicant will opt-out of the PID options. The upfront building permit fee rate is currently \$3,830 per dwelling unit. Filing 1 will only include eight lots, but only six of those new lots will have new homes. Two of them already have existing homes. The total building permit fee amount for Filing No. 1 (6 new homes) will be \$22,980. The fee amount for the entire Preliminary Plan (15 new homes) will be \$57,450. These amounts are subject to change if the fee program building permit fee rate per dwelling unit is updated.

Add statement regarding project traffic impacts and whether there are any local improvements that need to be done based on total traffic. Decel lane on Black Forest at Briargate or SB left turn lanes on Black Forest at either Briargate or Eagle Wing?

* * * * *

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By Jeffrey C. Hodsdon, P.E.
Principal

JCH/KDF:jas

Enclosures: Table 1
Figures 1-10
MTCP Maps
Appendix Table 1

Table 1



**Table 1
Trip Generation Estimate
Eagle Rising Preliminary Plan**

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾					Total External Trips Generated				
			Average Weekday Traffic	Morning Peak Hour		Evening Peak Hour		Average Weekday Traffic	Morning Peak Hour		Evening Peak Hour	
				In	Out	In	Out		In	Out		
Existing Land Use												
210	Single-Family Detached Housing	2 DU ⁽²⁾	9.43	0.18	0.52	0.59	0.35	19	0	1	1	1
Proposed Land Uses												
210	Single-Family Detached Housing	15 DU	9.43	0.18	0.52	0.59	0.35	141	3	8	9	5

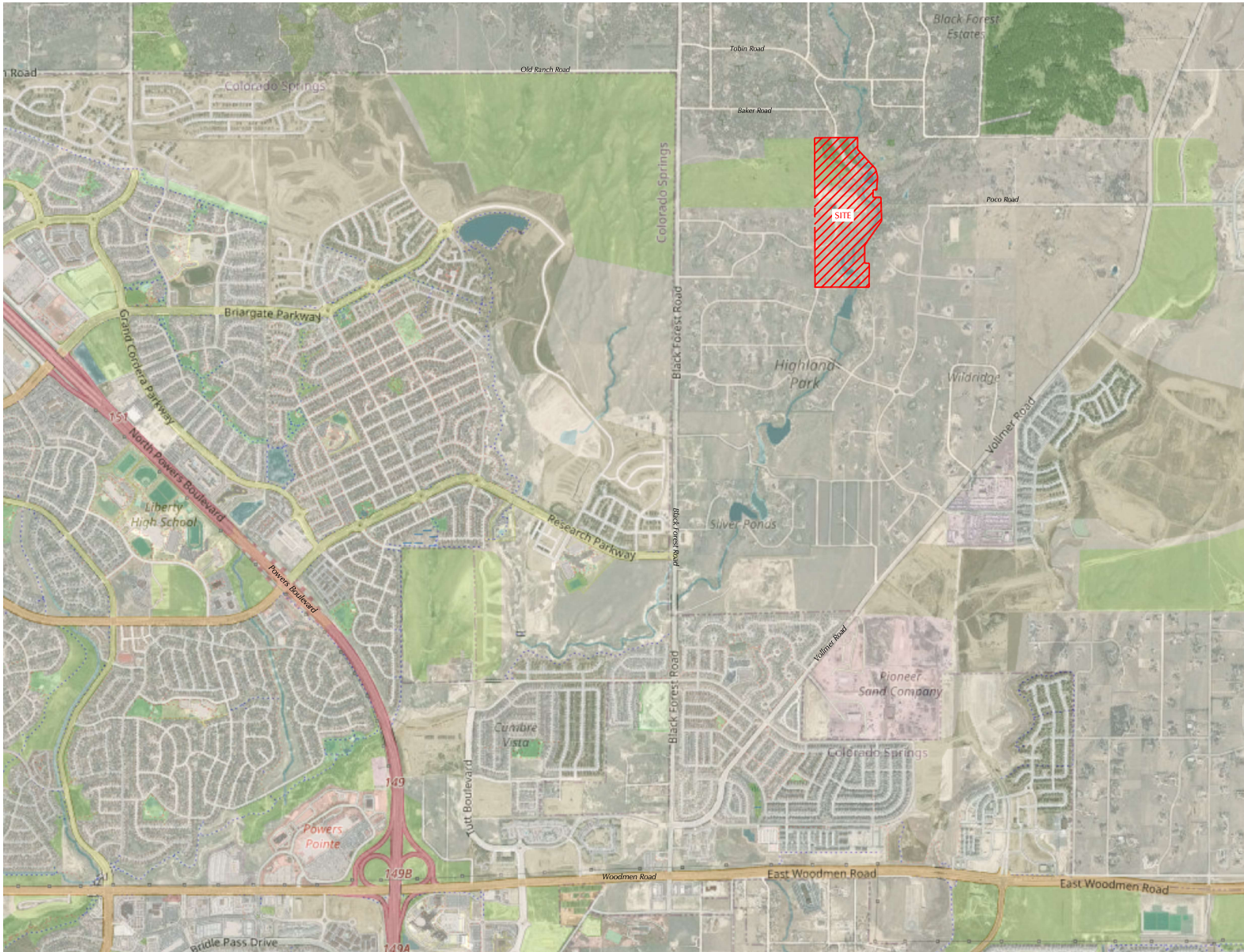
Notes:

(1) Source: "Trip Generation, 11th Edition, 2021" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

Figures 1-10





Approximate Scale
NTS

Figure 1
**Vicinity
Map**

Eagle Rising 2022 Update (LSC #S224260)

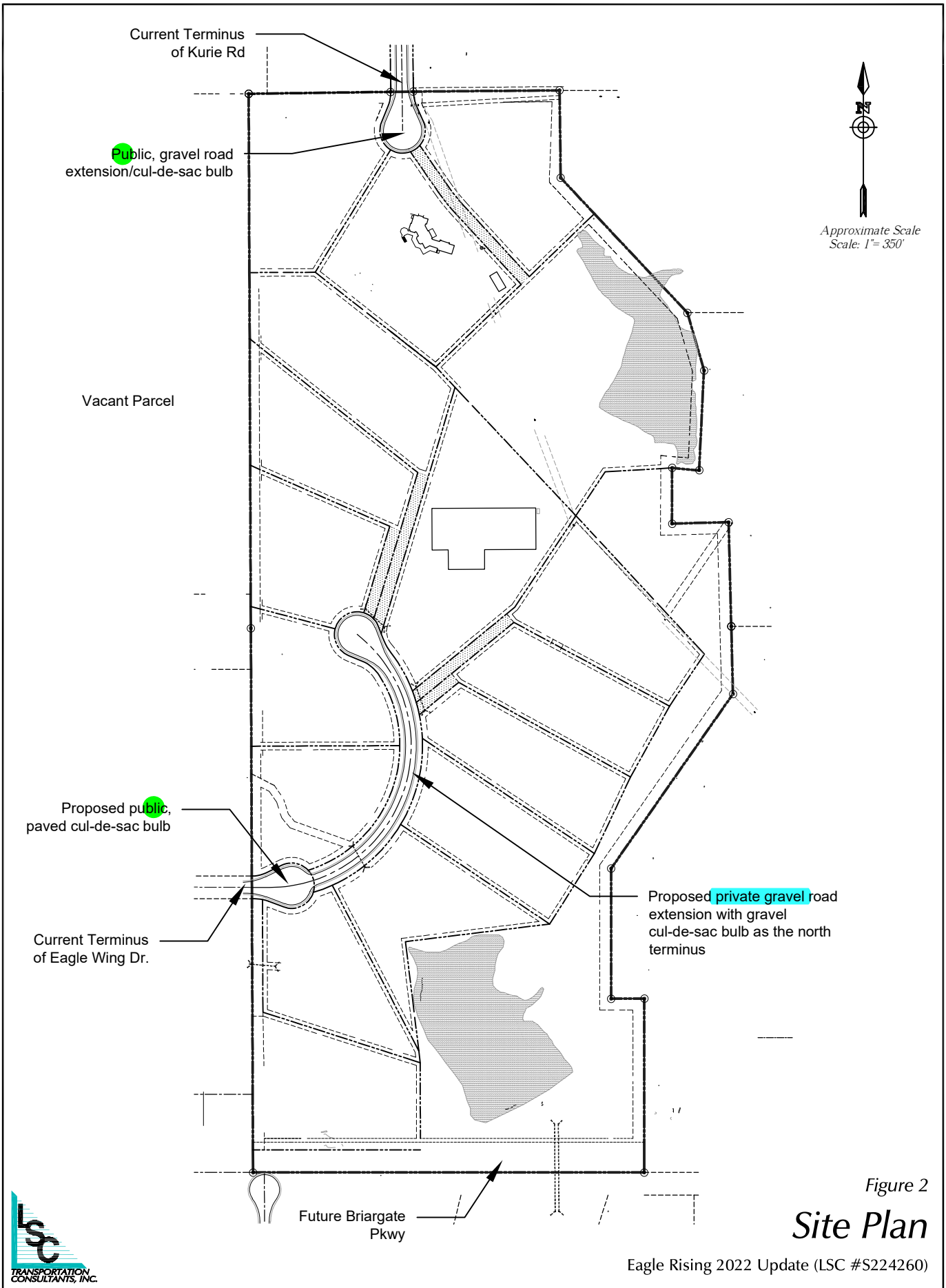


Figure 2

Site Plan

Eagle Rising 2022 Update (LSC #S224260)





Approximate Scale
Scale: 1" = 1,000'

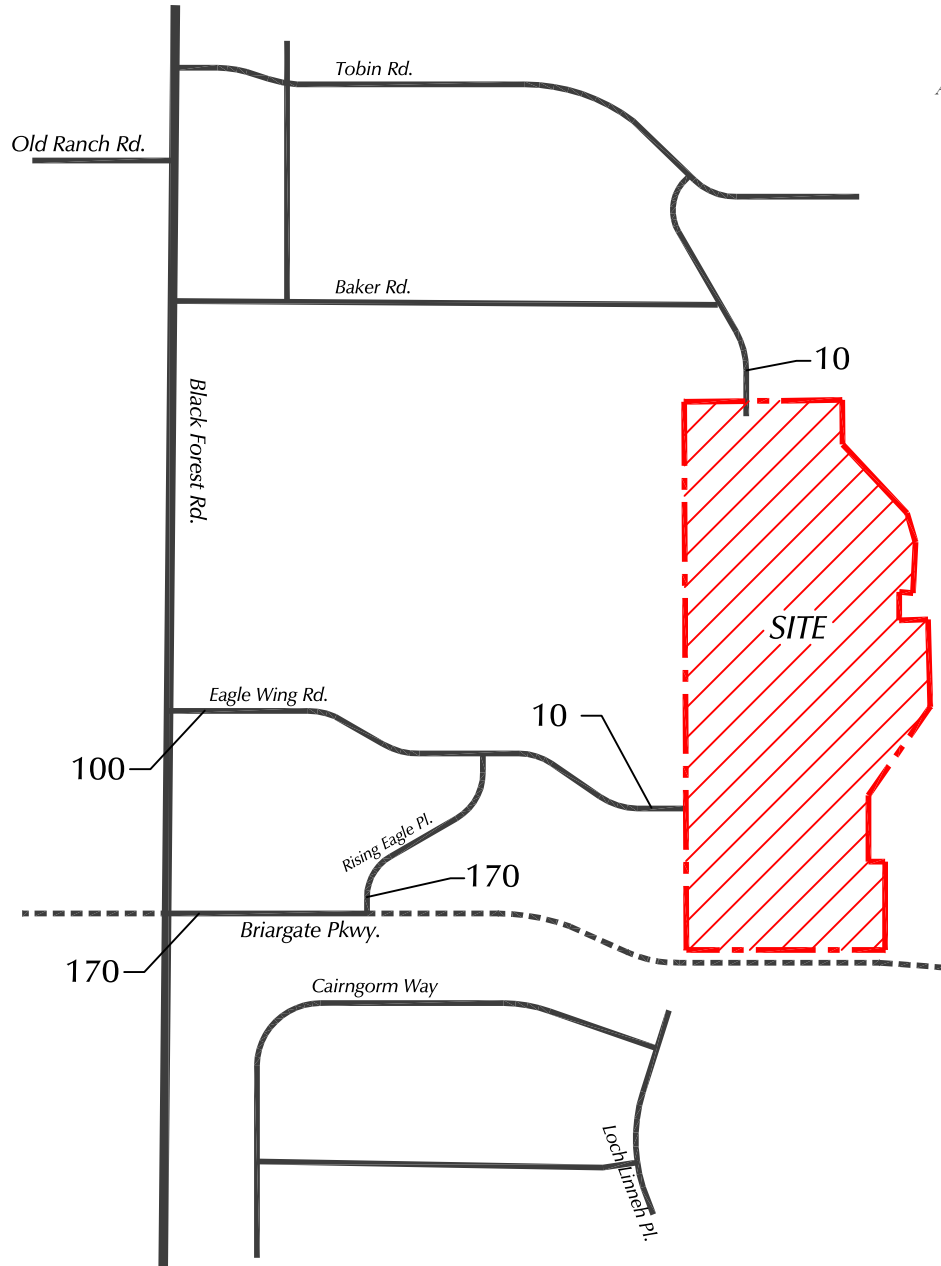


Figure 3

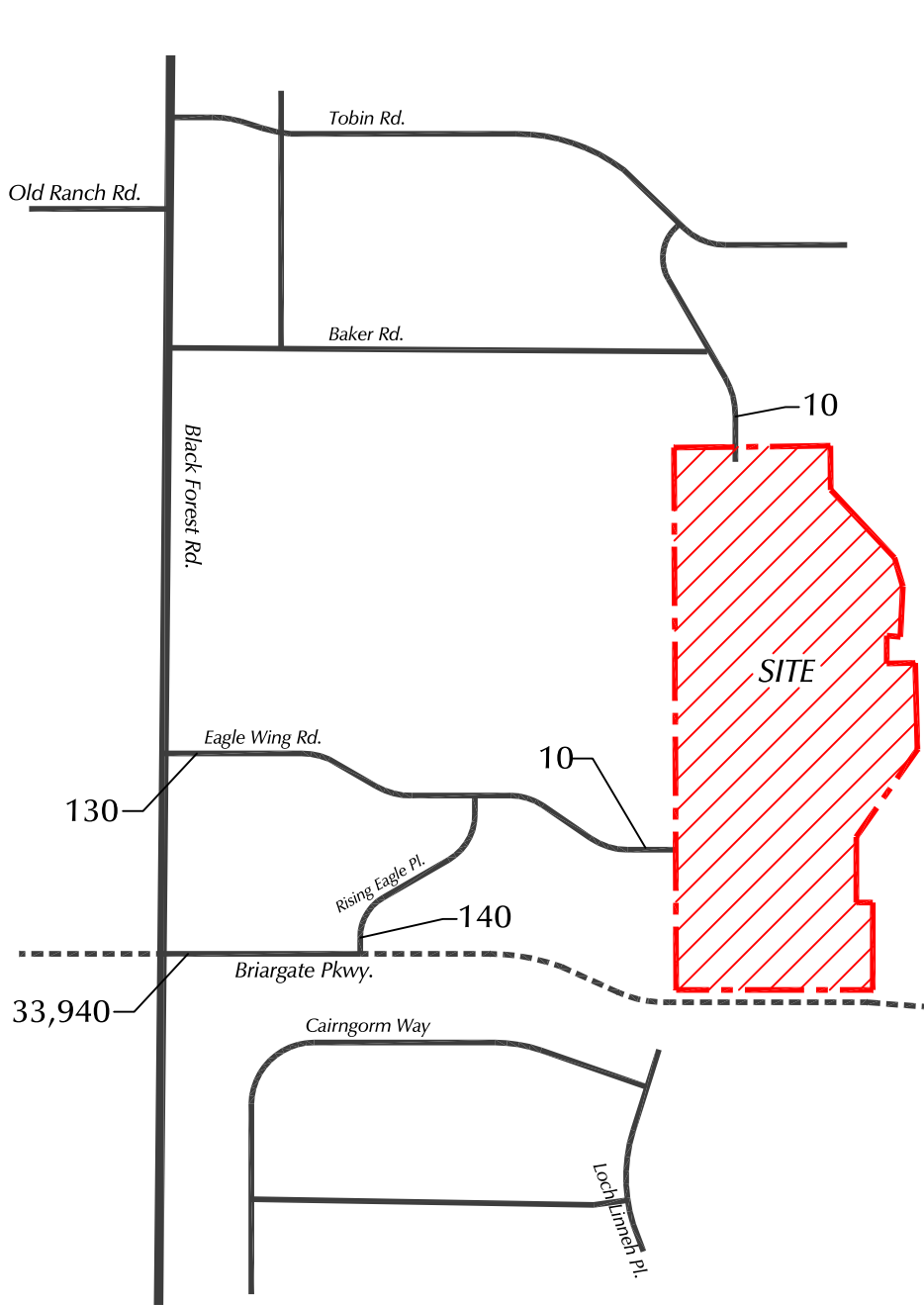
Short-Term Background Traffic

Eagle Rising 2022 Update (LSC #S224260)

LEGEND:

10,165 = Average Daily Traffic





Approximate Scale
Scale: 1"= 1,000'

*Assuming right-in/right-out only at Briargate/Rising Eagle, the future intersection configuration is likely to be determined with the Stapleton Corridor Study (PPRTA/EPC)

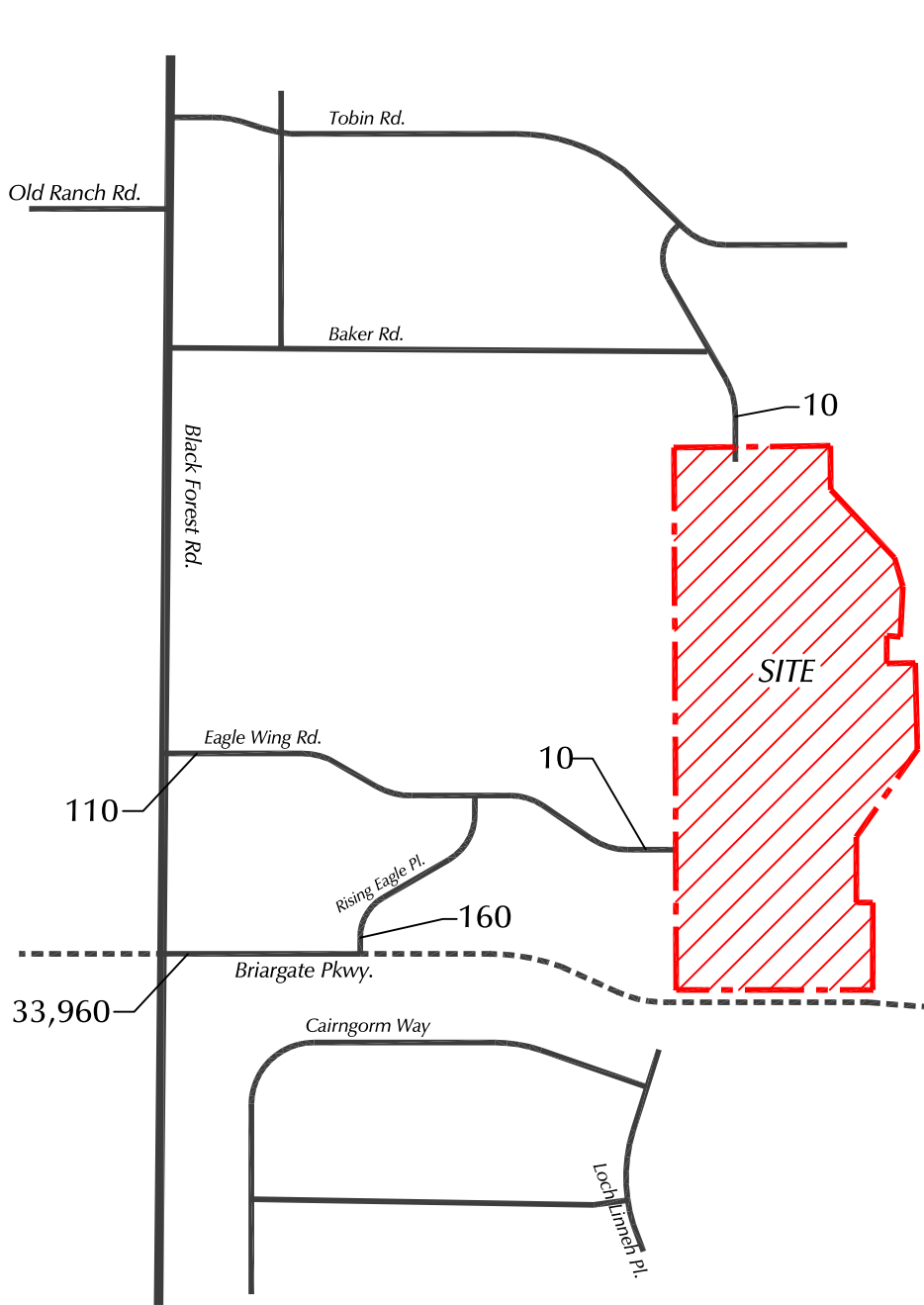
LEGEND:
10,165 = Average Daily Traffic

Figure 4a

Year 2040
Background Traffic
Right-in/Right-out Intersection Scenario*

Eagle Rising 2022 Update (LSC #S224260)





Approximate Scale
Scale: 1" = 1,000'

*Assuming a three-quarter movement (left-in/right-in/right-out) intersection at Briargate/Rising Eagle, the future intersection configuration is likely to be determined with the Stapleton Corridor Study (PPRTA/EPC)

LEGEND:
10,165 = Average Daily Traffic

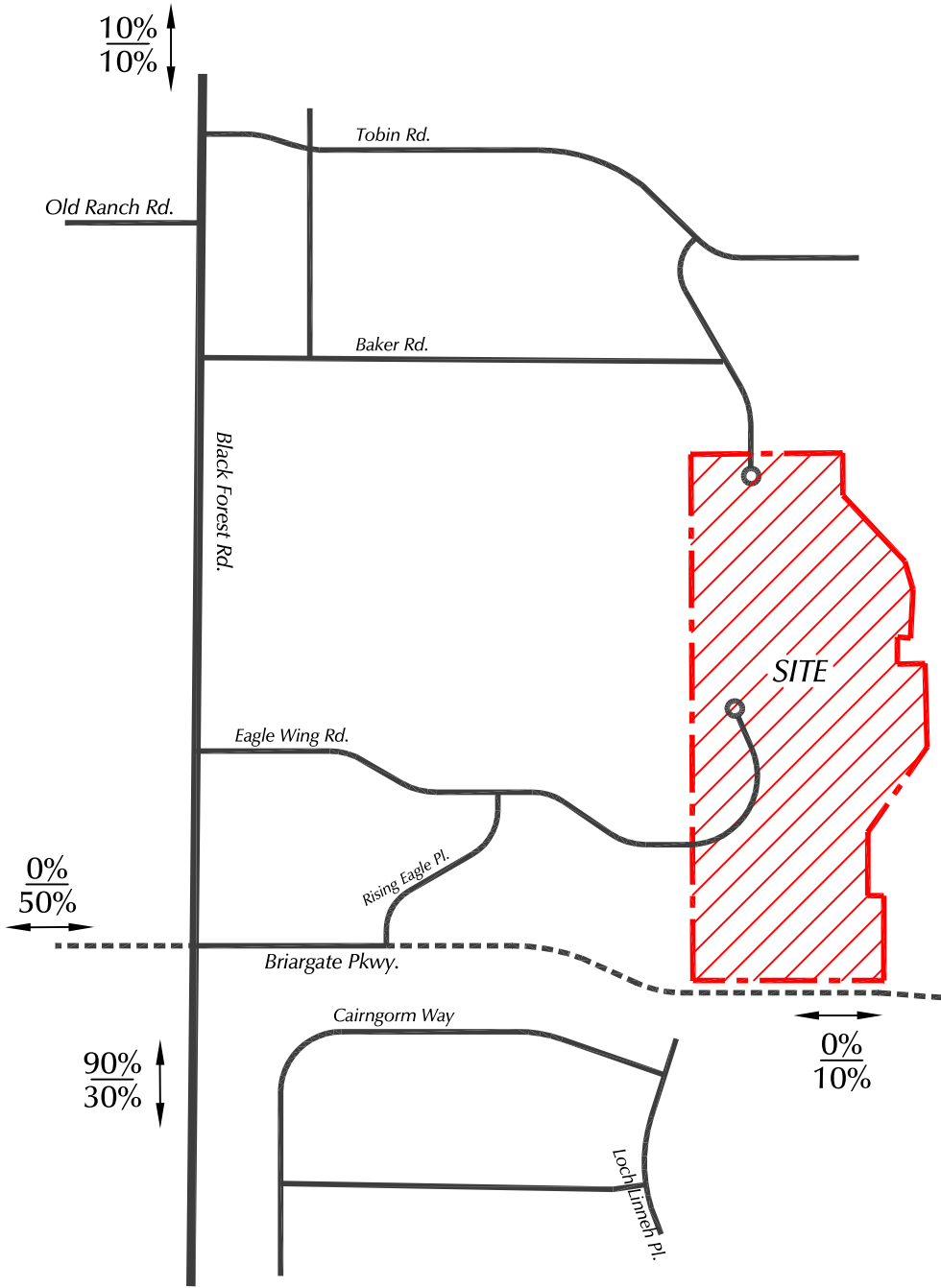
Figure 4b
**Year 2040
Background Traffic
Three-Quarter Intersection Scenario***

Eagle Rising 2022 Update (LSC #S224260)





Approximate Scale
Scale: 1" = 1,000'



LEGEND:

\longleftrightarrow 50% = Short-Term Percent Directional Distribution
 \longleftrightarrow 65% = Long-Term Percent Directional Distribution

Figure 5

Directional Distribution of Site-Generated Traffic

Eagle Rising 2022 Update (LSC #S224260)



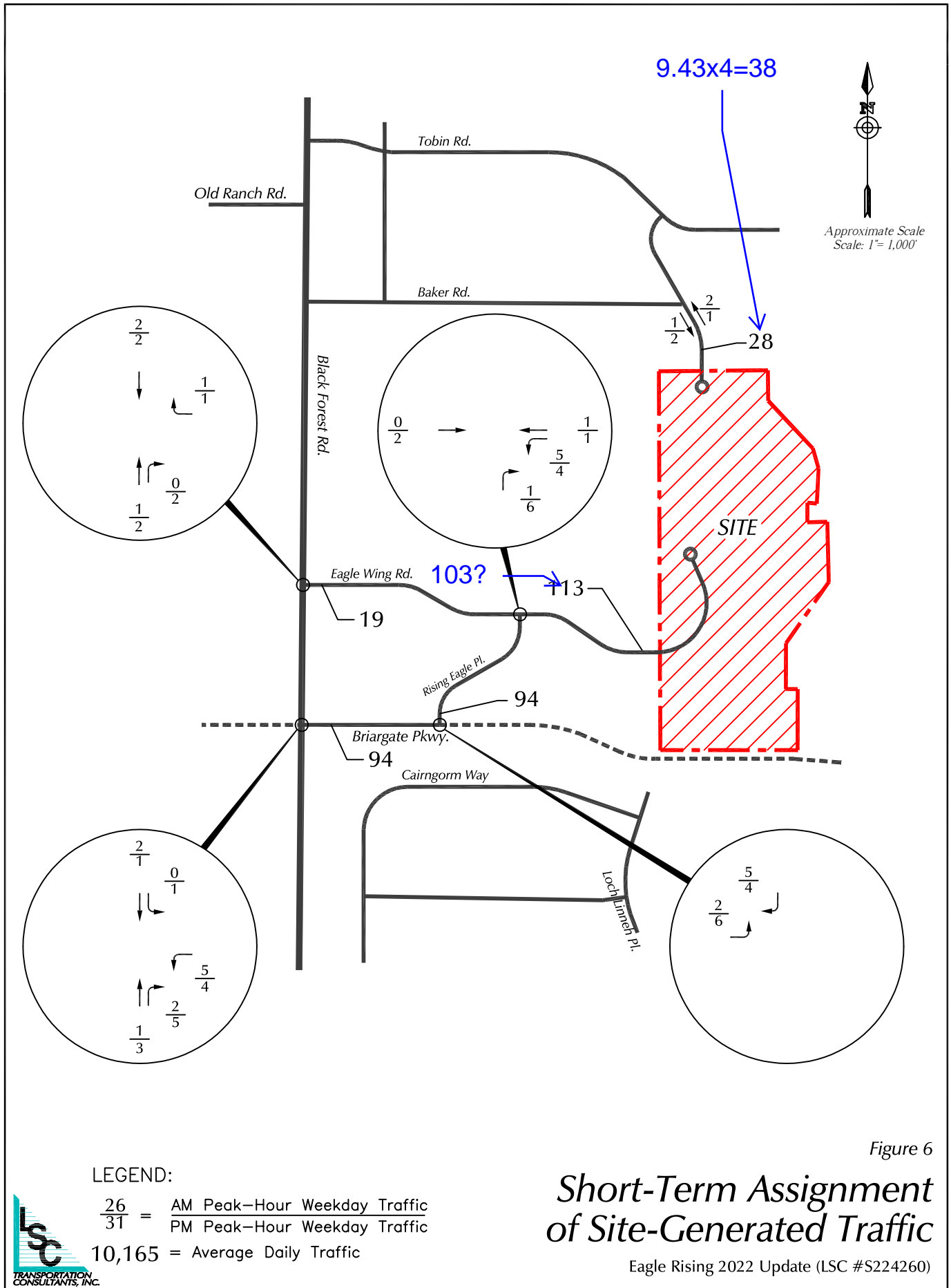


Figure 6

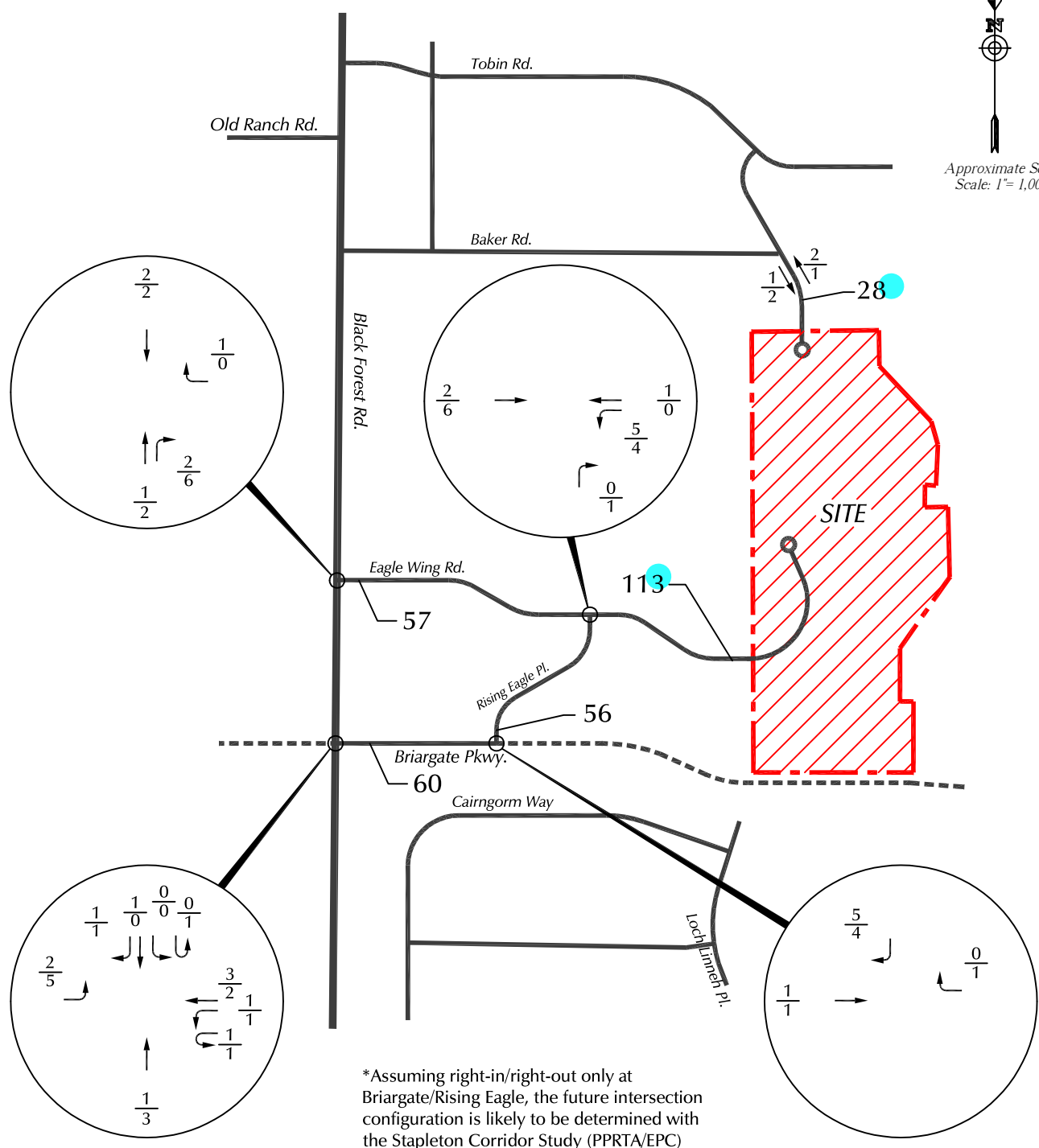
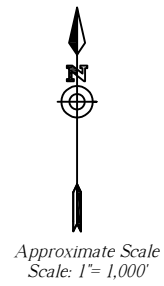
Short-Term Assignment of Site-Generated Traffic

Eagle Rising 2022 Update (LSC #S224260)

LEGEND:

- $\frac{26}{31}$ = AM Peak-Hour Weekday Traffic
- $\frac{31}{31}$ = PM Peak-Hour Weekday Traffic
- 10,165 = Average Daily Traffic





*Assuming right-in/right-out only at Briargate/Rising Eagle, the future intersection configuration is likely to be determined with the Stapleton Corridor Study (PPRTA/EPC)

LEGEND:

$\frac{26}{31}$ = AM Peak-Hour Weekday Traffic
 PM Peak-Hour Weekday Traffic

10,165 = Average Daily Traffic

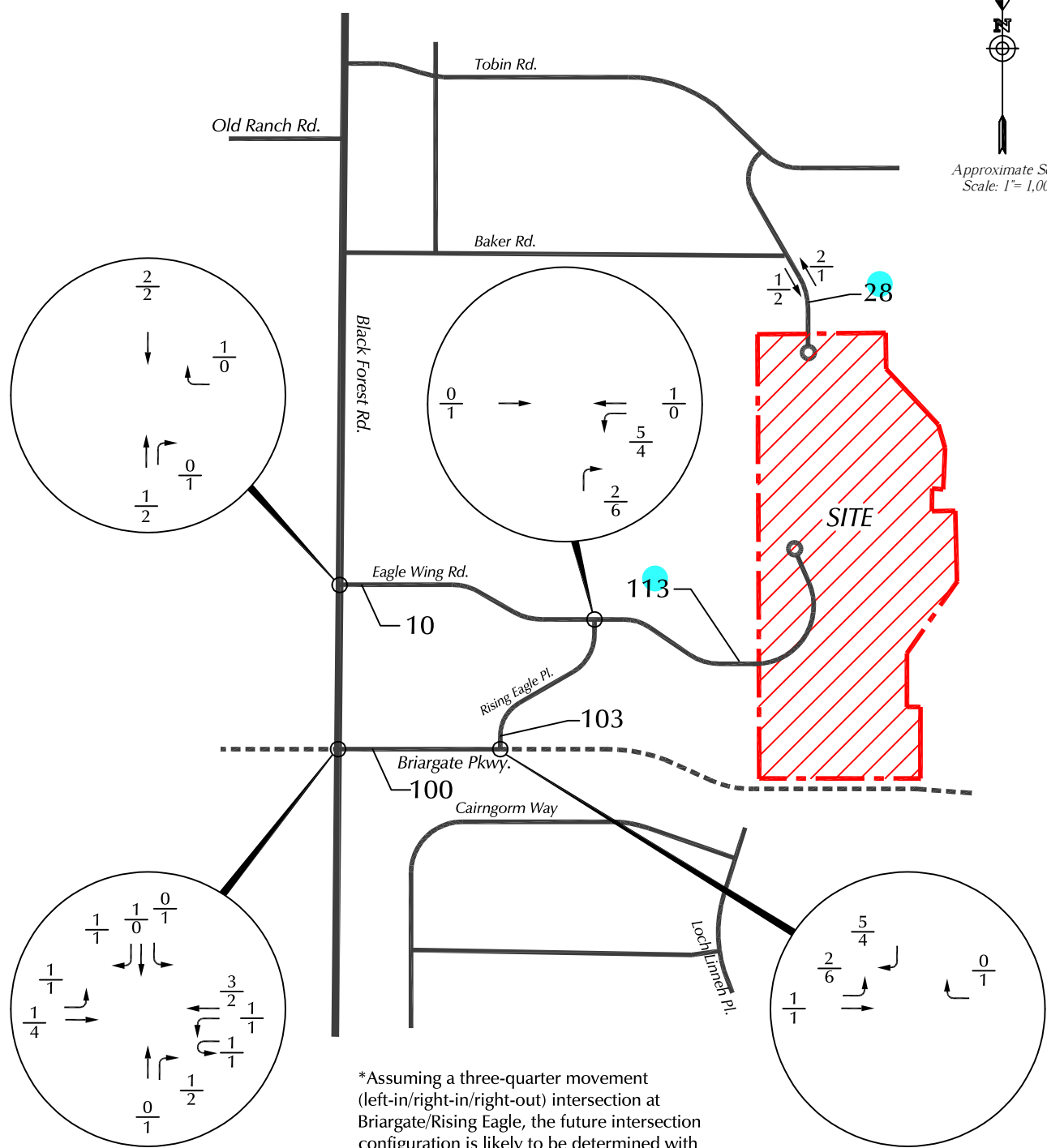
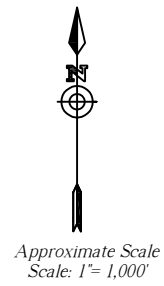
Figure 7a

Long-Term Assignment of Site-Generated Traffic

Right-in/Right-out Intersection Scenario*

Eagle Rising 2022 Update (LSC #S224260)





*Assuming a three-quarter movement (left-in/right-in/right-out) intersection at Briargate/Rising Eagle, the future intersection configuration is likely to be determined with the Stapleton Corridor Study (PPRTA/EPC)

LEGEND:

- $\frac{26}{31}$ = AM Peak-Hour Weekday Traffic
- $\frac{31}{31}$ = PM Peak-Hour Weekday Traffic
- 10,165 = Average Daily Traffic

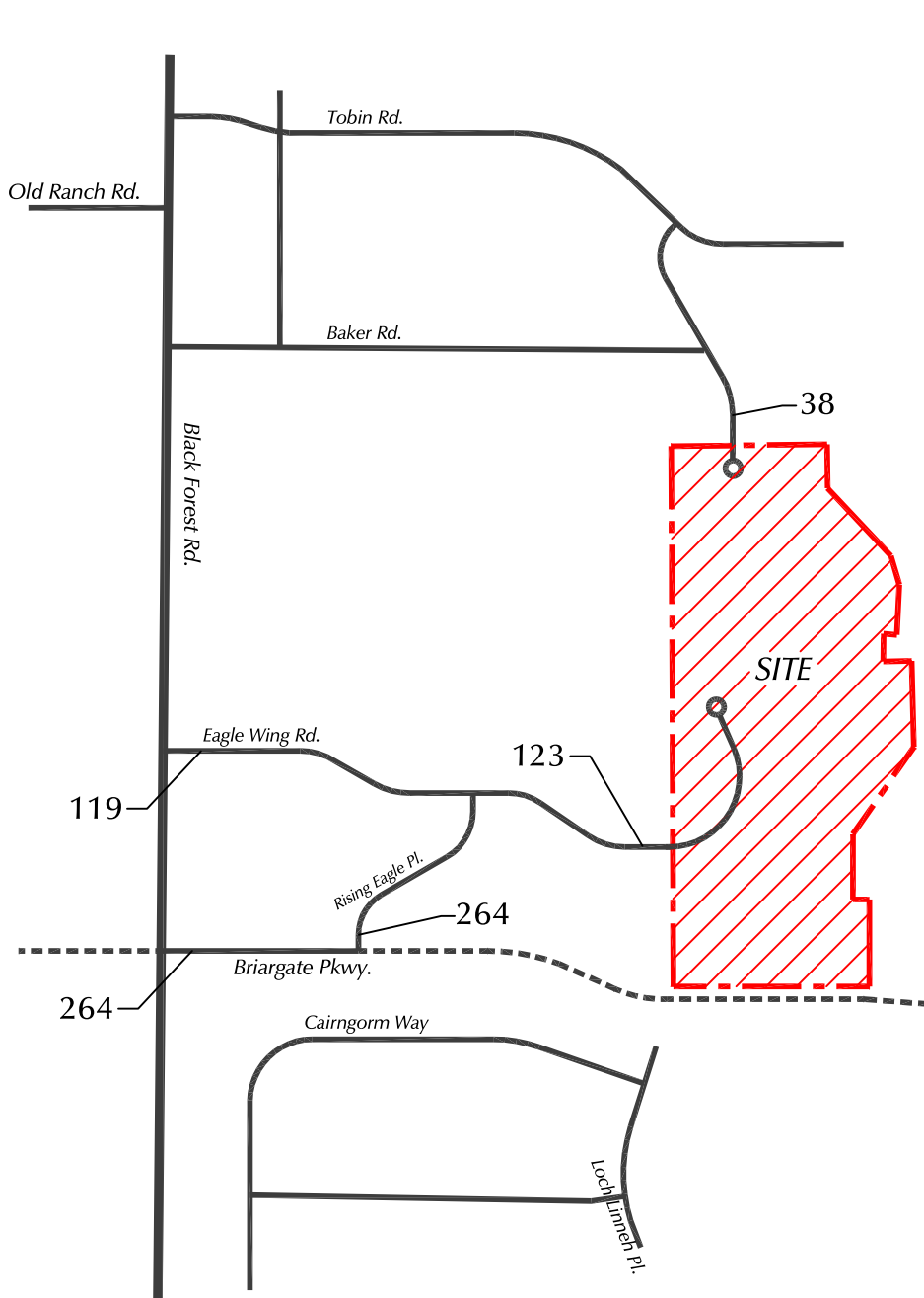
Figure 7b

Long-Term Assignment of Site-Generated Traffic

Three-quarter Intersection Scenario*

Eagle Rising 2022 Update (LSC #S224260)





Approximate Scale
Scale: 1"= 1,000'

Figure 8

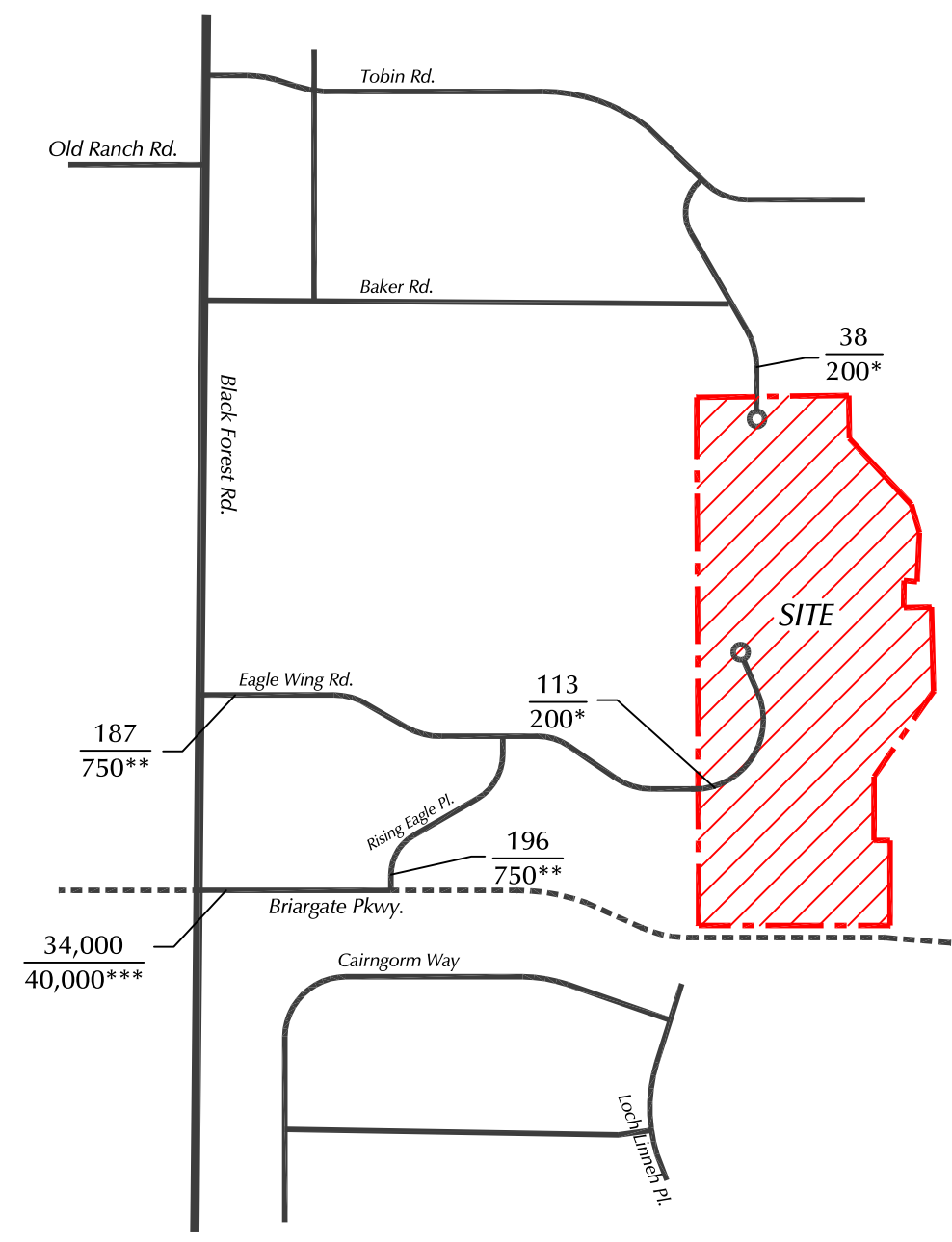
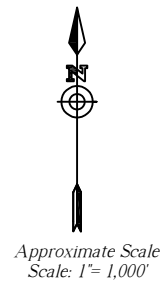
Short-Term Total Traffic

LEGEND:

10,165 = Average Daily Traffic

Eagle Rising 2022 Update (LSC #S224260)





(*Assuming right-in/right-out only at Briargate/Rising Eagle, the future intersection configuration is likely to be determined with the Stapleton Corridor Study (PPRTA/EPC)

LEGEND:

XX,XXX = Average Daily Traffic
 XX,XXX = Design ADT from Tables 2-5 and 2-6 of the El Paso County Engineering Criteria Manual

- *Rural Local Gravel
- **Rural Local
- ***4-lane Urban Principal Arterial

Figure 9a

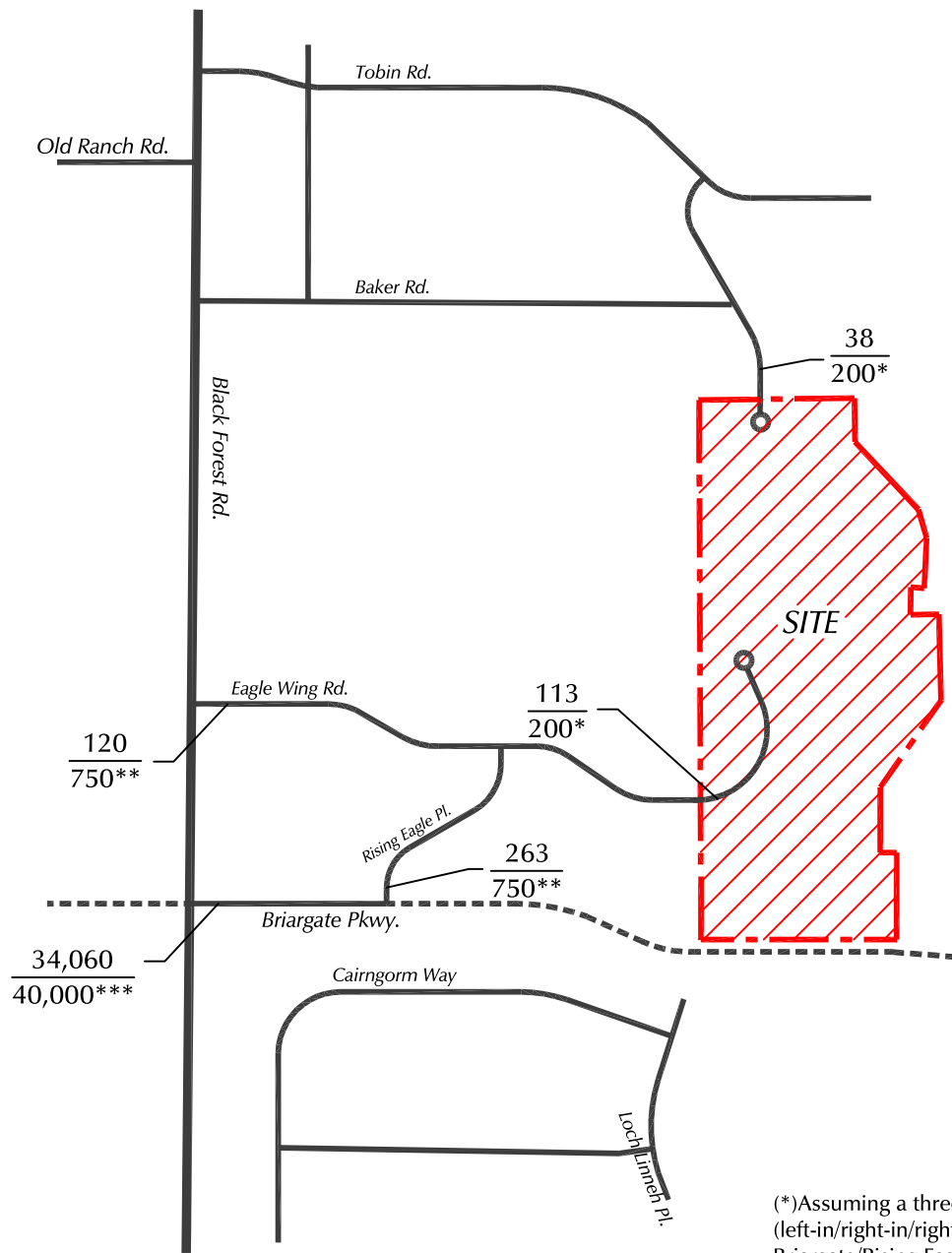
**Year 2040
 Total Traffic
 Right-in/Right-out Intersection Scenario(*)**

Eagle Rising 2022 Update (LSC #S224260)





Approximate Scale
Scale: 1"= 1,000'



(*)Assuming a three-quarter movement (left-in/right-in/right-out) intersection at Briargate/Rising Eagle, the future intersection configuration is likely to be determined with the Stapleton Corridor Study (PPRTA/EPC)

LEGEND:

$\frac{XX,XXX}{XX,XXX}$ = $\frac{\text{Average Daily Traffic}}{\text{Design ADT from Tables 2-5 and 2-6 of the El Paso County Engineering Criteria Manual}}$

- *Rural Local Gravel
- **Rural Local
- ***4-lane Urban Principal Arterial

Figure 9b

Year 2040
Total Traffic
Three-quarter Intersection Scenario(*)

Eagle Rising 2022 Update (LSC #S224260)



Public gravel road extension/cul-de-sac bulb



Approximate Scale
NTS

Private gravel road with gravel cul-de-sac bulb

Public, paved cul-de-sac bulb

(dependent on waiver approval)

show blue line



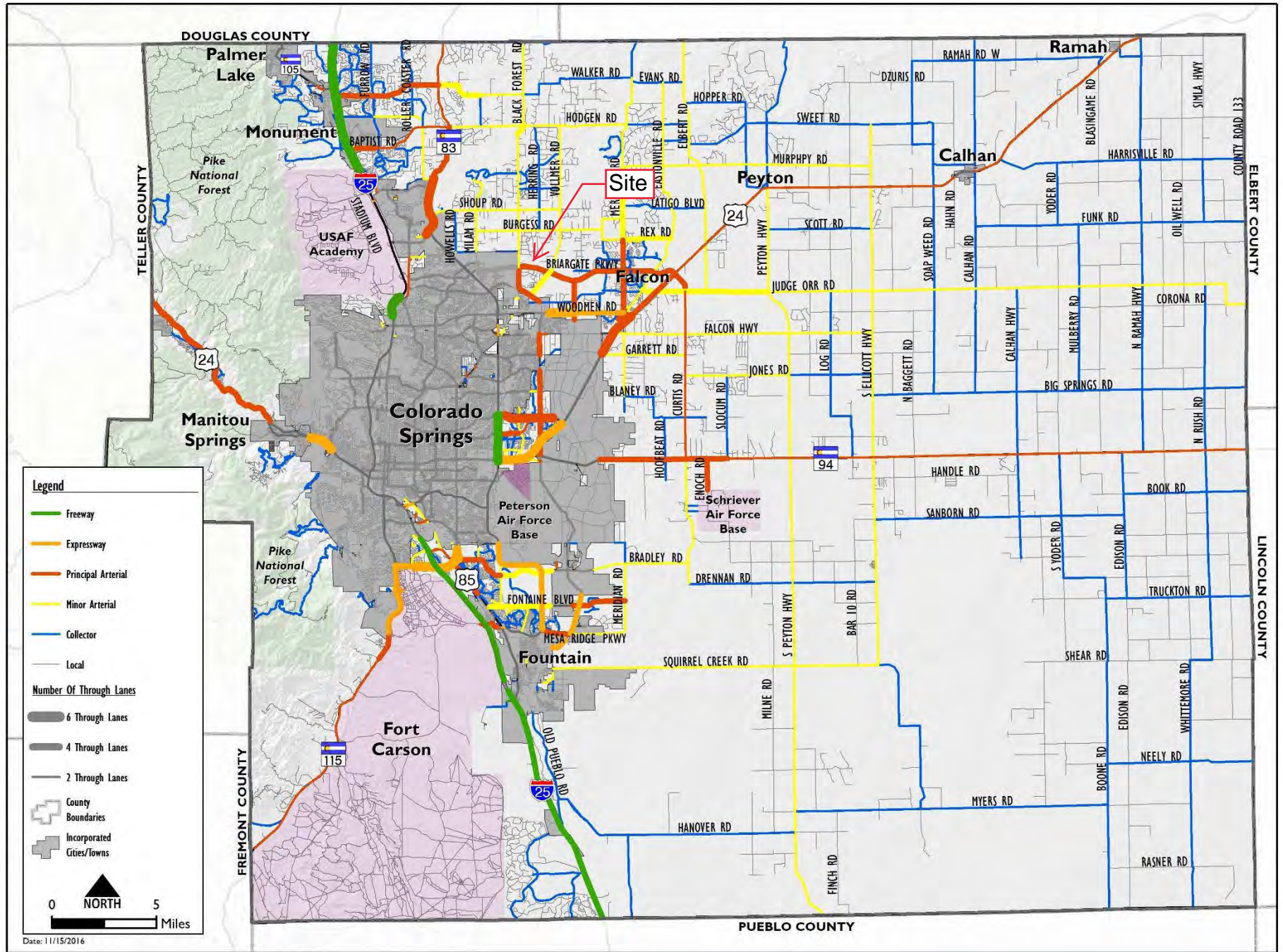
Roadway Classifications and Roadway Surface

Figure 10

Eagle Rising 2022 Update (LSC #S224260)

MTCP Maps





Map 14: 2040 Roadway Plan (Classification and Lanes)

Appendix Table 1



Appendix Table 1
Area Traffic Impact Studies by LSC
Eagle Rising

Study	Date
Sterling Ranch	
<i>Sterling Ranch TIS</i>	June 5, 2008
<i>Sterling Ranch Phase 1 TIS</i>	March 16, 2015
<i>Sterling Ranch Phases 1-3 Memorandum</i>	October 2, 2017
<i>Branding Iron at Sterling Ranch Fil No. 1 and Homestead at Sterling Ranch Fil No. 1 TIS</i>	December 19, 2017
<i>Sterling Ranch Filing No. 2 TIS</i>	April 3, 2018
<i>Sterling Ranch Phase 2 TIS</i>	December 20, 2018
<i>Homestead at Sterling Ranch Filing NO. 2</i>	May 6, 2020
<i>Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 TIS</i>	June 23, 2021
<i>Sterling Ranch Filing No. 3 Transportation Memorandum</i>	April 19, 2022
<i>Copper Chase at Sterling Ranch Transportation Memorandum</i>	May 26, 2022
<i>Homestead North Phase 1 Updated TIS</i>	January 11, 2022
<i>Homestead North Filing No. 1 Traffic Technical Memorandum</i>	February 2, 2022
<i>Homestead North Filing No. 2 Traffic Technical Memorandum</i>	June 13, 2022
Retreat at TimberRidge	
<i>Retreat at TimberRidge TIS</i>	January 25, 2018
<i>Retreat at TimberRidge Preliminary Plan Transportation Memorandum</i>	May 29, 2018
<i>Retreat at TimberRidge Filing No. 1</i>	May 3, 2020
Wolf Ranch	
<i>Wolf Ranch Master TIS</i>	April 13, 2001
<i>Wolf Ranch Master TIS Updates</i>	8/15/2005 & 7/3/2013
<i>Wolf Ranch Master Plan Amendment Trip Generation Technical Memorandum</i>	April 22, 2019
<i>Wolf Ranch Master Plan Amendment Technical Memorandum No. 3</i>	March 21, 2022
Others	
<i>Koinonia Ranch Minor Subdivision Transportation Memorandum</i>	October 21, 2021
<i>Source: LSC Transportation Consultants, Inc. (June 2022)</i>	