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Skyline at Lorson Ranch
Traffic Impact Analysis
(LSC #204250)
January 21, 2021

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.

1/27/21
Date

Skyline at Lorson Ranch

Traffic Impact Analysis

Prepared for:
The Landhuis Company
212 North Wahsatch Avenue, Suite 301
Colorado Springs, CO 80903

Contact: Mr. Jeff Mark, President

JANUARY 21, 2021

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

LSC #204250

CONTENTS

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January 21, 2021

Mr. Jeff Mark
President
The Landhuis Company
212 North Wahsatch Avenue, Suite 301
Colorado Springs, CO 80903

RE: Skyline at Lorson Ranch
El Paso County, CO
Traffic Impact Analysis
LSC #204250

Dear Mr. Mark,

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the proposed Skyline at Lorson Ranch residential development. As shown in Figure 1, the site is located within the Lorson Ranch development in El Paso County, Colorado.

REPORT CONTENTS

This report has been prepared to address the project's traffic impact at the proposed access points and adjacent intersections.

This report contains the following:

- The existing street and traffic conditions in the site's vicinity including the street widths, lane geometries, and traffic controls;
- The projected future background traffic volumes, which include estimates of traffic from other area development projects;
- The estimated average weekday and peak-hour trip generation;
- The estimated directional distribution of site-generated trips and the projected site-generated traffic volumes;
- Estimates of the resulting total traffic volumes on the adjacent streets and intersections; and
- The projected levels of service at the site access points and key area intersections;

RECENT AREA TRAFFIC STUDIES

Appendix Table 1 includes a list of other recent traffic studies conducted by LSC within the Lorson Ranch development and in the vicinity.

This site was previously included in *The Hills at Lorson Ranch Full Traffic Impact and Access Analysis* (TIA) by LSC Transportation Consultants, Inc. dated October 27, 2020 as traffic analysis zone 45. That TIA assumed this zone would be developed with 76 single-family homes.

LAND USE AND ACCESS

Land Use

Skyline at Lorson Ranch is planned to include 85 lots for single-family homes. This is nine more single-family homes than was assumed in the Hills at Lorson Ranch TIA. Figure 2 shows the proposed site plan.

Street Connections

Fontaine Boulevard and Lorson Boulevard are planned to be extended east to a new north-south collector (Walleye Drive) between as part of The Hills at Lorson Ranch. A new east-west collector (Grayling Drive) is planned to be constructed between Lamprey Drive and the future Walleye Drive as part of The Hills at Lorson Ranch. An additional section of Grayling Drive between Walleye Drive and the north boundary of Lorson Ranch is planned as part of the currently-proposed Skyline at Lorson Ranch. Two full-movement access points are proposed to Grayling Drive. Figure 2 shows the proposed access spacing.

Pedestrian and Bicycle Route Analysis

Grand Mountain K-8 School is located southwest of the site. The subdivision streets will include sidewalks and connecting streets within Lorson Ranch also have sidewalks. Trail corridors are planned along the powerline easement, the East Fork of Jimmy Camp Creek, and along Jimmy Camp Creek. Also, Marksheffel Road and Fontaine Boulevard have paved shoulders to accommodate cyclists. Lorson Boulevard has been constructed with wider travel lanes (and a striped left-turn median) to allow for shared lane use with experienced cyclists (the adjacent sidewalk will accommodate children and families, as well as cyclists less experienced at cycling in traffic).

Sight Distance Analysis

Figure 3 shows sight-distance analysis at the proposed public street intersections (note: this north street connection would become an “intersection” in the future if/when Grayling Drive is extended north (with future development to the north). Based on a design speed of 40 miles per

hour (mph) and the criteria contained in Table 2-21 of the ECM, the required intersection sight distance at the access points is 445 feet. The required stopping sight distance from ECM Table 2-17 is 305 feet. Figure 3 shows the areas between the sight distance lines and the curb line that will need to be kept free of other obstructions (such as rear privacy fencing, landscaping, and backyard/patio amenities) that would restrict the drivers' line of sight. Landscaping should be low — about 18 inches or lower in height — to the east of the passenger vehicle lines of sight shown. Please refer to ECM Sections 2.3.6.G.1 and 2. Note: If the initial intersection traffic control (with construction of this intersection) is all-way, stop-sign control (AWSC) and the AWSC remains in-place in perpetuity, the required sight distance lines of sight would be outside the lot lines.

Address the sharp curve/knuckle

STREET AND TRAFFIC CONDITIONS

Area Streets

The key area 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 them, have been attached to this report.

The Hills

- **Fontaine Boulevard** is designated as a four-lane Urban Principal Arterial east of Marksheffel Road and has been constructed as such from Marksheffel Road east to Old Glory Drive/Stingray Lane. Fontaine Boulevard has recently been constructed east of Old Glory Drive/Stingray Lane adjacent to the Lorson Ranch East development as an interim Urban Non-Residential Collector Street within 100 feet of right-of-way. As part of this development, Fontaine Boulevard will be extended east from its current terminus adjacent to the site with the same interim cross section and right-of-way. The posted speed limit on Fontaine Boulevard is 35 mph just east of (and a short distance west of) Marksheffel Road. The speed limit increases to 45 mph just east of the bridge over Jimmy Camp Creek and then decreases back to 35 mph just east of Old Glory (east)/Stingray.

- **Lorson Boulevard** currently extends east from Marksheffel Road to Lamprey Drive. Lorson Boulevard is classified as an Urban Non-Residential Collector Street (modified for a 44-foot street width, rather than the standard 52-foot street width) with an 80-foot-wide right-of-way between Marksheffel Road and Stingray Lane and as an Urban Residential Collector Street (modified for a 44-foot street width, rather than the standard 52-foot street width) with a 64- to 72-foot-wide right-of-way between Stingray Lane and Lamprey Drive. As part of this development, Lorson Boulevard will be constructed east of Lamprey Drive adjacent to the site as a standard Urban Residential Collector with a 60-foot-wide right-of-way.

- **Lamprey Drive** is an Urban Residential Collector which currently extends north from Lorson Boulevard to Shavers Drive just north of Fontaine Boulevard. Lamprey Drive is planned to be constructed east to the future Walleye Drive as part of the Hills at Lorson Ranch. The

intersection of Lamprey/Fontaine was constructed as an interim one-lane modern roundabout. This roundabout is expandable to two lanes should it be needed in the long-range (beyond 2040) future.

- **Grayling Drive** is a planned Urban Residential Collector which will extend north from Lorson Boulevard to the north boundary of the Lorson Ranch development.

TRIP GENERATION

The site-generated vehicle trips were estimated using the nationally published trip-generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 1 shows the average weekday and peak-hour trip-generation estimates. Table 2 also shows a comparison of the trip-generation estimate for this same area, assumed in the *Lorson Ranch Sketch Plan Amendment 2 Traffic Impact Analysis* by LSC dated December 17, 2019 and *The Hills at Lorson Ranch Full Traffic Impact Analysis* by LSC dated October 27, 2020.

The site is projected to generate about 802 new vehicle trips on the average weekday, with about half entering and half exiting the site. During the morning peak hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 16 vehicles would enter and 47 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 53 vehicles would enter and 31 vehicles would exit the site.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated traffic volumes on the street and roadway system serving the site is one of the most important factors in determining the site's traffic impacts. Figure 4 shows the external trip-distribution estimates (external to Lorson Ranch). The directional distribution estimates have been based on the location of the site with respect to the regional residential employment, commercial, and activity centers; the land use proposed; the access/roadway connections assumed; the roadway network; and the most recent traffic counts conducted at the intersection of Marksheffel/Fontaine. The number of external vehicle trips were based on the internal trip estimates shown in Appendix Table 2.

Figure 5 shows the site-generated traffic volume estimates, respectively. These volumes were determined by first assigning the internal vehicle trips to the street network, based on the location of the existing Grand Mountain School located northeast of the intersection of Fontaine Boulevard and Lamprey Drive and the future retail sites located near the intersection of Fontaine Boulevard and Carriage Meadows Drive.

The external vehicle trips were then assigned to the street network by applying the trip-distribution percentages (from Figure 4) to the external trip-generation estimates. The internal and external site-generated traffic volumes were then summed to determine the total site-generated traffic volumes.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the roadways without the Hills at Lorson Ranch traffic.

Short Term

The short-term (Year 2025) background traffic volumes are shown in Figure 6. The short-term background traffic includes traffic projected to be generated by buildout of the approved Lorson Ranch subdivisions including Lorson Ranch East, Ponderosa at Lorson Ranch Filing 3, Creekside at Lorson Ranch, and The Hills at Lorson Ranch, but assumes zero traffic generated by Skyline at Lorson Ranch.

2040

Figure 7 shows the projected 2040 background traffic volumes. The 2040 background traffic volumes are based on estimates of traffic projected to be generated at buildout of the Lorson Ranch Sketch Plan (excluding the traffic projected to be generated by Skyline at Lorson Ranch. Appendix Tables 2 and 3 show the trip-generation estimates for all existing and future land uses assumed to be built out by 2040 in the Lorson Ranch development. The 2040 background volumes also assume full buildout of the street network within Lorson Ranch, but assume Meridian Road has not been extended south to Fontaine Boulevard.

BUILDOUT TOTAL TRAFFIC

Figure 8 shows the short-term total traffic volumes. These volumes are the sum of the short-term background traffic volumes (from Figure 6) plus the site-generated traffic volumes (from Figure 5).

Figure 9 shows the 2040 total traffic volumes. These volumes are the sum of the 2040 background traffic volumes (from Figure 7) plus the site-generated traffic volumes (from Figure 5).

PROJECTED LEVELS OF SERVICE

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 2 shows the level of service delay ranges.

Table 2: 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 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more

(1) For unsignalized intersections if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.

The intersection of Lamprey/Fontaine and the access points to Grayling Drive have been analyzed to determine the projected levels of service for the short-term and 2040 background and total traffic volumes, based on the unsignalized method of analysis procedures outlined in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The level of service reports are attached. The results of the analysis are shown in Figures 6 through 9.

Fontaine/Lamprey

The intersection of Fontaine/Lamprey was recently constructed as a modern one-lane roundabout. All movements at this intersection are projected to operate at LOS D or better during the peak hours, based on the projected short-term and 2040 total traffic volumes.

Site Access Points

The south full-movement site access point to Grayling Drive is projected to operate at LOS B or better during the peak hours for all movements as a two-way, stop-sign-controlled intersection, based on the projected short-term and 2040 total traffic volumes.

ROADWAY CLASSIFICATIONS

Figure 10 shows the recommended street classifications for the Lorson Ranch streets.

ROADWAY IMPROVEMENT FEE

This project will be required to participate in the El Paso County Road Improvement Fee Program. The Hills at Lorson Ranch will join the ten-mil PID. The current ten-mil PID building permit fee portion associated with this option is $1,221 per single-family dwelling unit. Based on 86 lots, the total building permit fee would be $103,785. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- The site is projected to generate about 802 new vehicle trips on the average weekday, with about half entering and half exiting the site. During the morning peak hour, about 16 vehicles would enter and 47 vehicles would exit the site. During the afternoon peak hour, about 53 vehicles would enter and 31 vehicles would exit the site.

Intersection Sight Distance

- Please refer to the Sight Distance section of this report for areas of that site that need to allow for the required intersection sight distance lines of sight. See redlined exhibit

Projected Levels of Service & Intersection Traffic Control Recommendations

- The intersection of Fontaine/Lamprey was recently constructed as a modern one-lane roundabout. All movements at this intersection are projected to operate at LOS D or better during the peak hours, based on the projected short-term and 2040 total traffic volumes.

- The south full-movement site access point to Grayling Drive is projected to operate at a satisfactory level of service as a two-way, stop-sign-controlled intersection.

Street Classifications

- All of the streets within Skyline at Lorson Ranch should be classified as Urban Local. See Figure 10 for the recommended classifications of the adjacent roadways.

Street Classifications

- Based on the current ten-mil PID building permit fee, the total building permit fee would be $103,785. Note: This is based on the current rate, which is subject to change. El Paso County updates this rate periodically.

delete?

Grayling Drive Striping

- Grayling Drive potentially be striped with a single dual yellow centerline stripe instead of a center painted two-way left-turn "median" South of Lamprey drive as the through and left-turning volumes are projected to be relatively low. No striping is needed on Grayling Drive north of Lamprey Drive.

See comment letter regarding offsite improvements.

* * * * *

We trust this traffic impact analysis will assist you in gaining approval of the proposed Skyline at Lorson Ranch residential development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By_____
Kirstin D. Ferrin, P.E.
Senior Transportation Engineer

JCH:KDF:jas

Enclosures: Table 1
Figures 1-10
Appendix Tables 1-3
Level of Service Reports
MTCP Maps

Tables

TRANSPORTATION
CONSULTANTS, INC.

Table 1
Trip Generation Estimate
Skyline at Lorson Ranch

Traffic Analysis Zone	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates [1] Average Weekday Traffic	Trip Generation Rates [1] Morning Peak Hour In	Trip Generation Rates [1] Morning Peak Hour Out	Trip Generation Rates [1] Afternoon Peak Hour In	Trip Generation Rates [1] Afternoon Peak Hour Out	Total Trips Generated Average Weekday Traffic	Total Trips Generated Morning Peak Hour In	Total Trips Generated Morning Peak Hour Out	Total Trips Generated Afternoon Peak Hour In	Total Trips Generated Afternoon Peak Hour Out
Trip Generation Estimate Based on the Currently Proposed Plan													
45	210	Single-Family Detached Housing	85 DU[2]	9.44	0.19	0.56	0.62	0.37	802	16	47	53	31
Trip Generation Estimate for the Same Area From the *The Hills at Lorson Ranch Full Traffic Impact Analysis* by LSC October 26, 2020													
45	210	Single-Family Detached Housing	76 DU	9.44	0.19	0.56	0.62	0.37	717	14	42	47	28
				Change in Trip Generation Estimate					**85**	**2**	**5**	**6**	**3**
Trip Generation Estimate for the Same Area From the *Lorson Ranch Sketch Plan Amendment 2 Traffic Impact Analysis* by LSC December 17, 2018													
45	220	Multifamily Housing	123 DU	7.32	0.11	0.35	0.35	0.21	900	13	44	43	25
				Change in Trip Generation Estimate					**-98**	**3**	**4**	**10**	**6**

Notes:
(1) Source: "*Trip Generation, 10th Edition, 2017*" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling unit

Source: LSC Transportation Consultants, Inc.

Dec-20

Figures

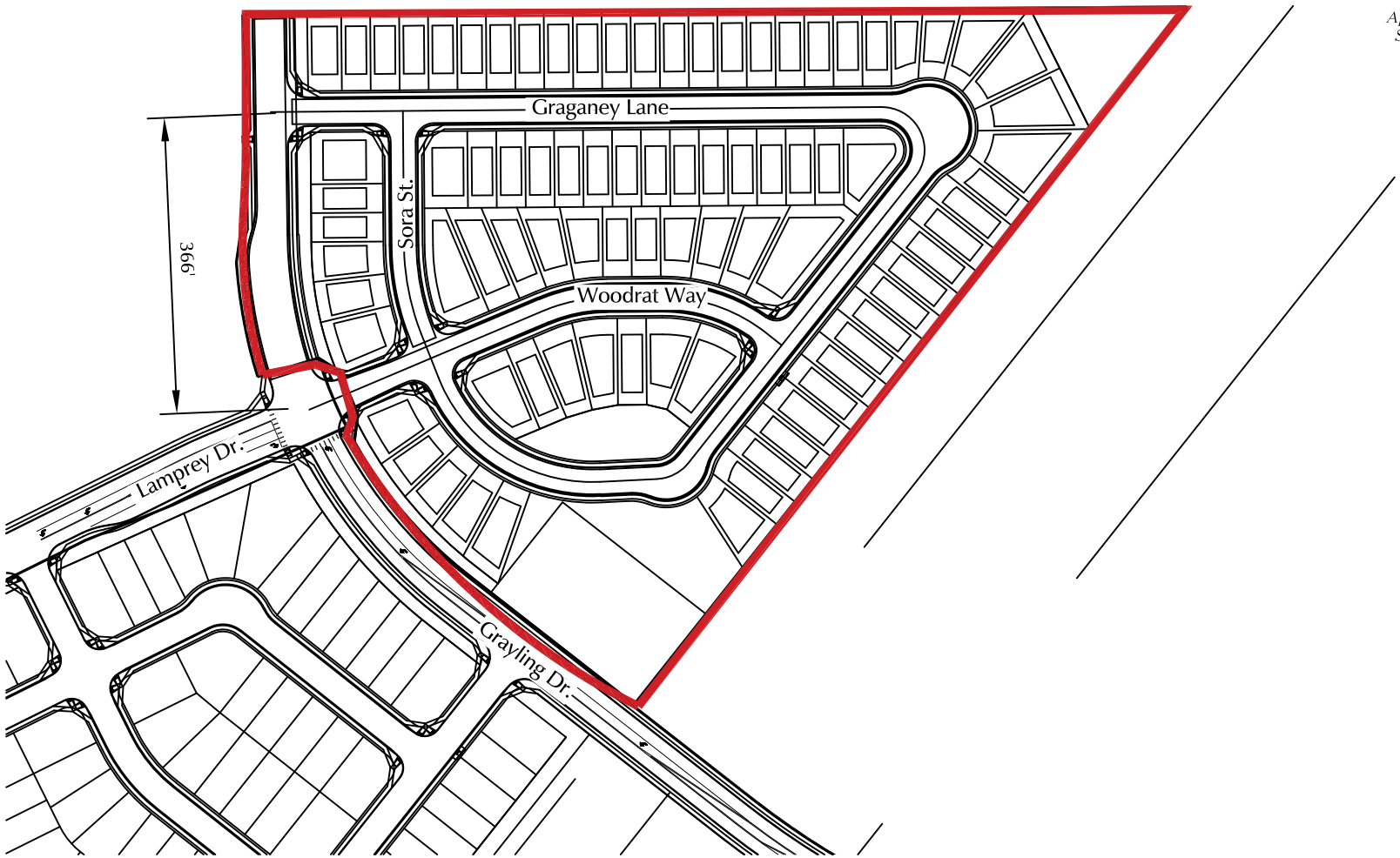
TRANSPORTATION
CONSULTANTS, INC.

Figure 1

Vicinity Map

Skyline at Lorson Ranch (LSC #204250)

LSC TRANSPORTATION CONSULTANTS, INC.



N

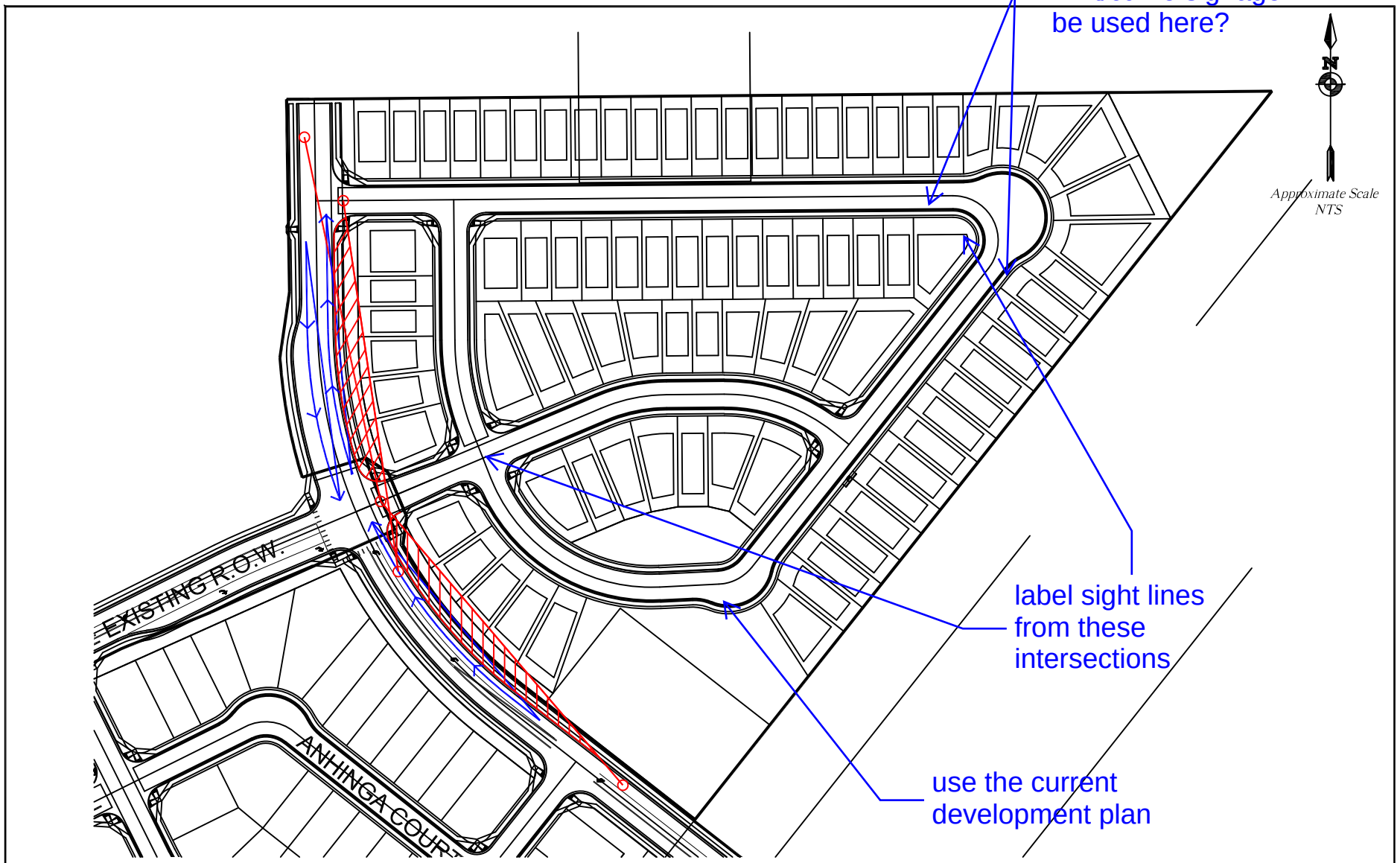
Approximate Scale
Scale: NTS

Figure 2

Site Plan

Skyline at Lorson Ranch (LSC #204250)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND:

= ECM Required intersection sight distance (445' based on a 40mph design speed from Table 2-21)

= ECM Required stopping sight distance (305' based on a 40mph design speed from Table 2-17)

= Area must be kept clear of obstructions to intersection line of sight.

TRANSPORTATION CONSULTANTS, INC.

Figure 3

Sight Distance Analysis

Skyline at Lorson Ranch (LSC #204250)

* Assumes no trip distribution east or north of the greater Lorson Ranch boundary within the 20-year horizon.

LSC TRANSPORTATION CONSULTANTS, INC.

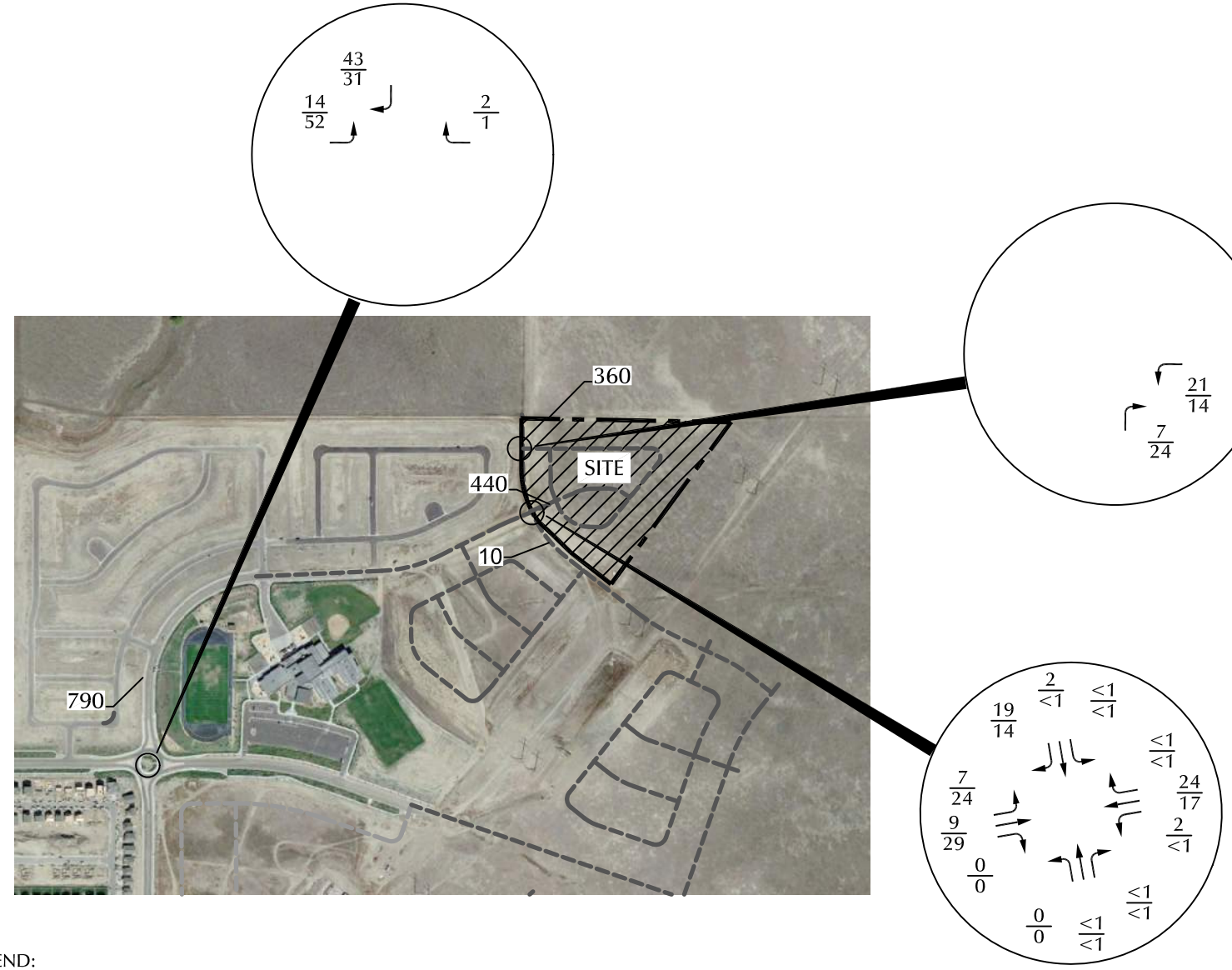
LEGEND:

XX% = Percent Directional Distribution

Figure 4

Directional Distribution of Site-Generated Traffic

Skyline at Lorson Ranch (LSC #204250)



N

Approximate Scale
Scale: NTS

LEGEND:

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

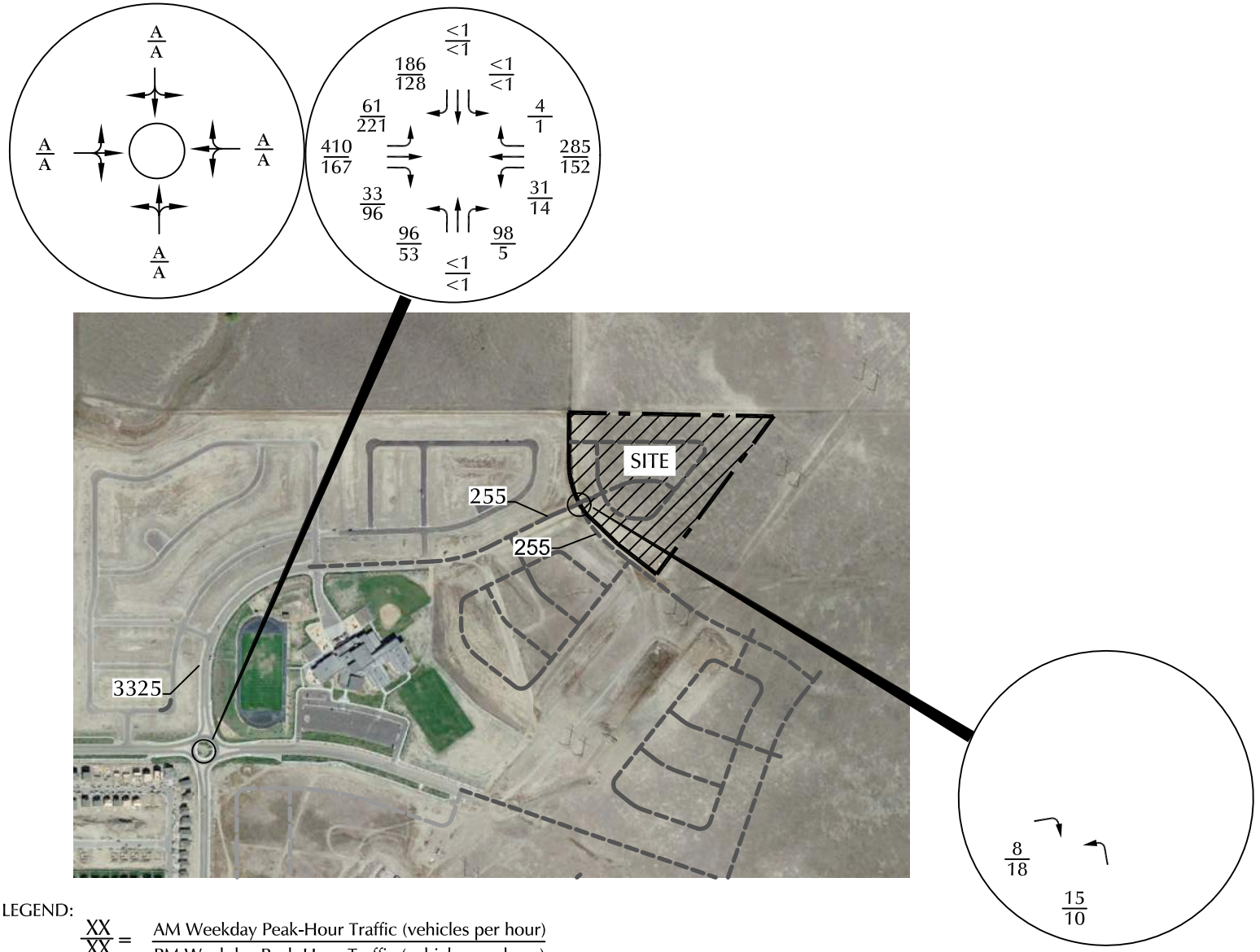
X,XXX= Annual Average Daily Traffic (vehicles per day)

TRANSPORTATION CONSULTANTS, INC.

Figure 5

Site-Generated Traffic

Skyline at Lorson Ranch (LSC #204250)



Approximate Scale
Scale: NTS

LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

X,XXX= Annual Average Daily Traffic (vehicles per day)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

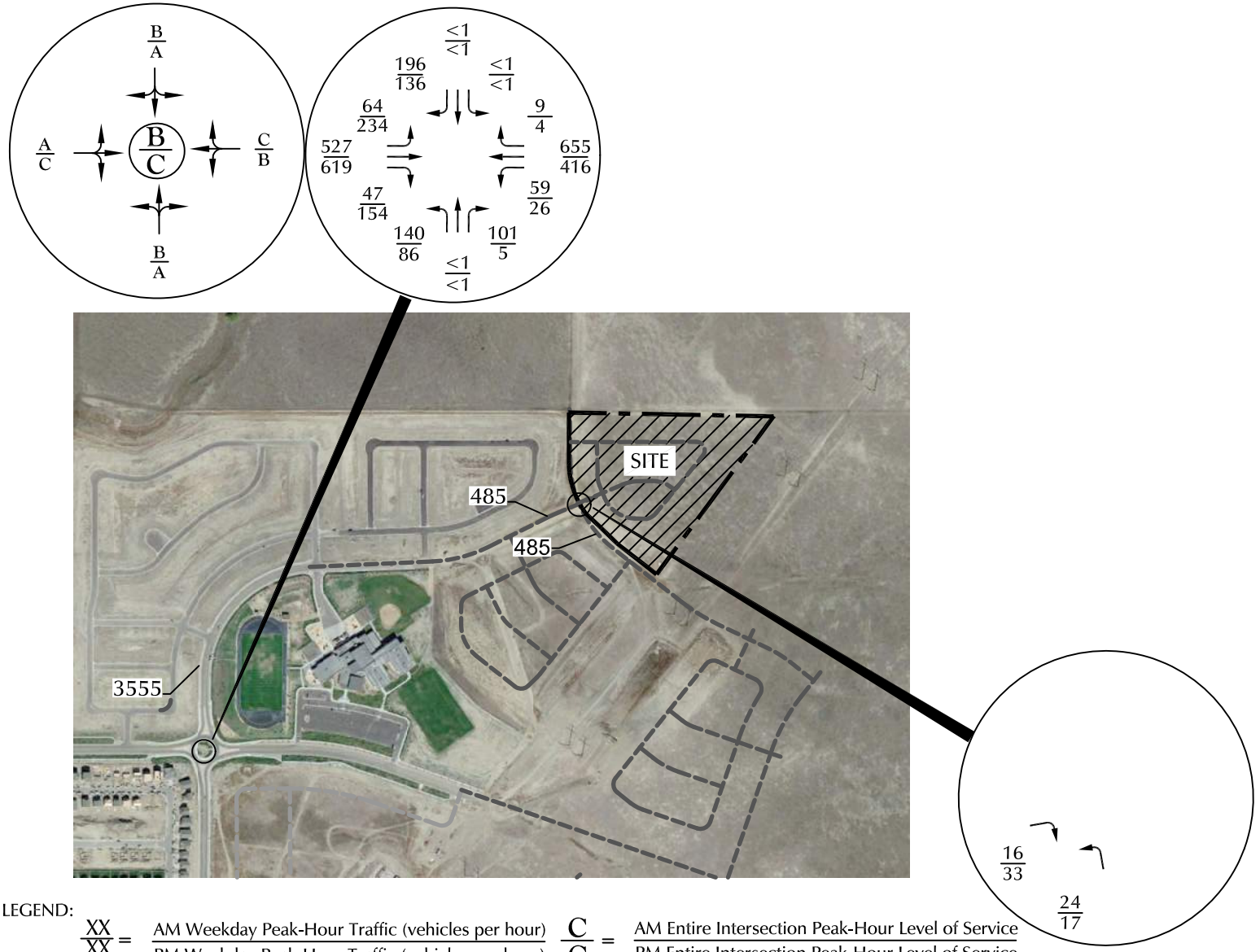
◯ = Modern Roundabout

TRANSPORTATION CONSULTANTS, INC.

Figure 6

Short-Term Background Traffic, Lane Geometry, Level-of-Service, and Traffic Control

Skyline at Lorson Ranch (LSC #204250)



Approximate Scale
Scale: NTS

LEGEND:

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

X,XXX= Annual Average Daily Traffic (vehicles per day)

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

◯ = Modern Roundabout

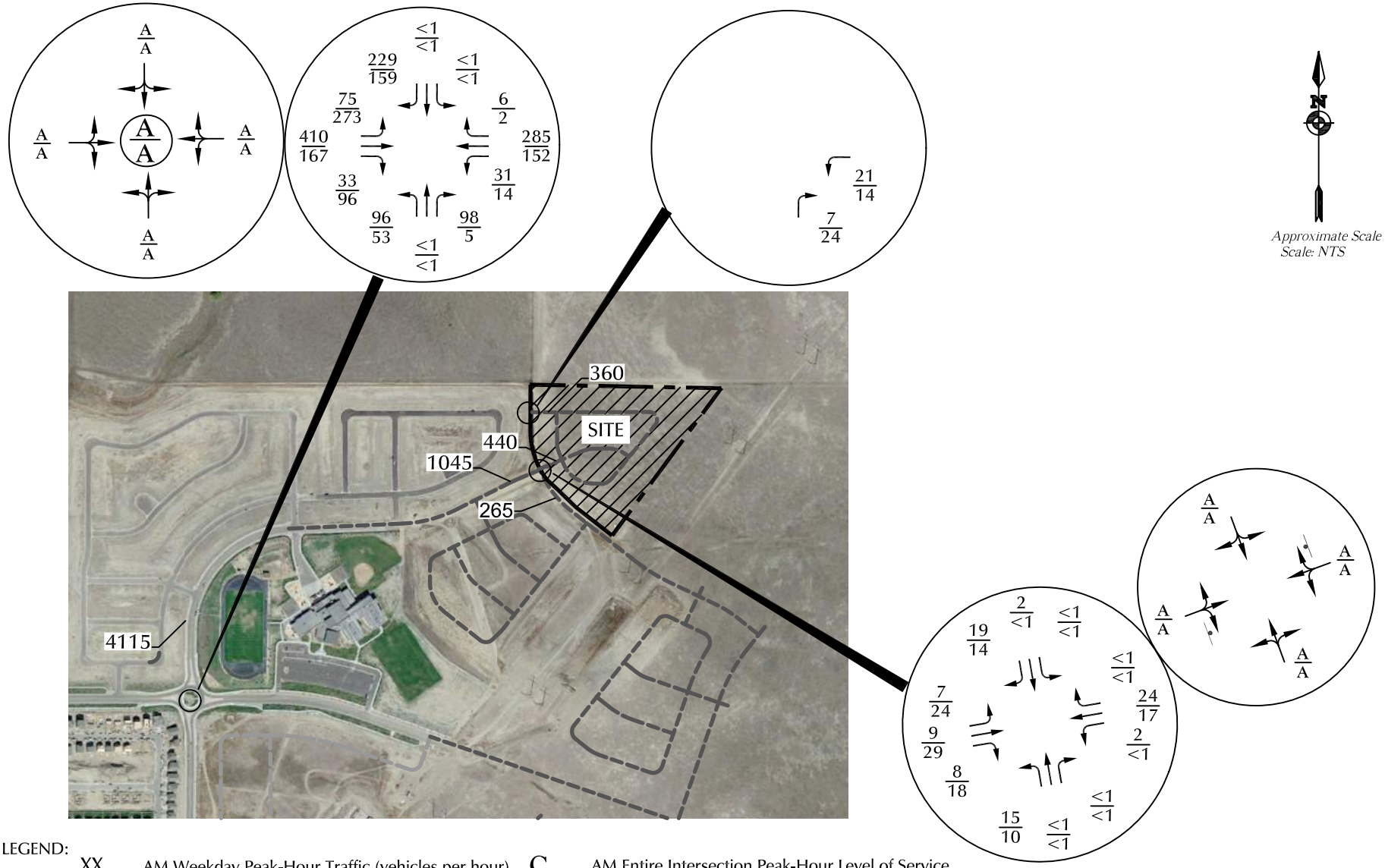
$\frac{C}{C}$ = $\frac{\text{AM Entire Intersection Peak-Hour Level of Service}}{\text{PM Entire Intersection Peak-Hour Level of Service}}$

TRANSPORTATION CONSULTANTS, INC.

Figure 7

2040 Background Traffic, Lane Geometry, Level-of-Service, and Traffic Control

Skyline at Lorson Ranch (LSC #204250)



LEGEND:

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$ $\frac{C}{C}$ = $\frac{\text{AM Entire Intersection Peak-Hour Level of Service}}{\text{PM Entire Intersection Peak-Hour Level of Service}}$

X,XXX= Annual Average Daily Traffic (vehicles per day)

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

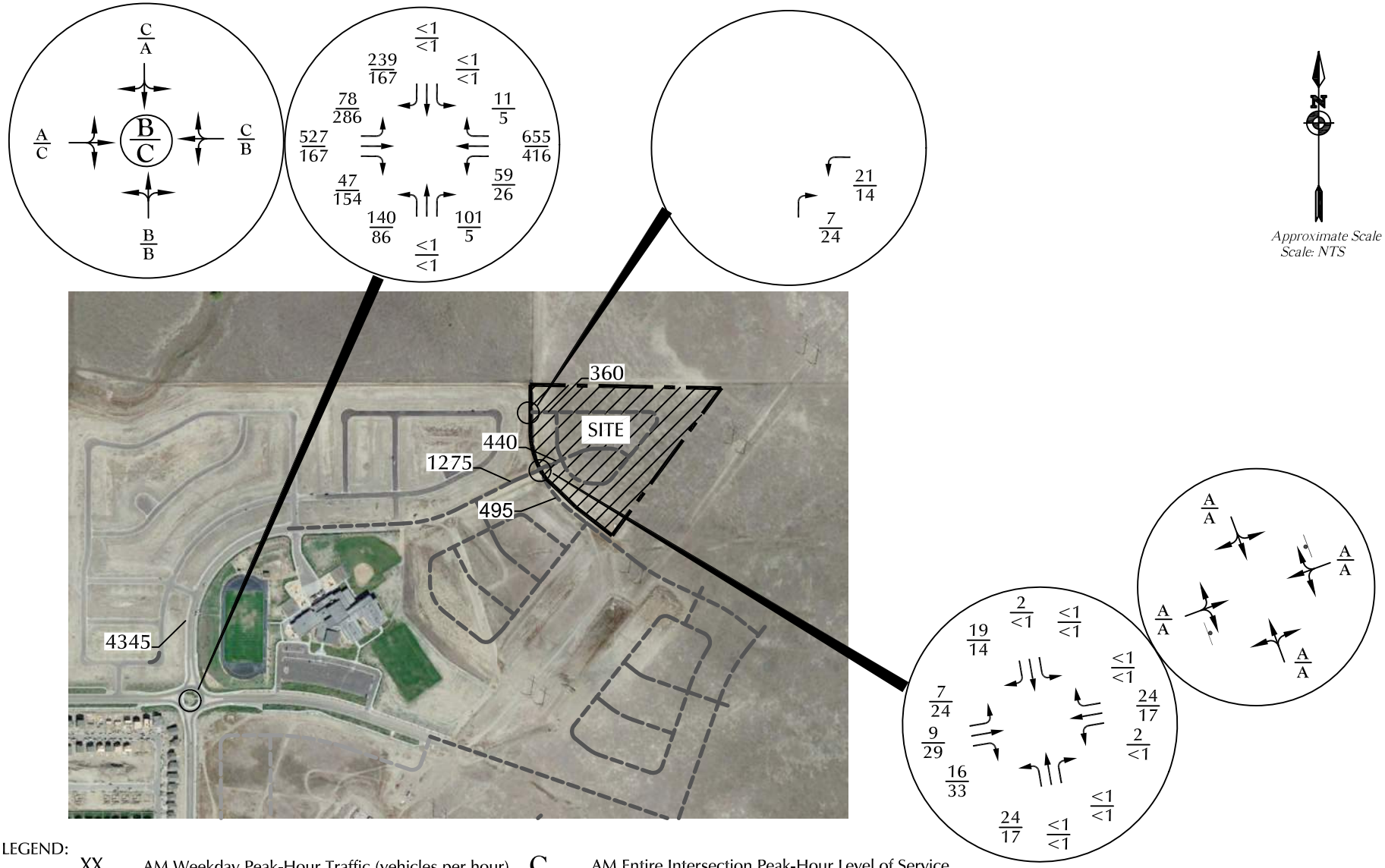
◯ = Modern Roundabout

TRANSPORTATION CONSULTANTS, INC.

Figure 8

Short-Term Total Traffic, Lane Geometry, Level-of-Service, and Traffic Control

Skyline at Lorson Ranch (LSC #204250)



LEGEND:

$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$ $\frac{C}{C}$ = $\frac{\text{AM Entire Intersection Peak-Hour Level of Service}}{\text{PM Entire Intersection Peak-Hour Level of Service}}$

X,XXX= Annual Average Daily Traffic (vehicles per day)

$\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$

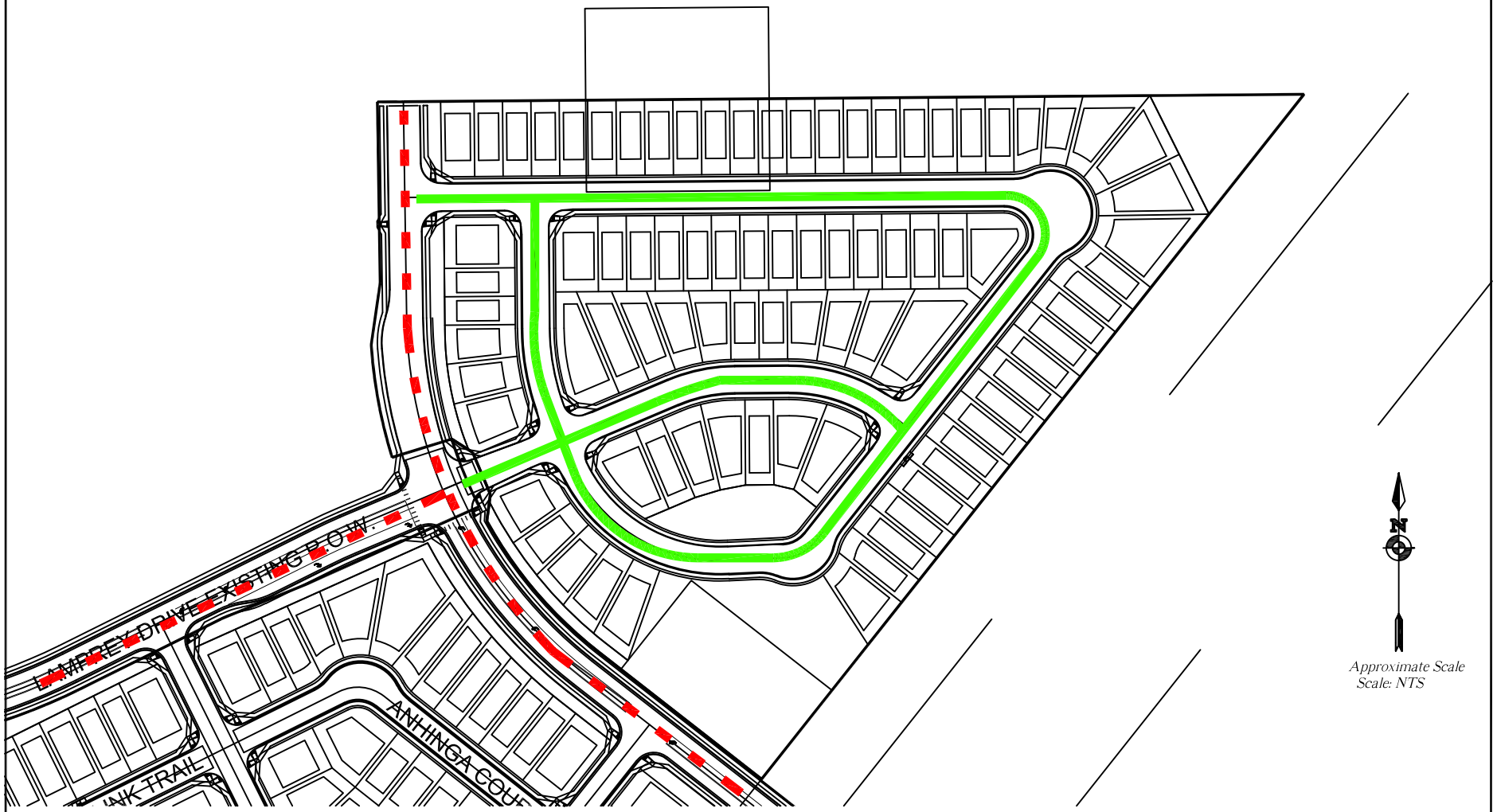
◯ = Modern Roundabout

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 9

2040 Total Traffic, Lane Geometry, Level-of-Service, and Traffic Control

Skyline at Lorson Ranch (LSC #204250)



Approximate Scale
Scale: NTS

LEGEND:

= Urban Local

= Urban Residential Collector (60' R.O.W.)

TRANSPORTATION CONSULTANTS, INC.

Figure 10

Street Classifications

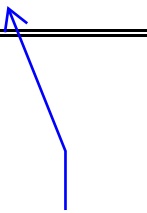
Skyline at Lorson Ranch (LSC #204250)

Appendix Tables

TRANSPORTATION
CONSULTANTS, INC.

Appendix Table 1
Area Trafffic Impact Studies by LSC
Skyline at Lorson Ranch

Study	Date
Lorson Ranch Sketch Plan Amendment 2 Traffic Impact and Access Analysis	December 17, 2018
Carriage Meadows South at Lorson Ranch Filing No. 1 Updated Traffic Impact Analysis	August 14, 2017
Carriage Meadows North at Lorson Ranch Filing No. 1 Updated Traffic Impact Analysis	January 29, 2017
Lorson Ranch East Updated Traffic Impact and Access Analysis	November 9, 2017
Lorson Ranch East Filing No. 1 Transportation Memorandum	May 2, 2018
Lorson Ranch East Filing No. 2 Transportation Memorandum	September 24, 2018
Lorson Ranch East Filing No. 3 Transportation Memorandum	January 22, 2019
Lorson Ranch East Filing No. 4 Transportation Memorandum	March 12, 2019
Lorson Ranch PK-8 School Traffic Impact and Access Analysis	October 4, 2018
Creekside at Lorson Ranch Filing No. 1 Traffic Impact and Access Analysis	October 28, 2018
Creekside at Lorson Ranch Filing No. 1 Transportation Memorandum	April 26, 2019
Carriage Meadows Townhomes Traffic Impact Analysis	February 25, 2020
Fontaine/Old Glory Intersection Analysis	February 27, 2020
Ponderosa at Lorson Ranch Filing No. 3 Transportation Memoradum	September 2, 2020
The Glen at Widefield Filing No. 10 Transportation Memorandum	September 24, 2020
The Glen at Widefield Filing No. 11 Transportation Memorandum	September 24, 2020
Creekside South at Lorson Ranch Updated Transportation Memorandum	May 5, 2020
The Hills at Lorson Ranch Full Traffic Impact Analysis	October 26, 2020
Source: LSC Transportation Consultants, Inc. ***(December 2020)***	



add The Hills Memorandum (TBD)

Appendix Table 2
Skyline at Lorson Ranch
Lorson Ranch Trip Generation Estimate

Land Use Data						Trip Generation Rates[1]					Raw ITE Trip Generation (Individual Driveway Trips)					School Internal Trips[2]					Retail Internal Trips[2]					Pass-by[3] (%)	Pass-by Trips					Total New External Trips				
Traffix Zone	Name	ITE Land Use	ITE Code	Quantity	Unit	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out		Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
RESIDENTIAL																																		
All Residential North of Lorson Boulevard "Between the Creeks"																																		
8	Ponderosa	Single-Family Detached Housing	210	102	DU[4]	9.44	0.19	0.56	0.62	0.37	963	19	57	64	37	26	2	5	1	1	99	0	2	5	2	0%	0	0	0	0	0	838	17	50	58	34
9	Ponderosa	Single-Family Detached Housing	210	102	DU	9.44	0.19	0.56	0.62	0.37	963	19	57	64	37	26	2	5	1	1	99	0	2	5	2	0%	0	0	0	0	0	838	17	50	58	34
10	Meadows Fil 1	Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
11	Meadows Fil 3	Single-Family Detached Housing	210	51	DU	9.44	0.19	0.56	0.62	0.37	481	9	28	32	19	13	1	2	1	0	50	0	1	2	1	0%	0	0	0	0	0	418	8	25	29	18
12	Meadows Fil 3	Single-Family Detached Housing	210	87	DU	9.44	0.19	0.56	0.62	0.37	821	16	48	54	32	22	2	4	1	0	85	0	1	4	2	0%	0	0	0	0	0	714	14	43	49	30
3	The Meadows Fil 2	Single-Family Detached Housing	210	109	DU	9.44	0.19	0.56	0.62	0.37	1,029	20	60	68	40	28	2	5	1	1	106	1	2	5	2	0%	0	0	0	0	0	895	17	53	62	37
13	Allegiant Fil 1	Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
5	Buffalo Crossing	Single-Family Detached Housing	210	204	DU	9.44	0.19	0.56	0.62	0.37	1,926	38	113	127	75	53	5	9	2	1	198	1	3	10	5	0%	0	0	0	0	0	1,675	32	101	115	69
	Townhomes at Lorson Ranch	Multifamily Housing	220	46	DU	7.32	0.11	0.35	0.35	0.21	337	5	16	16	10	9	1	2	0	0	35	0	1	2	1	0%	0	0	0	0	0	293	4	13	14	9
6	Pioneer Landing	Single-Family Detached Housing	210	59	DU	9.44	0.19	0.56	0.62	0.37	557	11	33	37	22	15	1	3	1	0	57	0	1	3	1	0%	0	0	0	0	0	485	10	29	33	21
7	Pioneer Landing	Single-Family Detached Housing	210	59	DU	9.44	0.19	0.56	0.62	0.37	557	11	33	37	22	15	1	3	1	0	57	0	1	3	1	0%	0	0	0	0	0	485	10	29	33	21
15	Meadows Future Fil 4 West	Single-Family Detached Housing	210	110	DU	9.44	0.19	0.56	0.62	0.37	1,038	20	61	69	40	28	2	5	1	1	107	1	2	5	2	0%	0	0	0	0	0	903	17	54	63	37
16	Meadows Future Fil 4 East	Single-Family Detached Housing	210	126	DU	9.44	0.19	0.56	0.62	0.37	1,189	23	70	79	46	32	3	6	1	1	123	1	2	6	3	0%	0	0	0	0	0	1,034	19	62	72	42
18	Ponderosa Fil 3	Multifamily Housing	220	90	DU	7.32	0.11	0.35	0.35	0.21	659	10	32	32	19	18	2	3	1	0	68	0	1	3	2	0%	0	0	0	0	0	573	8	28	28	17
39	Pioneer Landing Fil 2	Single-Family Detached Housing	210	170	DU	9.44	0.19	0.56	0.62	0.37	1,605	31	94	106	62	44	4	8	2	1	165	1	3	8	4	0%	0	0	0	0	0	1,396	26	83	96	57
	Total All Residential "Between the Creeks"			**1,509**	**DU**						**13,957**	**268**	**810**	**905**	**533**	**379**	**32**	**68**	**16**	**9**	**1,437**	**5**	**24**	**71**	**32**							**12,141**	**231**	**718**	**818**	**492**
Residential Adjacent to Marksheffel																																		
1	Carriage Meadows North	Single-Family Detached Housing	210	155	DU	9.44	0.19	0.56	0.62	0.37	1,463	29	86	97	57	40	3	7	2	1	151	1	2	7	3	0%	0	0	0	0	0	1,272	25	77	88	53
147	Carriage Meadows Town Homes	Multifamily Housing	220	49	DU	7.32	0.11	0.35	0.35	0.21	359	5	17	17	10	10	1	2	0	0	37	0	1	2	1	0%	0	0	0	0	0	312	4	14	15	9
47	Carriage Meadows South	Single-Family Detached Housing	210	86	DU	9.44	0.19	0.56	0.62	0.37	812	16	48	54	32	22	2	4	1	0	84	0	1	4	2	0%	0	0	0	0	0	706	14	43	49	30
247		Single-Family Detached Housing	210	51	DU	9.44	0.19	0.56	0.62	0.37	481	9	28	32	19	13	1	2	1	0	50	0	1	2	1	0%	0	0	0	0	0	418	8	25	29	18
347		Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
	Total All Residential Adjacent to Marksheffel			**438**	**DU**						**4,031**	**77**	**233**	**260**	**154**	**110**	**9**	**19**	**5**	**2**	**416**	**1**	**6**	**20**	**9**							**3,505**	**67**	**208**	**235**	**143**
	Cumulative Total			**1,947**	**DU**						**17,988**	**345**	**1,043**	**1,165**	**687**	**489**	**41**	**87**	**21**	**11**	**1,853**	**6**	**30**	**91**	**41**							**15,646**	**298**	**926**	**1,053**	**635**
Lorson Ranch East																																		
42	North of Fontaine	Single-Family Detached Housing	210	277	DU	9.44	0.19	0.56	0.62	0.37	2,615	51	154	173	101	71	6	13	3	2	269	1	4	13	6	0%	0	0	0	0	0	2,275	44	137	157	93
37	East of Lamprey	Single-Family Detached Housing	210	122	DU	9.44	0.19	0.56	0.62	0.37	1,152	23	68	76	45	31	3	6	1	1	119	1	2	6	3	0%	0	0	0	0	0	1,002	19	60	69	41
27	West of Lamprey	Single-Family Detached Housing	210	303	DU	9.44	0.19	0.56	0.62	0.37	2,860	56	168	189	111	78	7	14	3	2	295	1	5	15	7	0%	0	0	0	0	0	2,487	48	149	171	102
127	South of Lorson - West	Single-Family Detached Housing	210	76	DU	9.44	0.19	0.56	0.62	0.37	717	14	42	47	28	20	2	3	1	0	74	0	1	4	2	0%	0	0	0	0	0	623	12	38	42	26
227	South of Lorson - East	Single-Family Detached Housing	210	48	DU	9.44	0.19	0.56	0.62	0.37	453	9	27	30	18	12	1	2	0	0	47	0	1	2	1	0%	0	0	0	0	0	394	8	24	28	17
	Lorson Ranch East			**826**	**DU**						**7,797**	**153**	**459**	**515**	**303**	**212**	**19**	**38**	**8**	**5**	**804**	**3**	**13**	**40**	**19**							**6,781**	**131**	**408**	**467**	**279**
	Cumulative Total			**2,773**	**DU**						**25,785**	**498**	**1,502**	**1,680**	**990**	**701**	**60**	**125**	**29**	**16**	**2,657**	**9**	**43**	**131**	**60**							**22,427**	**362**	**1,126**	**1,285**	**771**
Creekside at Lorson Ranch																																		
26	Creekside East (Filing 1)	Single-Family Detached Housing	210	97	DU	9.44	0.19	0.56	0.62	0.37	916	18	54	60	36	25	2	4	1	1	94	0	1	5	2	0%	0	0	0	0	0	797	16	49	54	33
126	Creekside West (Filing 1)	Single-Family Detached Housing	210	138	DU	9.44	0.19	0.56	0.62	0.37	1,303	26	77	86	51	36	3	6	1	1	134	1	2	7	3	0%	0	0	0	0	0	1,133	22	69	78	47
427	Creekside South Tract B	Multifamily Housing	220	97	DU	7.32	0.11	0.35	0.35	0.21	710	10	34	34	20	19	2	3	1	0	73	0	1	4	2	0%	0	0	0	0	0	618	8	30	29	18
327	Creekside South	Single-Family Detached Housing	210	200	DU	9.44	0.19	0.56	0.62	0.37	1,888	37	111	125	73	52	4	9	2	1	195	1	3	10	4	0%	0	0	0	0	0	1,641	32	99	113	68
	Creekside at Lorson Ranch			**532**	**DU**						**4,817**	**91**	**276**	**305**	**180**	**132**	**11**	**22**	**5**	**3**	**496**	**2**	**7**	**26**	**11**							**4,189**	**78**	**247**	**274**	**166**
	Cumulative Total			**3,305**	**DU**						**30,602**	**589**	**1,778**	**1,985**	**1,170**	**833**	**71**	**147**	**34**	**19**	**3,153**	**11**	**50**	**157**	**71**							**26,616**	**507**	**1,581**	**1,794**	**1,080**
The Hills PUD																																		
43	Area 'B'	Single-Family Detached Housing	210	116	DU	9.44	0.19	0.56	0.62	0.37	1,095	21	64	72	42	30	3	5	1	1	113	1	2	6	3	0%	0	0	0	0	0	952	17	57	65	38
44	Area 'C'	Single-Family Detached Housing	210	123	DU	9.44	0.19	0.56	0.62	0.37	1,161	23	68	77	45	32	3	6	1	1	120	1	2	6	3	0%	0	0	0	0	0	1,009	19	60	70	41
36	Areas 'E' & 'G'	Single-Family Detached Housing	210	275	DU	9.44	0.19	0.56	0.62	0.37	2,596	51	153	172	101	71	6	13	3	2	268	1	4	13	6	0%	0	0	0	0	0	2,257	44	136	156	93
	The Hills PUD			**514**	**DU**						**4,852**	**95**	**285**	**321**	**188**	**133**	**12**	**24**	**5**	**4**	**501**	**3**	**8**	**25**	**12**							**4,218**	**80**	**253**	**291**	**172**
	Cumulative Total			**3,819**	**DU**						**35,454**	**684**	**2,063**	**2,306**	**1,358**	**966**	**83**	**171**	**39**	**23**	**3,654**	**14**	**58**	**182**	**83**							**30,834**	**587**	**1,834**	**2,085**	**1,252**
Skyline at Lorson Ranch																																		
45	Area 'A' - East of Lamprey/Grayling	Single-Family Detached Housing	210	85	DU	9.44	0.19	0.56	0.62	0.37	802	16	47	53	31	22	2	4	1	0	83	0	1	4	2	0%	0	0	0	0	0	697	14	42	48	29
	Cumulative Total			**3,904**	**DU**						**36,256**	**700**	**2,110**	**2,359**	**1,389**	**988**	**85**	**175**	**40**	**23**	**3,737**	**14**	**59**	**186**	**85**							**31,531**	**601**	**1,876**	**2,133**	**1,281**
Future Residential Uses																																		
46	Area 'D' - NE of Fontaine/Walleye	Single-Family Detached Housing	210	461	DU	9.44	0.19	0.56	0.62	0.37	4,352	85	256	288	169	119	10	21	5	3	448	2	7	22	10	0%	0	0	0	0	0	3,785	73	228	261	156
35	Areas 'F' & 'H' - WE of Fontaine/Walleye	Single-Family Detached Housing	210	532	DU	9.44	0.19	0.56	0.62	0.37	5,022	98	295	332	195	137	12	24	5	3	518	3	8	26	12	0%	0	0	0	0	0	4,367	83	263	301	180
50	Area 'I' - South of Lorson/Walleye	Single-Family Detached Housing	210	441	DU	9.44	0.19	0.56	0.62	0.37	4,163	82	245	275	162	114	10	20	4	2	429	2	7	21	10	0%	0	0	0	0	0	3,620	70	218	250	150
	Future Residential Uses			**1,434**	**DU**						**13,537**	**265**	**796**	**895**	**526**	**370**	**32**	**65**	**14**	**8**	**1,395**	**7**	**22**	**69**	**32**							**11,772**	**226**	**709**	**812**	**486**
	Cumulative Total			**5,338**	**DU**						**49,793**	**965**	**2,906**	**3,254**	**1,915**	**1,358**	**117**	**240**	**54**	**31**	**5,132**	**21**	**81**	**255**	**117**							**43,303**	**827**	**2,585**	**2,945**	**1,767**
NON-RESIDENTIAL																																		
34	K-8 School	Elementary School	520	690	Students	1.89	0.36	0.31	0.07	0.08	1,304	250	213	51	53	913	175	85	20	37	0	0	0	0	0	0%	0	0	0	0	0	391	75	128	31	16
		Middle School/Junior High School	522	300	Students	2.13	0.31	0.27	0.07	0.08	639	94	80	22	23	447	66	32	9	16	0	0	0	0	0	0%	0	0	0	0	0	192	28	48	13	7
20	North of Fontaine	Shopping Center	820	101	KSF[5]	46.75	0.74	0.45	2.13	2.30	4,722	75	46	215	233	0	0	0	0	0	2,361	37	12	54	116	25%	590	9	9	35	35	1,771	29	25	126	82
22	South of Fontaine	Shopping Center	820	118	KSF	46.75	0.74	0.45	2.13	2.30	5,539	88	54	252	273	0	0	0	0	0	2,770	44	13	63	137	25%	692	11	11	41	41	2,077	33	30	148	95
											12,204	**507**	**393**	**540**	**582**	**1,360**	**241**	**117**	**29**	**53**	**5,131**	**81**	**25**	**117**	**253**		**1,282**	**20**	**20**	**76**	**76**	**4,431**	**165**	**231**	**318**	**200**
	Grand Total at Buildout of Lorson Ranch										**61,997**	**1,472**	**3,299**	**3,794**	**2,497**																**47,734**	**992**	**2,816**	**3,263**	**1,967**
Trip Generation Estimate From *Lorson Ranch Sketch Plan Amendment 2 Traffic Impact Analysis by LSC December 17, 2018*																																		
	Single-Family Detached Housing		210	4,408	DU	9.44	0.19	0.56	0.62	0.37	41,612	815	2,446	2,749	1,615	1,360	117	241	53	29	5,131	25	81	253	117	0%	0	0	0	0	0	0	41,665	768	2,441	2,758	1,654
	Multifamily Housing (Low-Rise)		220	894	DU	7.32	0.11	0.35	0.35	0.21	6,544	95	317	315	185											0%	0	0	0	0	0	0					
	Elementary School		520	690	Students	1.89	0.36	0.31	0.07	0.08	1,304	250	213	51	53	913	175	85	20	37	0	0	0	0	0	0%	0	0	0	0	0	0	391	75	128	31	16
	Middle School/Junior High School		522	300	Students	2.13	0.31	0.27	0.07	0.08	639	94	80	22	23	447	66	32	9	16	0	0	0	0	0	0%	0	0	0	0	0	0	192	28	48	13	7
	Shopping Center		820	219	KSF	46.75	0.74	0.45	2.13	2.30	0	0	0	0	0	0	0	0	0	0	5,131	81	25	117	253	25%	1,282	20	20	76	76	#	3,848	62	55	274	177
											60,360	**1,417**	**3,156**	**3,604**	**2,382**												**1,282**	**20**	**20**	**76**	**76**		**46,096**	**933**	**2,672**	**3,076**	**1,854**
	Change (Increase) From 2018										**1,637**	**55**	**143**	**190**	**115**																**1,638**	**59**	**144**	**187**	**113**

Notes:
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
(2) See Appendix Table 2 for Internal Trip Percentages
(3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice 3rd Edition, 2017" by ITE
(3) DU = dwelling Unit
(4) KSF = thousand square feet of floor area

Appendix Table 3
Skyline at Lorson Ranch
Internal Trip Estimate

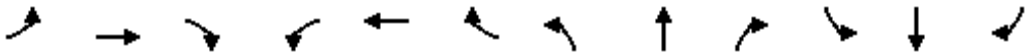
ITE Land Use	ITE Code	Quantity	Unit	Trip Generation Rates[1] Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Raw ITE Trip Generation (Individual Driveway Trips) Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
Single-Family Detached Housing	210	5,056	DU[2]	9.44	0.19	0.56	0.62	0.37	47,729	935	2,806	3,153	1,852
Residential Condominium/Townhouse	210	282	DU	7.32	0.11	0.35	0.35	0.21	2,064	30	100	99	58
									49,793	**965**	**2,906**	**3,252**	**1,910**
Elementary School	520	690	Students	1.89	0.36	0.31	0.07	0.08	1,304	250	213	51	53
Middle School/Junior High School	522	300	Students	2.13	0.31	0.27	0.07	0.08	639	94	80	22	23
								Total School	**1,943**	**344**	**293**	**73**	**76**
Shopping Center	820	219	KSF[3]	46.75	0.74	0.45	2.13	2.30	10,261	162	99	467	506
								Total School and Retail	**12,204**	**506**	**392**	**540**	**582**

	Percent Internal Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total Internal Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out	Total External Trips Daily	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour In	PM Peak Hour Out
School	3%	12%	8%	2%	2%	1,360	117	241	53	29					
Retail	10%	3%	3%	8%	6%	5,131	25	81	253	117					
Total	13%	15%	11%	9%	8%	**6,491**	**142**	**322**	**306**	**146**	**43,302**	**823**	**2,584**	**2,946**	**1,764**
	70%	70%	40%	40%	70%	913	175	85	20	37	391	75	128	31	16
	70%	70%	40%	40%	70%	447	66	32	9	16	192	28	48	13	7
						1,360	**241**	**117**	**29**	**53**	**583**	**103**	**176**	**44**	**23**
	50%	50%	25%	25%	50%	5,131	81	25	117	253	5,129	80	74	350	252
						6,491	**322**	**142**	**146**	**306**					
											49,014	**1,006**	**2,834**	**3,340**	**2,039**

Notes:
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling Unit
(3) KSF = thousand square feet of floor area

Levels of Service

TRANSPORTATION
CONSULTANTS, INC.



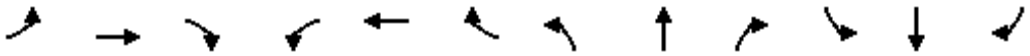
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	61	410	33	31	285	4	96	0	98	0	0	186
Future Volume (vph)	61	410	33	31	285	4	96	0	98	0	0	186
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	72	482	39	36	335	5	113	0	115	0	0	219
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	376	0	0	228	0	0	219	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	593	376	228	219
Demand Flow Rate, veh/h	605	384	232	223
Vehicles Circulating, veh/h	37	188	565	494
Vehicles Exiting, veh/h	680	609	77	78
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	6.5	8.2	7.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	605	384	232	223
Cap Entry Lane, veh/h	1329	1139	775	834
Entry HV Adj Factor	0.981	0.980	0.983	0.982
Flow Entry, veh/h	593	376	228	219
Cap Entry, veh/h	1303	1116	762	819
V/C Ratio	0.455	0.337	0.299	0.267
Control Delay, s/veh	7.3	6.5	8.2	7.3
LOS	A	A	A	A
95th %tile Queue, veh	2	2	1	1



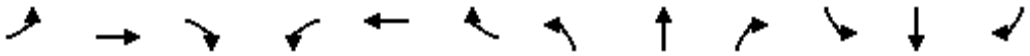
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	221	167	96	14	152	1	53	0	5	0	0	128
Future Volume (vph)	221	167	96	14	152	1	53	0	5	0	0	128
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	260	196	113	16	179	1	62	0	6	0	0	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	569	0	0	196	0	0	68	0	0	151	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	569	196	68	151
Demand Flow Rate, veh/h	580	200	69	154
Vehicles Circulating, veh/h	16	328	465	262
Vehicles Exiting, veh/h	400	206	131	266
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.8	5.7	5.0	4.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	580	200	69	154
Cap Entry Lane, veh/h	1358	988	859	1056
Entry HV Adj Factor	0.981	0.982	0.986	0.981
Flow Entry, veh/h	569	196	68	151
Cap Entry, veh/h	1332	970	846	1036
V/C Ratio	0.427	0.203	0.080	0.146
Control Delay, s/veh	6.8	5.7	5.0	4.8
LOS	A	A	A	A
95th %tile Queue, veh	2	1	0	1



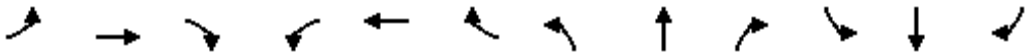
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	64	527	47	59	655	9	140	0	101	0	0	196
Future Volume (vph)	64	527	47	59	655	9	140	0	101	0	0	196
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	70	573	51	64	712	10	152	0	110	0	0	213
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	694	0	0	786	0	0	262	0	0	213	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	694	786	262	213
Demand Flow Rate, veh/h	707	801	267	217
Vehicles Circulating, veh/h	65	226	655	946
Vehicles Exiting, veh/h	1098	696	117	81
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.0	15.5	10.2	13.9
Approach LOS	A	C	B	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	707	801	267	217
Cap Entry Lane, veh/h	1291	1096	707	526
Entry HV Adj Factor	0.981	0.981	0.981	0.982
Flow Entry, veh/h	694	786	262	213
Cap Entry, veh/h	1267	1075	694	516
V/C Ratio	0.547	0.731	0.377	0.413
Control Delay, s/veh	9.0	15.5	10.2	13.9
LOS	A	C	B	B
95th %tile Queue, veh	3	7	2	2



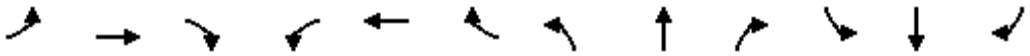
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	234	619	154	26	416	4	86	0	5	0	0	136
Future Volume (vph)	234	619	154	26	416	4	86	0	5	0	0	136
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	254	673	167	28	452	4	93	0	5	0	0	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1094	0	0	484	0	0	98	0	0	148	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	15.0
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1094	484	98	148
Demand Flow Rate, veh/h	1115	494	100	151
Vehicles Circulating, veh/h	29	354	945	585
Vehicles Exiting, veh/h	707	691	199	263
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	18.7	10.4	9.6	7.0
Approach LOS	C	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	1115	494	100	151
Cap Entry Lane, veh/h	1340	962	526	760
Entry HV Adj Factor	0.981	0.980	0.980	0.980
Flow Entry, veh/h	1094	484	98	148
Cap Entry, veh/h	1314	942	516	745
V/C Ratio	0.832	0.514	0.190	0.199
Control Delay, s/veh	18.7	10.4	9.6	7.0
LOS	C	B	A	A
95th %tile Queue, veh	11	3	1	1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	75	410	33	31	285	6	96	0	98	0	0	229
Future Volume (vph)	75	410	33	31	285	6	96	0	98	0	0	229
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	88	482	39	36	335	7	113	0	115	0	0	269
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	609	0	0	378	0	0	228	0	0	269	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	609	378	228	269
Demand Flow Rate, veh/h	622	386	232	274
Vehicles Circulating, veh/h	37	205	582	494
Vehicles Exiting, veh/h	731	609	77	97
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.5	6.7	8.4	8.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	622	386	232	274
Cap Entry Lane, veh/h	1329	1120	762	834
Entry HV Adj Factor	0.980	0.980	0.983	0.982
Flow Entry, veh/h	609	378	228	269
Cap Entry, veh/h	1302	1097	749	819
V/C Ratio	0.468	0.345	0.304	0.329
Control Delay, s/veh	7.5	6.7	8.4	8.2
LOS	A	A	A	A
95th %tile Queue, veh	3	2	1	1

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	7	9	8	2	24	0	15	1	0	0	2	19
Future Vol, veh/h	7	9	8	2	24	0	15	1	0	0	2	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	11	9	2	28	0	18	1	0	0	2	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	64	50	13	60	61	1	24	0	0	1	0	0
Stage 1	13	13	-	37	37	-	-	-	-	-	-	-
Stage 2	51	37	-	23	24	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	930	841	1067	936	830	1084	1591	-	-	1622	-	-
Stage 1	1007	885	-	978	864	-	-	-	-	-	-	-
Stage 2	962	864	-	995	875	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	898	832	1067	911	821	1084	1591	-	-	1622	-	-
Mov Cap-2 Maneuver	898	832	-	911	821	-	-	-	-	-	-	-
Stage 1	996	885	-	967	854	-	-	-	-	-	-	-
Stage 2	920	854	-	974	875	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.5	6.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	919	827	1622	-	-
HCM Lane V/C Ratio	0.011	-	-	0.031	0.037	-	-	-
HCM Control Delay (s)	7.3	0	-	9	9.5	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

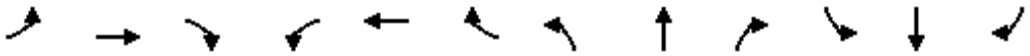
Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	0	0	7	0	0
Future Vol, veh/h	21	0	0	7	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	0	0	8	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	5	4	0	0	8	0
Stage 1	4	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1017	1080	-	-	1612	-
Stage 1	1019	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1017	1080	-	-	1612	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1612	-
HCM Lane V/C Ratio	-	-	0.027	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	273	167	96	14	152	2	53	0	5	0	0	159
Future Volume (vph)	273	167	96	14	152	2	53	0	5	0	0	159
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	321	196	113	16	179	2	62	0	6	0	0	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	630	0	0	197	0	0	68	0	0	187	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	630	197	68	187
Demand Flow Rate, veh/h	642	201	69	191
Vehicles Circulating, veh/h	16	390	527	262
Vehicles Exiting, veh/h	437	206	131	329
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.5	6.1	5.4	5.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	642	201	69	191
Cap Entry Lane, veh/h	1358	927	806	1056
Entry HV Adj Factor	0.981	0.982	0.986	0.979
Flow Entry, veh/h	630	197	68	187
Cap Entry, veh/h	1332	910	794	1034
V/C Ratio	0.473	0.217	0.086	0.181
Control Delay, s/veh	7.5	6.1	5.4	5.2
LOS	A	A	A	A
95th %tile Queue, veh	3	1	0	1

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	29	18	0	17	0	10	1	0	0	0	14
Future Vol, veh/h	24	29	18	0	17	0	10	1	0	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	34	21	0	20	0	12	1	0	0	0	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	43	33	8	61	41	1	16	0	0	1	0	0
Stage 1	8	8	-	25	25	-	-	-	-	-	-	-
Stage 2	35	25	-	36	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	960	860	1074	934	851	1084	1602	-	-	1622	-	-
Stage 1	1013	889	-	993	874	-	-	-	-	-	-	-
Stage 2	981	874	-	980	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	938	854	1074	883	845	1084	1602	-	-	1622	-	-
Mov Cap-2 Maneuver	938	854	-	883	845	-	-	-	-	-	-	-
Stage 1	1006	889	-	986	868	-	-	-	-	-	-	-
Stage 2	952	868	-	924	882	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.4	6.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1602	-	-	930	845	1622	-	-
HCM Lane V/C Ratio	0.007	-	-	0.09	0.024	-	-	-
HCM Control Delay (s)	7.3	0	-	9.3	9.4	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

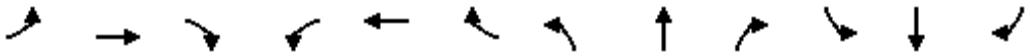
Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	0	0	24	0	0
Future Vol, veh/h	14	0	0	24	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	0	0	28	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	15	14	0	0	28	0
Stage 1	14	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1004	1066	-	-	1585	-
Stage 1	1009	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1004	1066	-	-	1585	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	920	1585	-
HCM Lane V/C Ratio	-	-	0.018	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	78	527	47	59	655	11	140	0	101	0	0	239
Future Volume (vph)	78	527	47	59	655	11	140	0	101	0	0	239
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	85	573	51	64	712	12	152	0	110	0	0	260
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	709	0	0	788	0	0	262	0	0	260	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	709	788	262	260
Demand Flow Rate, veh/h	723	803	267	265
Vehicles Circulating, veh/h	65	242	671	946
Vehicles Exiting, veh/h	1146	696	117	99
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.2	16.3	10.4	16.4
Approach LOS	A	C	B	C

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	723	803	267	265
Cap Entry Lane, veh/h	1291	1078	696	526
Entry HV Adj Factor	0.980	0.981	0.981	0.981
Flow Entry, veh/h	709	788	262	260
Cap Entry, veh/h	1266	1058	683	516
V/C Ratio	0.560	0.745	0.384	0.504
Control Delay, s/veh	9.2	16.3	10.4	16.4
LOS	A	C	B	C
95th %tile Queue, veh	4	7	2	3

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	9	16	2	24	0	24	1	0	0	2	19
Future Vol, veh/h	7	9	16	2	24	0	24	1	0	0	2	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	10	17	2	26	0	26	1	0	0	2	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	79	66	13	79	76	1	23	0	0	1	0	0
Stage 1	13	13	-	53	53	-	-	-	-	-	-	-
Stage 2	66	53	-	26	23	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	910	825	1067	910	814	1084	1592	-	-	1622	-	-
Stage 1	1007	885	-	960	851	-	-	-	-	-	-	-
Stage 2	945	851	-	992	876	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	812	1067	876	801	1084	1592	-	-	1622	-	-
Mov Cap-2 Maneuver	876	812	-	876	801	-	-	-	-	-	-	-
Stage 1	991	885	-	945	837	-	-	-	-	-	-	-
Stage 2	901	837	-	965	876	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.6	7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	939	806	1622	-	-
HCM Lane V/C Ratio	0.016	-	-	0.037	0.035	-	-	-
HCM Control Delay (s)	7.3	0	-	9	9.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

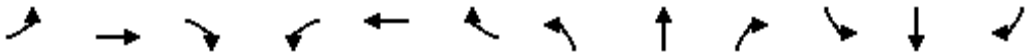
Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	0	0	7	0	0
Future Vol, veh/h	21	0	0	7	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	0	8	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	5	4	0	0	8	0
Stage 1	4	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1017	1080	-	-	1612	-
Stage 1	1019	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1017	1080	-	-	1612	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1612	-
HCM Lane V/C Ratio	-	-	0.025	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	286	619	154	26	416	5	86	0	5	0	0	167
Future Volume (vph)	286	619	154	26	416	5	86	0	5	0	0	167
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	311	673	167	28	452	5	93	0	5	0	0	182
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1151	0	0	485	0	0	98	0	0	182	0

Intersection Summary

Intersection	
Intersection Delay, s/veh	17.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1151	485	98	182
Demand Flow Rate, veh/h	1173	495	100	186
Vehicles Circulating, veh/h	29	412	1003	585
Vehicles Exiting, veh/h	742	691	199	322
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	22.3	11.5	10.3	7.6
Approach LOS	C	B	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	1173	495	100	186
Cap Entry Lane, veh/h	1340	906	496	760
Entry HV Adj Factor	0.981	0.980	0.980	0.978
Flow Entry, veh/h	1151	485	98	182
Cap Entry, veh/h	1314	888	486	743
V/C Ratio	0.876	0.546	0.202	0.245
Control Delay, s/veh	22.3	11.5	10.3	7.6
LOS	C	B	B	A
95th %tile Queue, veh	13	3	1	1

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	29	33	0	17	0	17	1	0	0	0	14
Future Vol, veh/h	24	29	33	0	17	0	17	1	0	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	32	36	0	18	0	18	1	0	0	0	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	54	45	8	79	52	1	15	0	0	1	0	0
Stage 1	8	8	-	37	37	-	-	-	-	-	-	-
Stage 2	46	37	-	42	15	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	944	847	1074	910	839	1084	1603	-	-	1622	-	-
Stage 1	1013	889	-	978	864	-	-	-	-	-	-	-
Stage 2	968	864	-	972	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	920	838	1074	847	830	1084	1603	-	-	1622	-	-
Mov Cap-2 Maneuver	920	838	-	847	830	-	-	-	-	-	-	-
Stage 1	1002	889	-	967	854	-	-	-	-	-	-	-
Stage 2	937	854	-	906	883	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.4	6.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	941	830	1622	-	-
HCM Lane V/C Ratio	0.012	-	-	0.099	0.022	-	-	-
HCM Control Delay (s)	7.3	0	-	9.2	9.4	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	0	0	24	0	0
Future Vol, veh/h	14	0	0	24	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	0	0	26	0	0

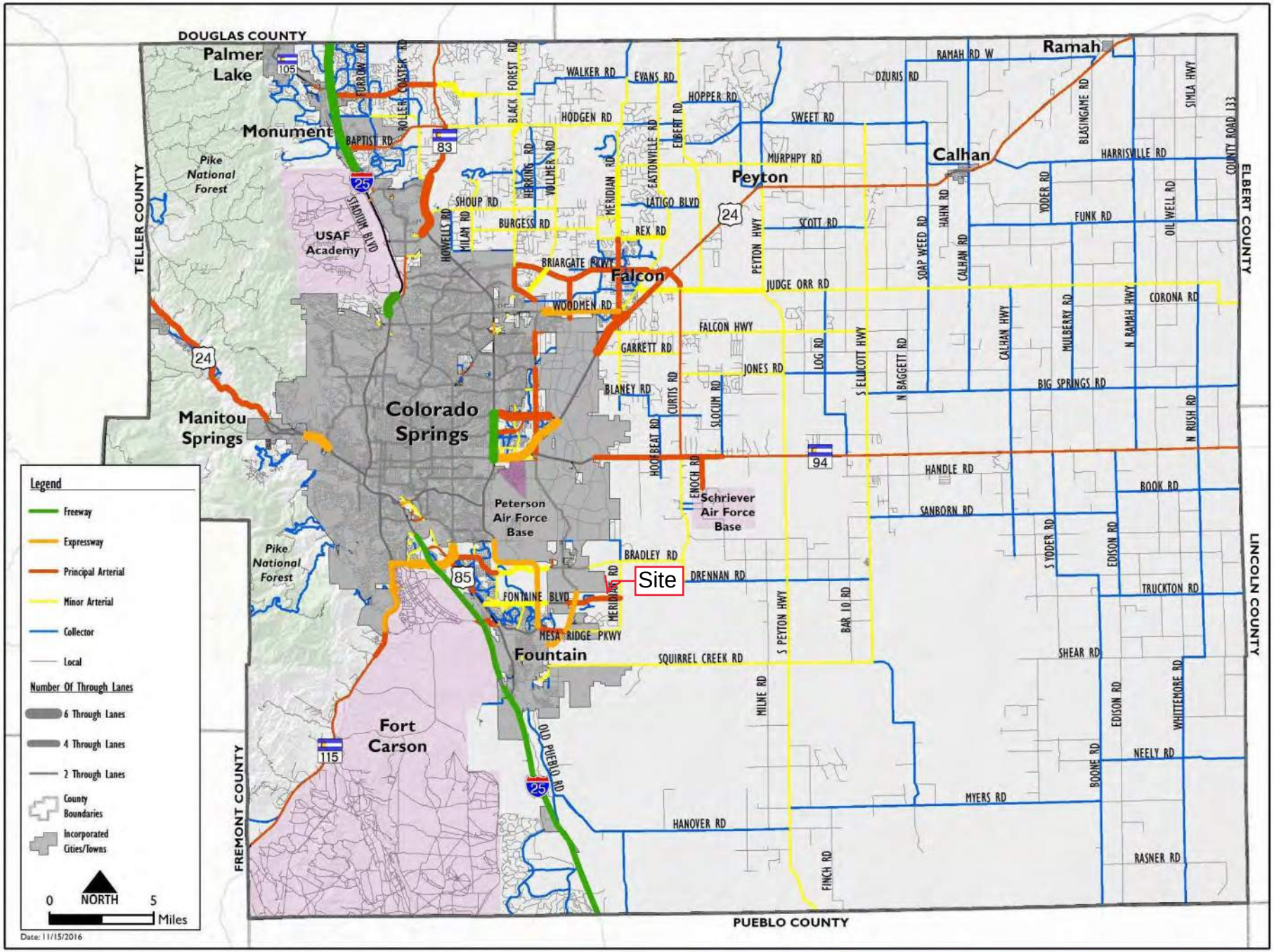
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	14	13	0	0	26	0
Stage 1	13	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1005	1067	-	-	1588	-
Stage 1	1010	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1005	1067	-	-	1588	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	921	1588	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

MTCP Maps

TRANSPORTATION
CONSULTANTS, INC.



Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation