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Forest Lakes Phase II
Traffic Impact Analysis
PCD File No. PUDSP-18-001
(LSC #174550)
December 5, 2018

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.

Date



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November 26, 2018

Ms. Andrea Barlow
N.E.S., Inc.
619 North Cascade Avenue, Suite 200
Colorado Springs, CO 80903

RE: Forest Lakes Phase II
El Paso County, Colorado
PCD File No. PUDSP-18-001
Traffic Impact Analysis
LSC #174550

Dear Ms. Barlow:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for Phase II of the Forest Lakes development in El Paso County, Colorado. As shown in Figure 1, the site is located northwest of the intersection of Hay Creek Road and Baptist Road. LSC completed a master-plan-level study for all of Forest Lakes dated August 13, 2001. LSC also prepared three letters in response to comments on the initial master plan study dated January 8, 2002, March 15, 2002, and August 5, 2002 and a traffic impact analysis for Filing 2 dated December 9, 2015. Since the completion of the master plan study, 273 lots for single-family homes have been platted as part of Phase I of the development. The currently proposed Phase II is planned to include an additional 180 lots for single-family homes. Future phases are planned to include 61 lots for single-family homes (for a total of 514 single-family homes) and an elementary school. This is 48 more single-family homes than was assumed in the 2001 master plan study. Access to the site will be to Forest Lakes Drive.

REPORT CONTENTS

This report is being prepared as part of a submittal to El Paso County. It identifies the traffic impacts of Phase II of the Forest Lakes development. The report contains the following:

- 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, etc.
- The existing traffic volumes on the area roadways.
- Short-term baseline/background traffic volume estimates.
- 2040 baseline/background traffic volume estimates.
- The projected average weekday and peak-hour vehicle-trips to be generated by the site.

- The assignment of the site's projected traffic volumes to the adjacent streets and access point intersections for the short and long term and the resulting total traffic volumes for the short and long term.
- The resulting traffic impacts including level of service analysis at the area intersections and average daily traffic volumes on key street segments.
- The recommended street classifications for the internal streets within the proposed development.
- The obligations of the project to the Countywide Fee Program and the Baptist Road Rural Transportation Authority.

Update the sentence. the number exceeds the Filing 1 available lots.

LAND USE AND ACCESS

Figure 2 shows the overall Forest Lakes master plan. Filing 1 (34 lots for single-family homes), Filing 2 (160 lots for single-family homes), and Filing 3 (79 lots for single-family homes) have been platted. As of July 2017, when area traffic counts were conducted, about 57 homes had been constructed in Filing 1 and 13 homes had been constructed in Filing 3.

The currently proposed Phase II is planned to include 180 lots for single-family homes in the northwest area of the Forest Lakes development. The previous master plan study assumed 132 lots would be constructed in this area.

Future Phases are planned to include 61 lots for single-family homes in the southwest area of the development (for a total of 514 single-family homes) and an elementary school. At buildout the Forest Lakes development is currently planned to contain about 48 more single-family homes than was assumed in the 2001 master plan study.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

For clarity use the EPC road classification nomenclature for all the area roadways. Example: Is Forest Lakes Drive an Urban Non-Residential Collector or Urban Residential Collector?

4ln or 6ln? Urban or Rural?

The area major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **Baptist Road** is a Principal Arterial that extends east of Hay Creek Road to the intersection of Roller Coaster Road and Hogden Road. Baptist Road has one through lane in each direction and a posted speed limit of 40 miles per hour (mph) between Hay Creek Road and Interstate 25. The intersection of Baptist/Old Denver was recently reconstructed as a one-lane modern roundabout.
- **Old Denver Road** is a Minor Arterial that extends north from Baptist Road to Santa Fe Avenue and then continues north as Beacon Lite Road.
- **Forest Lakes Drive** is a 40-foot-wide two-lane Urban Collector and is designed to serve the Forest Lakes development and Willow Springs development on the east side of the road just north of Baptist Road.
- **Lindbergh Road** is a gravel road that extends north from Mesa Top Drive to Shilling Avenue.

Use the County nomenclature for clarity: Urban Non-Residential Collector or Urban Residential Collector. Similar comment applies to Baptist Road, Old Denver Road, Lindbergh Road and Spatz Road (mainly identify if Rural or Urban).

- **Doolittle Road** is a Rural Local that extends east from Mt. Herman Lane to Rickenbacker Avenue. Doolittle Road has a gravel surface west of Lindbergh Road and is paved east of Lindbergh Road.
- **Spatz Road** is a gravel road that extends west from Rickenbacker Avenue to just west of Lindbergh Road.

Existing Traffic Conditions

Figure 3 shows the current morning and afternoon peak-hour traffic volumes at the intersections of Baptist Road/Old Denver Road, Lindbergh/Spatz, and Lindbergh/Doolittle based on counts conducted by LSC in April and July 2017. Figure 3 also shows estimated average weekday traffic volumes on key street segments. These volumes are estimates by LSC based on a 24-hour machine count conducted by LSC on Mesa Top Drive just east of Lindbergh Road and based on the peak-hour traffic counts. The traffic count reports are attached.

Figure 3 also shows the number of daily vehicle-trips on Lindberg Road that are estimated to be due to existing homes within the Forest Lakes development. This volume is an estimate by LSC based on the peak hour intersection turning movement patterns at the intersection of Doolittle/Lindberg and the area roadway system.

Existing 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 1 shows the level of service delay ranges.

Table 1 Intersection Levels of Service Delay Ranges			
Level of Service	Signalized Intersections		Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	V/C ⁽¹⁾	Average Control Delay (seconds per vehicle) ⁽²⁾
A	10.0 sec or less	less than 0.60	10.0 sec or less
B	10.1-20.0 sec	0.60-0.69	10.1-15.0 sec
C	20.1-35.0 sec	0.70-0.79	15.1-25.0 sec
D	35.1-55.0 sec	0.80-0.89	25.1-35.0 sec
E	55.1-80.0 sec	0.90-0.99	35.1-50.0 sec
F	80.1 sec or more	1.00 and greater	50.1 sec or more

(1) Source: *Transportation Research Circular 212*
(2) 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 intersections of Baptist Road/Old Denver Road, Lindbergh/Spatz, and Lindbergh/Doolittle were analyzed to determine the existing levels of service based on the unsignalized method of analysis procedures found in the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figure 3 shows the level of service analysis results. The level of service reports are attached.

All movements at the intersections of Baptist Road/Old Denver Road, Lindbergh/Spatz, and Lindbergh/Doolittle are currently operating at LOS A during the peak hours.

SHORT-TERM BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the adjacent streets without consideration of the proposed Phase II development. Background traffic includes the through traffic and the traffic generated by adjacent developments, but assumes zero traffic generated by the site. Figure 4a shows the projected short-term background traffic volumes. The short-term background traffic volumes are based on the existing traffic volumes shown in Figure 3 plus estimates of additional traffic estimated to be generated by the buildout of Forest Lakes Filings 1, 2 and 3.

Figures 4b shows the lane geometry, traffic control, and level of service at the key intersections based on the short-term background volumes.

2040 BACKGROUND TRAFFIC

Figure 5a shows the projected 20-year background traffic volumes for the year 2040. The 2040 background traffic volume estimates were based on the current traffic conditions, the expected development in the surrounding area, the *Baptist Road West Traffic Report* by Felsburg Holt & Ullevig dated August 2013, and other traffic studies completed in the area by LSC. The 2040 background/baseline traffic assumes buildout of Forest Lakes Phases I and III, including the future school site, but assumes zero traffic generated by Phase II. The background traffic also assumes additional development to the north of Baptist Road between Forest Lakes Drive and the railroad tracks.

List the growth rate used/assumed.

Figure 5b shows the lane geometry, traffic control, and level of service at the key intersections based on the 2040 background volumes.

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 2 shows the trip generation estimates for Phase II of the Forest Lakes development. Table 2 also shows the trip generation for the existing platted Filings 1 through 3 and buildout of the Forest Lakes master plan.

Ms. Andrea Barlow
Forest Lakes Phase II

Per ECM Appendix B.3.3.E.2, analytic support documentation of internal site trip shall be provided to show how trip adjustments are derived.

November 26, 2018
Traffic Impact Analysis

Once the proposed elementary school is constructed within the Forest Lakes master plan a portion of the trips were assumed to occur between the residential uses and the elementary school. As shown on Table 2 about 30 percent of the daily school trips were assumed to be internal to the Forest Lakes master plan area. The residential internal trips for the entire Forest Lakes development were then balanced with the calculated internal school trips (i.e., the number of existing internal residential trips was assumed to be equal to the number of entering internal school trips and vice versa). The resulting internal trip balance results in an assumption of about 6 percent of the residential trips internal within the Forest Lakes development.

Phase II of the Forest Lakes development is expected to generate about 1,699 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 33 vehicles would enter and 100 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 112 vehicles would enter and 66 vehicles would exit the site.

DIRECTIONAL DISTRIBUTION

The directional distribution of the site-generated traffic volumes on the area roadways is an important factor in determining the site's traffic impacts. Figure 6 shows the external directional distribution estimates for the site-generated traffic volumes. Figure 6 shows separate estimates for the short-term and the long-term. The long-term distribution estimate assumes development of the Forest Lakes Tech Center located south of the intersection of Baptist/Old Denver. The estimates are based on the following factors: the location of the site with respect to regional employment, commercial, and activity centers; the location of the site with respect to the Town of Monument, the Tri-Lakes region, and the balance of the City of Colorado Springs metropolitan area; the land use proposed for the site; the proposed access system for the site; and the roadway system serving the site.

SITE-GENERATED TRAFFIC

Figure 7 shows the projected short-term site-generated traffic volumes. The short-term site-generated traffic volumes were calculated by applying the directional distribution percentages (from Figure 7) to the total trip generation estimates from Table 2. The short-term site-generated traffic volumes assume all traffic is external to the Forest Lakes development.

Figure 8 shows the projected long-term site-generated traffic volumes. The long-term estimate assumes construction of the future elementary school to be located within Forest Lakes. As shown on Table 2, about six percent of the daily trips to and from the residential uses within Forest Lakes were assumed to travel to the elementary school in the long term. These internal trips have been assigned separately based on the location of the elementary school site.

Show on the figure's

SHORT-TERM TOTAL TRAFFIC

Figure 9a shows the projected short-term total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4a) plus the short-term site-generated traffic volumes from Figure 7.

Figures 9b show the lane geometry, traffic control, and level of service at the key intersections based on the short-term total volumes.

2040 TOTAL TRAFFIC

Figure 10a shows the projected total traffic volumes for the year 2040 volumes. The 2040 total traffic volumes are the sum of the long-term background traffic volumes (from Figure 5) plus the long-term site-generated traffic volumes from Figure 8.

Figure 10b shows the lane geometry, traffic control, and level of service at the key intersections based on the 2040 total traffic volumes.

PROJECTED LEVELS OF SERVICE

The intersections of Lindbergh/Spaatz, Lindbergh/Doolittle, Mesa Top/Forest Lakes, Long Valley/Forest Lakes, and Baptist/Old Denver have been analyzed to determine the projected future levels of service for the short-term and 2040 traffic volumes based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. Figures 4b and 5b show the level of service analysis results based on the projected background traffic volumes and Figures 9b and 10b show the level of service analysis results based on the projected total traffic volumes. The laneage and traffic control assumed in the analysis is depicted on the figures. The level of service reports are attached.

All movements at the two-way stop-sign-controlled intersections of Lindbergh/Spaatz and Lindbergh/Doolittle are projected to continue to operate at level of service A during the morning and afternoon peak hours based on the projected short-term and 2040 total traffic volumes.

All movements at the two-way stop-sign-controlled intersections of Mesa Top/Forest Lakes and Long Valley/Forest Lakes are projected to operate at B or better during the peak hours based on the projected short-term and 2040 total traffic volumes.

All movements at the intersection of Baptist/Old Denver are projected to operate at LOS B or better during the peak hours based on the projected short-term and 2040 total traffic volumes.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Phase II of the Forest Lakes development is expected to generate about 1,699 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 about 33 vehicles would enter and 100 vehicles would exit the site. During the afternoon peak hour about 112 vehicles would enter and 66 vehicles would exit the site.

Level of Service

The level of service section of this report presents the level of service analysis.

- The intersections of Lindbergh/Spatz and Lindbergh/Doolittle are projected to continue to operate at LOS A for all movements during the peak hours as two-way, stop-sign-controlled intersections based on the projected short-term and 2040 total traffic volumes.
- All movements at the two-way stop-sign-controlled intersections of Mesa Top/Forest Lakes and Long Valley/Forest Lakes are projected to operate at B or better during the peak hours based on the projected short-term and 2040 total traffic volumes.
- The intersection of Baptist/Old Denver is projected to operate at an overall level of service A during the morning peak hour and LOS B during the afternoon peak hour as a one-lane modern roundabout based on the projected 2040 total traffic volumes.

Street Classifications

- Figure 11 shows the recommended street classifications based on the projected buildout traffic volumes.

Lindbergh Road

- The existing average weekday traffic on Lindbergh Road south of Spatz Road is estimated to be about 525 vehicles per day. This currently exceeds the El Paso County maximum daily traffic volume threshold of 200 vehicles per day (ADT) for gravel roadways. Based on the existing peak hour turning movement pattern at the intersection of Doolittle/Lindberg and the area road system, LSC estimates that about 80 vehicles per day are generated by residents within Forest Lakes. This represents about 15 percent of the daily traffic on this link.
- By 2040 the projected average weekday volume on Lindbergh Road is projected to be 855 vehicles per day south of Spatz Road and 705 vehicles per day north of Spatz Road. The volume south of Spatz would exceed the design ADT of 750 vehicles per day for a Rural Local

Filing 1 required an escrow sufficient to pave Lindbergh Rd up to Doolittle Rd (Resolution No. 02-165) with the County making final determination.

The current TIS has now shown that traffic on Lindbergh Road has exceed 200 ADT; therefore per ECM 2.2.7.B.2 Paving Policy, the developer shall pave Lindbergh Rd up to Doolittle Rd with this phase.

set by the ECM. Phase II development is projected to contribute about 80 vehicles per day to this street segment.

Impact Fees

- This project has agreements in place with regard to the obligations to the Countywide Road Improvement Fee Program and the Baptist Road Rural Transportation Authority.


* * * * *

Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By


Jeffrey C. Hodsdon, P.E., PTOE
Principal

JCH:KDF:bjwb

Enclosures: Table 2
Figures 1-11
Traffic County Reports
Level of Service Reports

Verify/clarify. Looking through previous Forest Lakes application such as Forest Lakes 2 PUD (PUDSP152) it noted that development is subject to the EPC Road Impact Fee Program in accordance with the Resolution to Terminate the Development Agreement for Off-Site Transportation Improvements (Resolution 15-199).

Identify what option the developer will be selecting for payment.

State whether the MTCP or other approved corridor study calls for the construction of improvements in the immediate area.

Add a reference section and list other traffic studies by the consultant in the area of study within the past five years. State whether the current study is consistent with those studies and explain any discrepancies.

**Table 2
Trip Generation Estimate
Forest Lakes Phase II**

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾				Total Trips Generated				Daily Internal Trips	Total "External" Trips Generated Following Opening of Elementary School						
			Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour			Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
				In	Out	In	Out		In	Out		In	Out		In	Out		
Trip Generation Estimate Based on Existing, Currently Proposed, and Planned Future Filings																		
Phase II (Currently Proposed)																		
210	Single-Family Detached Housing	180 DU ⁽²⁾	9.44	0.19	0.56	0.62	0.37	1,699	33	100	112	66	6%	1,600	25	81	107	64
Phase I: Filings 1, 2, and 3 (Approved Filings Currently Under Construction)																		
210	Single-Family Detached Housing	273 DU	9.44	0.19	0.56	0.62	0.37	2,577	51	152	170	100	6%	2,426	39	123	163	97
	Total Phases I & II	453 DU						4,276	84	252	282	166		4,026	64	204	270	161
Phase III (Future)																		
210	Single-Family Detached Housing	61 DU	9.44	0.19	0.56	0.62	0.37	576	11	34	38	22	6%	542	8	28	36	21
	Total Phases I, II & III	514 DU						4,852	95	286	320	188		4,568	72	232	306	182
Future School Site																		
520	Elementary School	500 Student	1.89	0.36	0.31	0.08	0.09	945	181	154	41	44	30%	661	127	131	35	31
	Total at Full Buildout							5,797	276	440	361	232		5,229	199	363	341	213
Trip Generation Estimate from 2001 Master Plan Study ⁽³⁾																		
210	Single-Family Detached Housing	466 DU	9.57	0.19	0.56	0.65	0.36	4,460	87	262	301	169	---	---	---	---	---	---
	Change (Increase) From 2001 Master Plan Study							392	8	24	19	19						

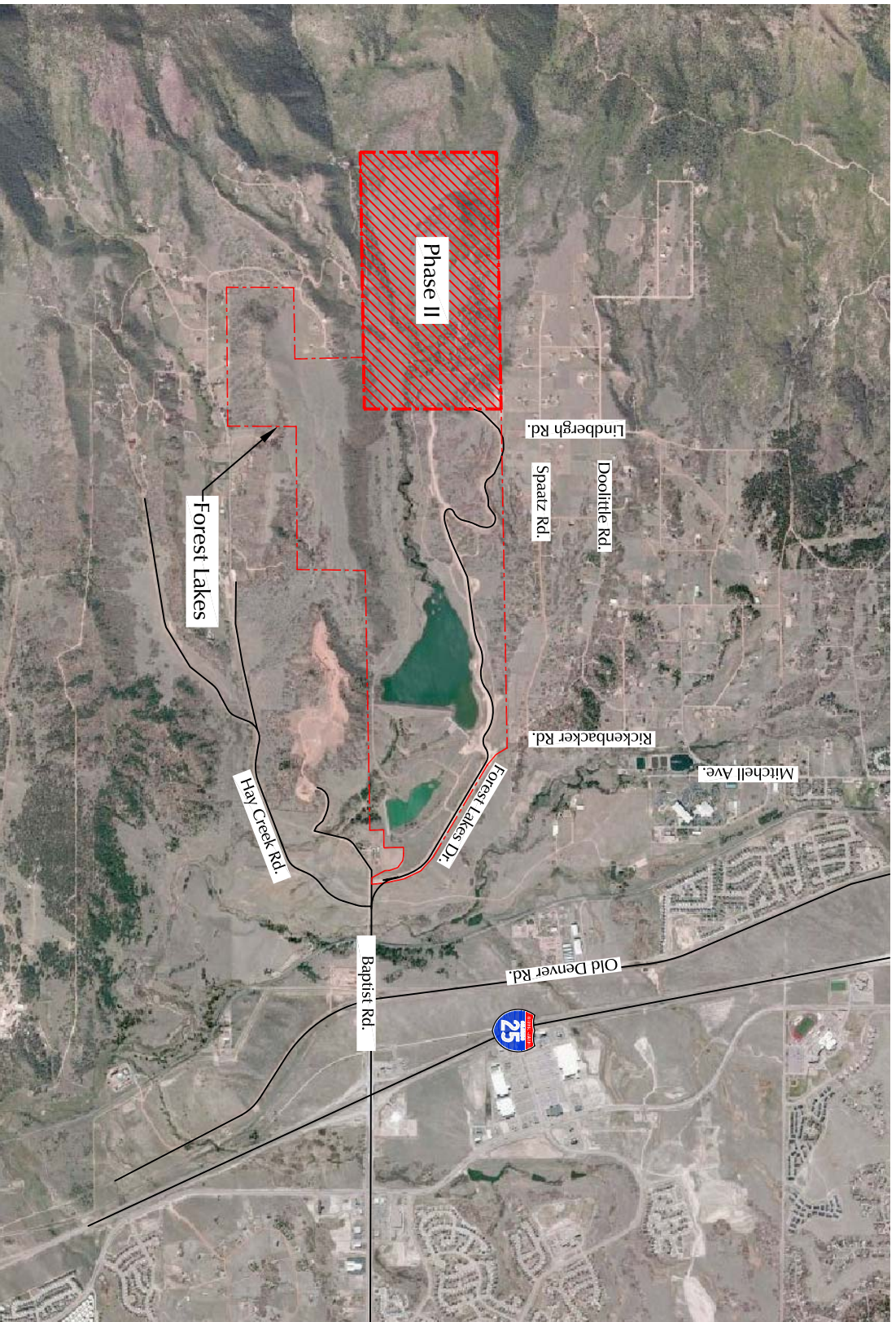
Notes:

(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling unit

(3) Source: "Forest Lakes Traffic Impact and Access Analysis" by LSC August 13, 2001

Source: LSC Transportation Consultants, Inc.

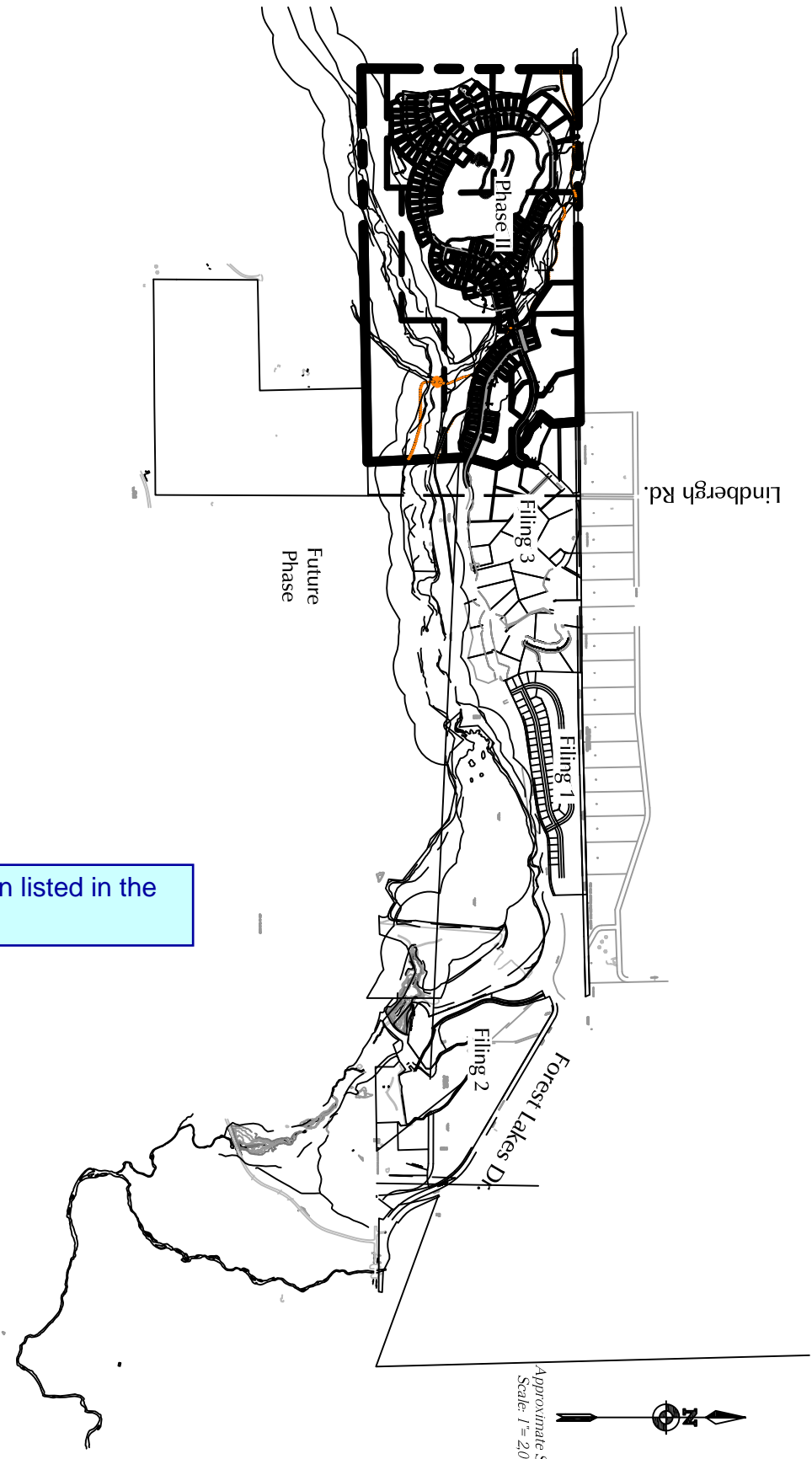


Approximate Scale
Scale: 1" = 3,000'

Figure 1

Vicinity Map

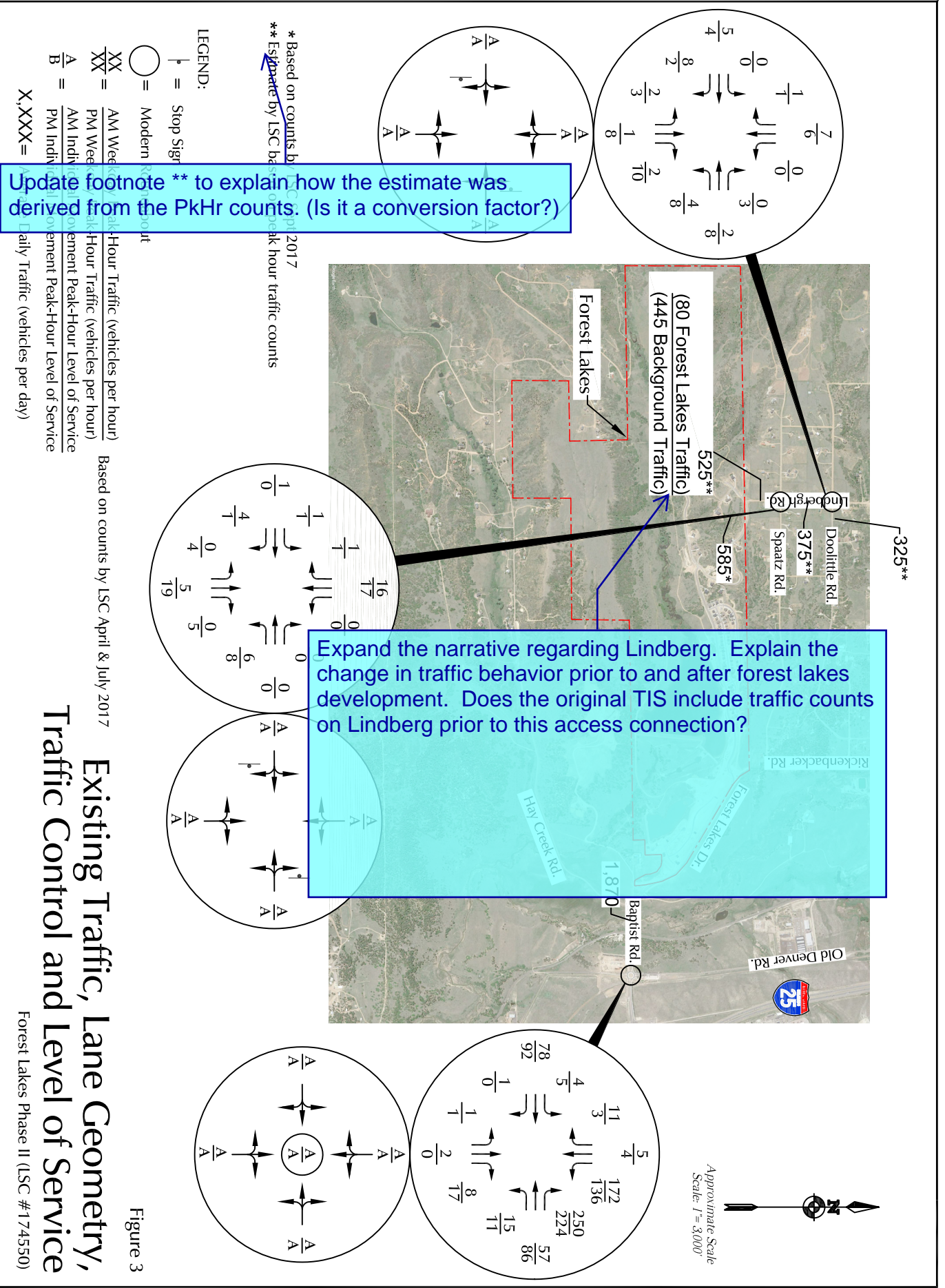
Forest Lakes Phase II (LSC #174550)



Label the future school site location listed in the trip generation table.

Figure 2
**Site
 Plan**

Forest Lakes Phase II (LSC #174550)



Update footnote ** to explain how the estimate was derived from the PkHr counts. (Is it a conversion factor?)

Expand the narrative regarding Lindberg. Explain the change in traffic behavior prior to and after forest lakes development. Does the original TIS include traffic counts on Lindberg prior to this access connection?

Existing Traffic, Lane Geometry, Traffic Control and Level of Service
 Forest Lakes Phase II (LSC #174550)

Figure 3

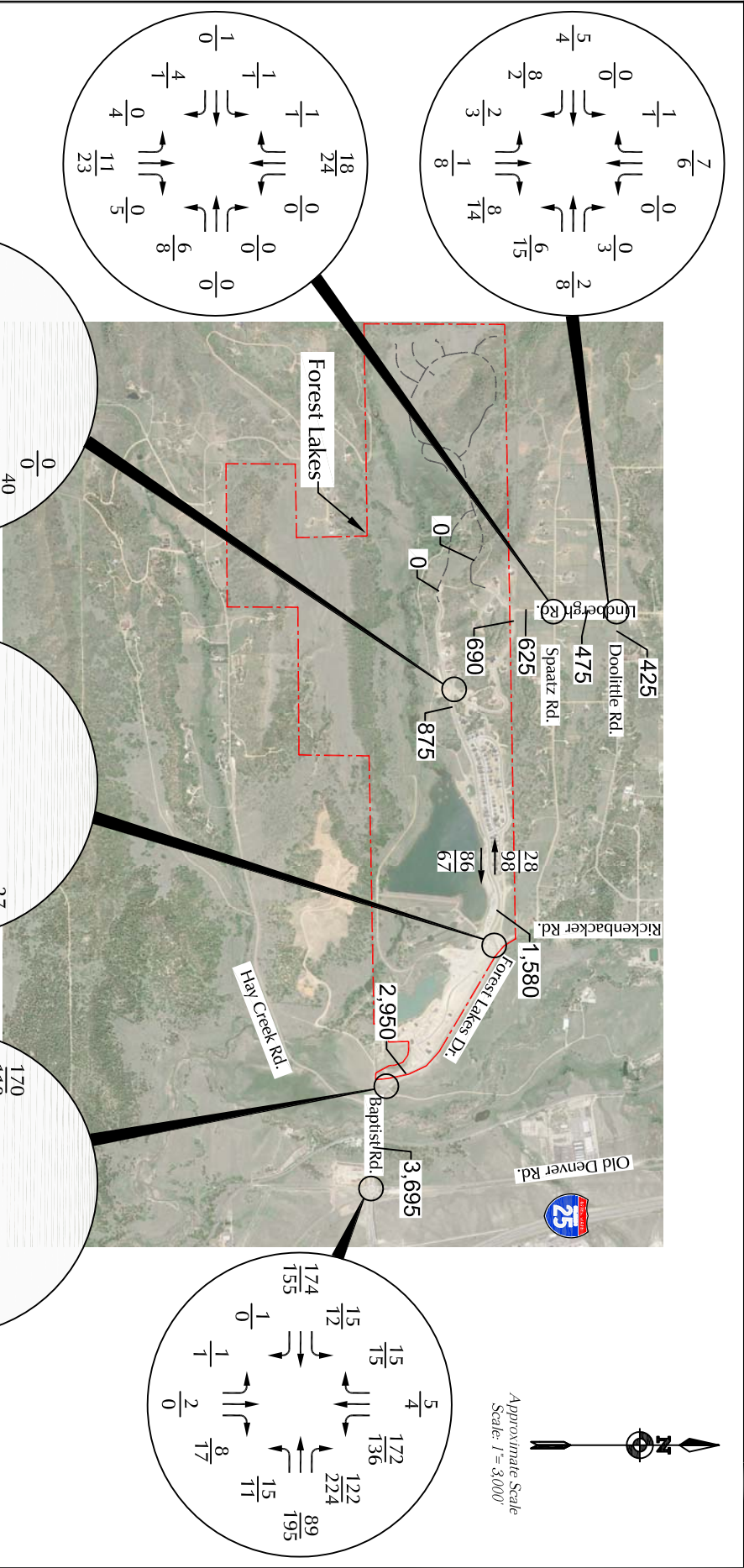
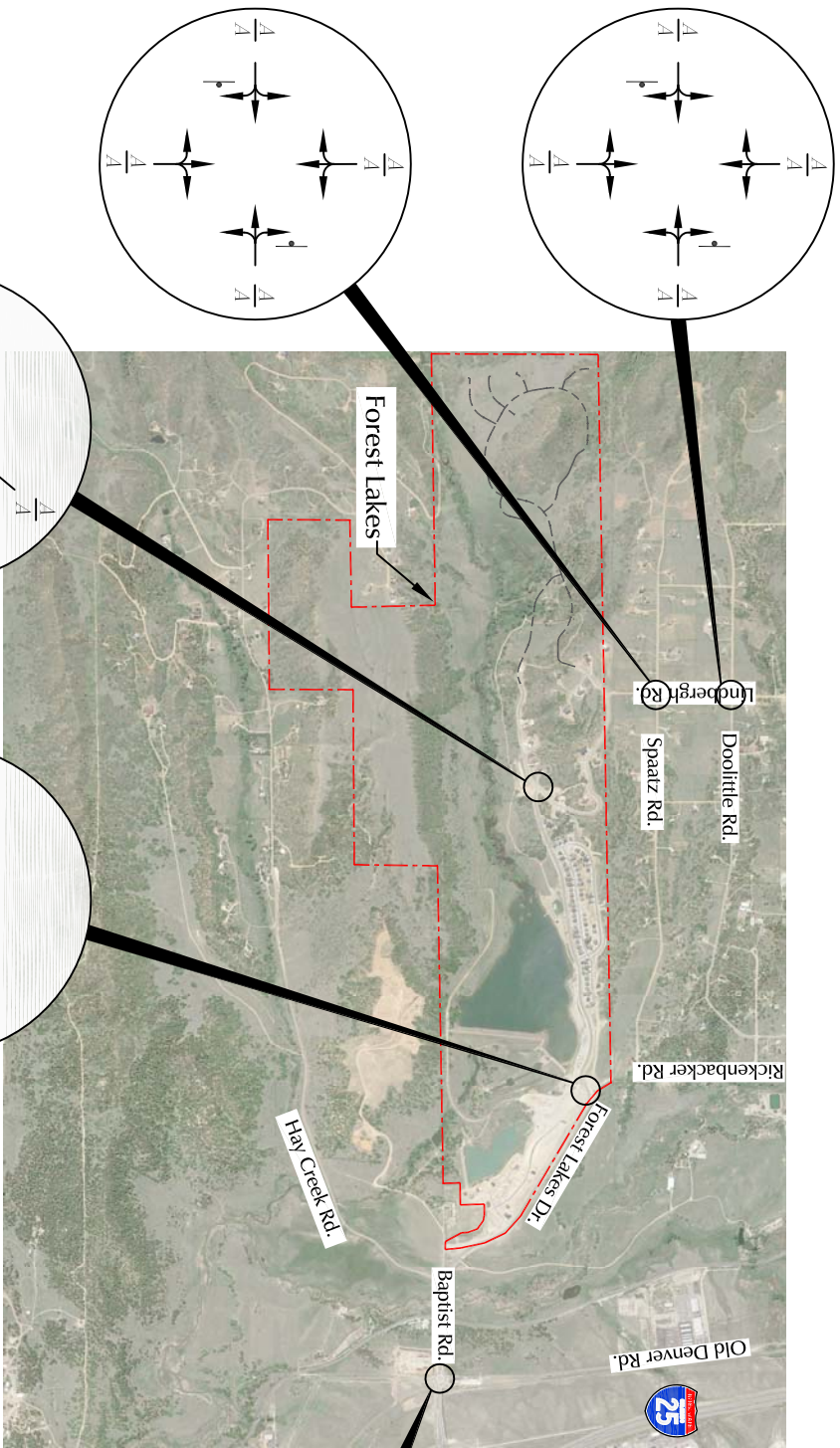


Figure 4a

Short-Term Background Traffic

Forest Lakes Phase II (LSC #174550)



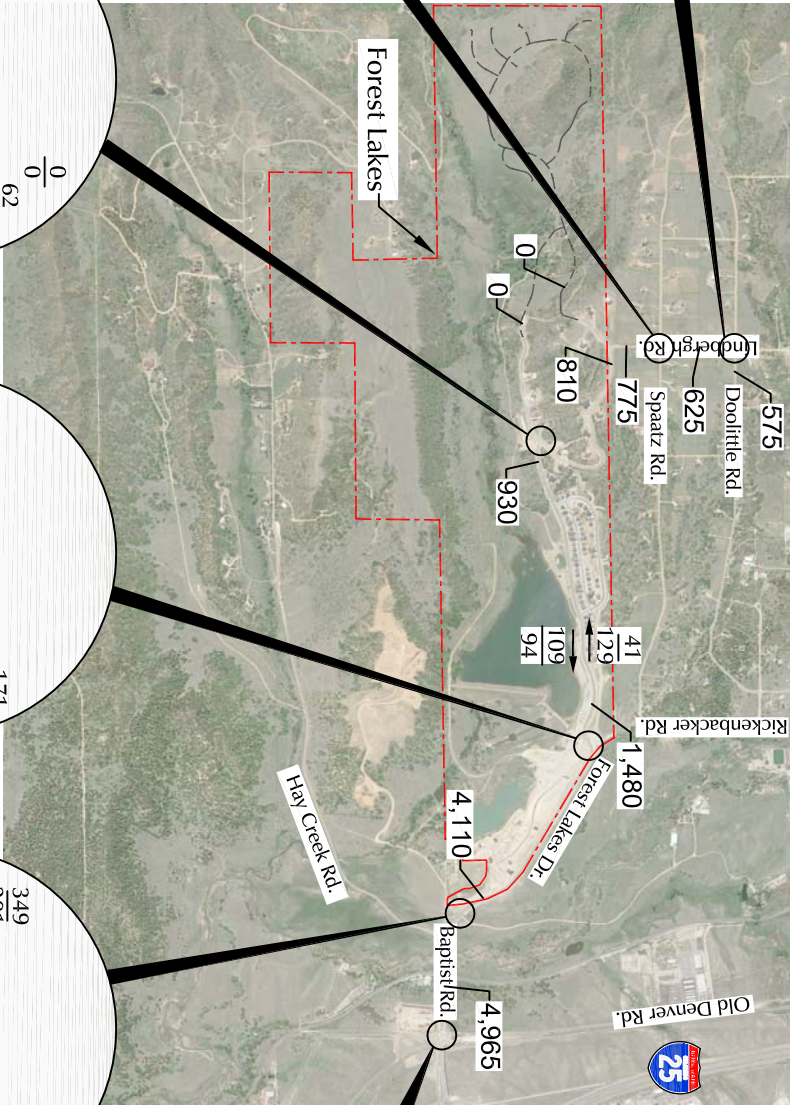
Approximate Scale
Scale: 1" = 3,000'

- LEGEND:
- ⊥ = Stop Sign
 - = Modern Roundabout
 - $\frac{A}{A}$ = AM Individual Movement Peak+Hour Level of Service
 - $\frac{B}{A}$ = PM Individual Movement Peak+Hour Level of Service

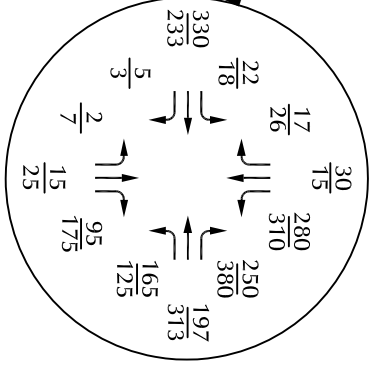
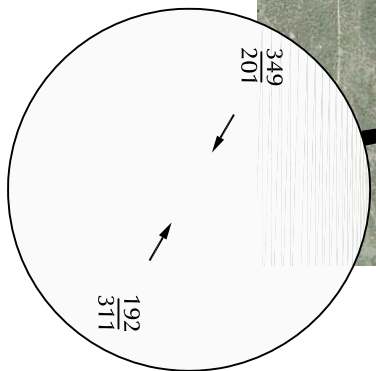
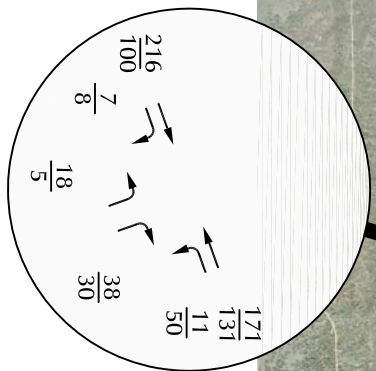
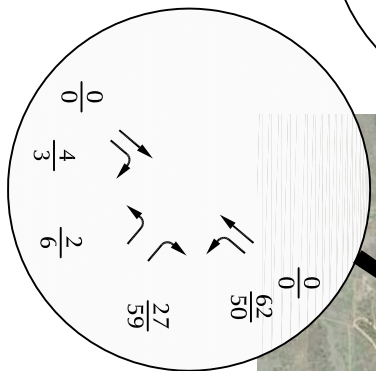
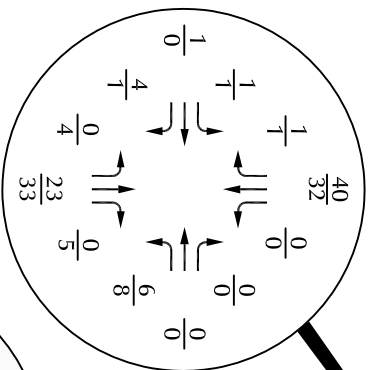
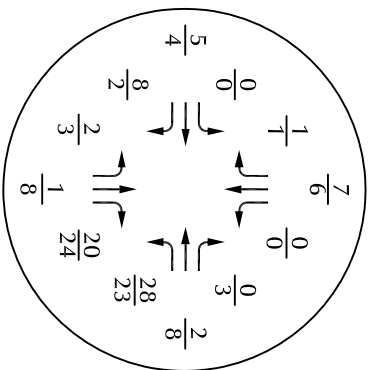
Short-Term Background Lane Geometry, Traffic Control and Level of Service

Forest Lakes Phase II (LSC #174550)

Figure 4b



Approximate Scale
Scale: 1" = 3,000'



LEGEND:

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

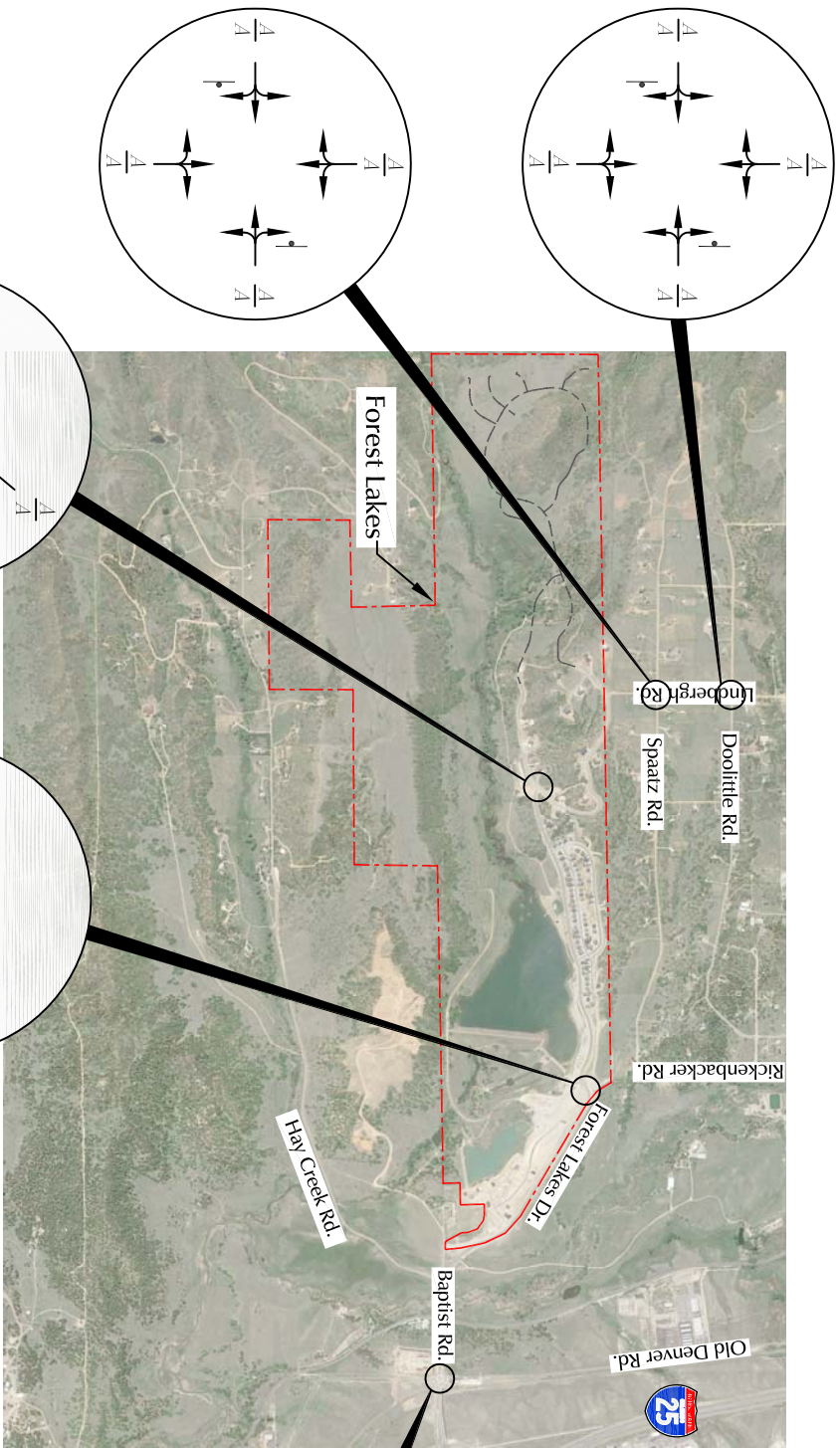
X,XXX = Average Daily Traffic (vehicles per day)

Year 2040

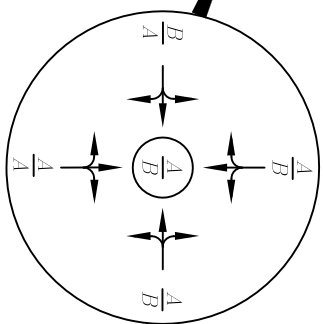
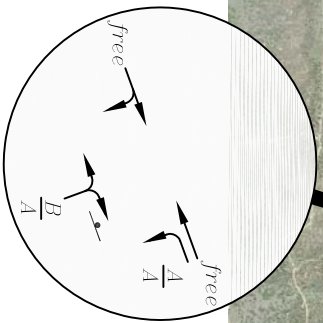
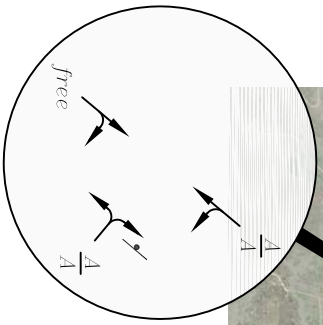
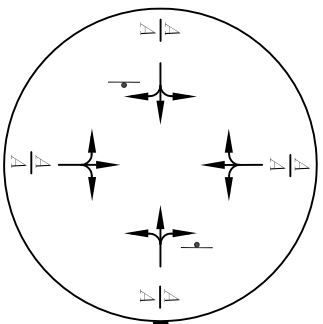
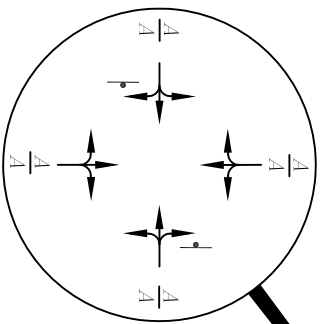
Background Traffic

Forest Lakes Phase II (LSC #174550)

Figure 5a



Approximate Scale
Scale: 1" = 3,000'



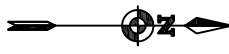
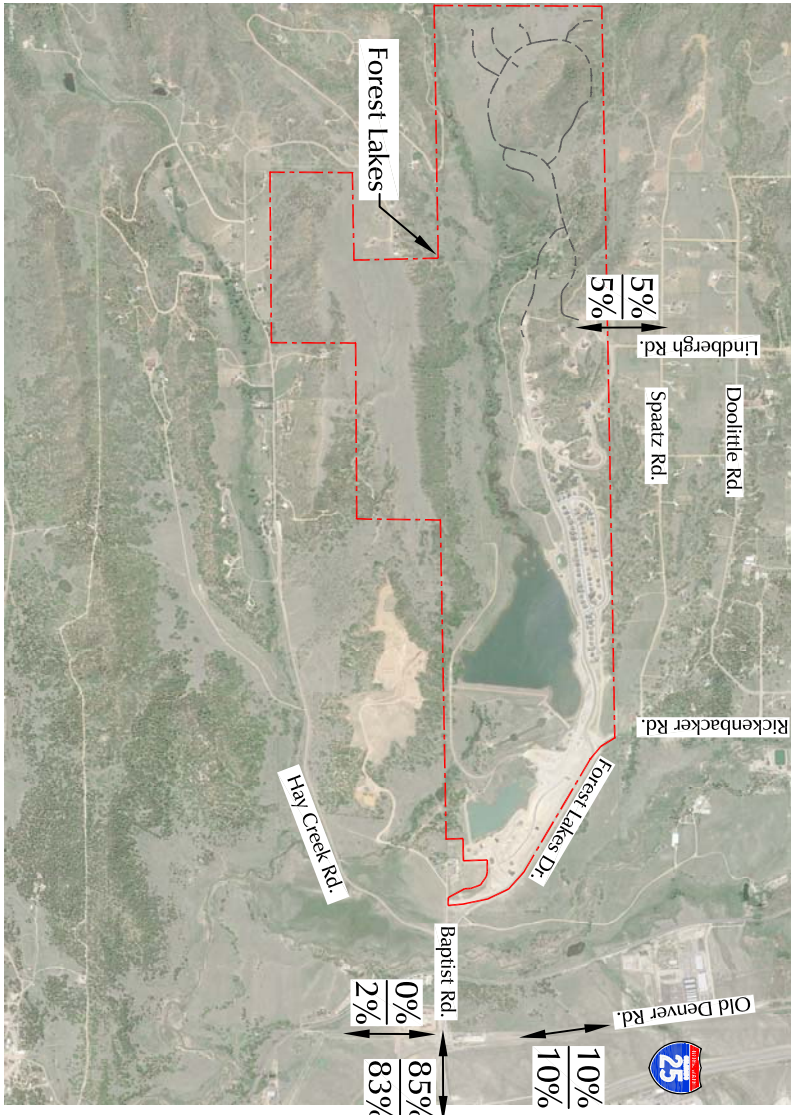
LEGEND:

- ⊥ = Stop Sign
- = Modern Roundabout
- $\frac{A}{A}$ = AM Individual Movement Peak+Hour Level of Service
- $\frac{B}{A}$ = PM Individual Movement Peak+Hour Level of Service

Figure 5b

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

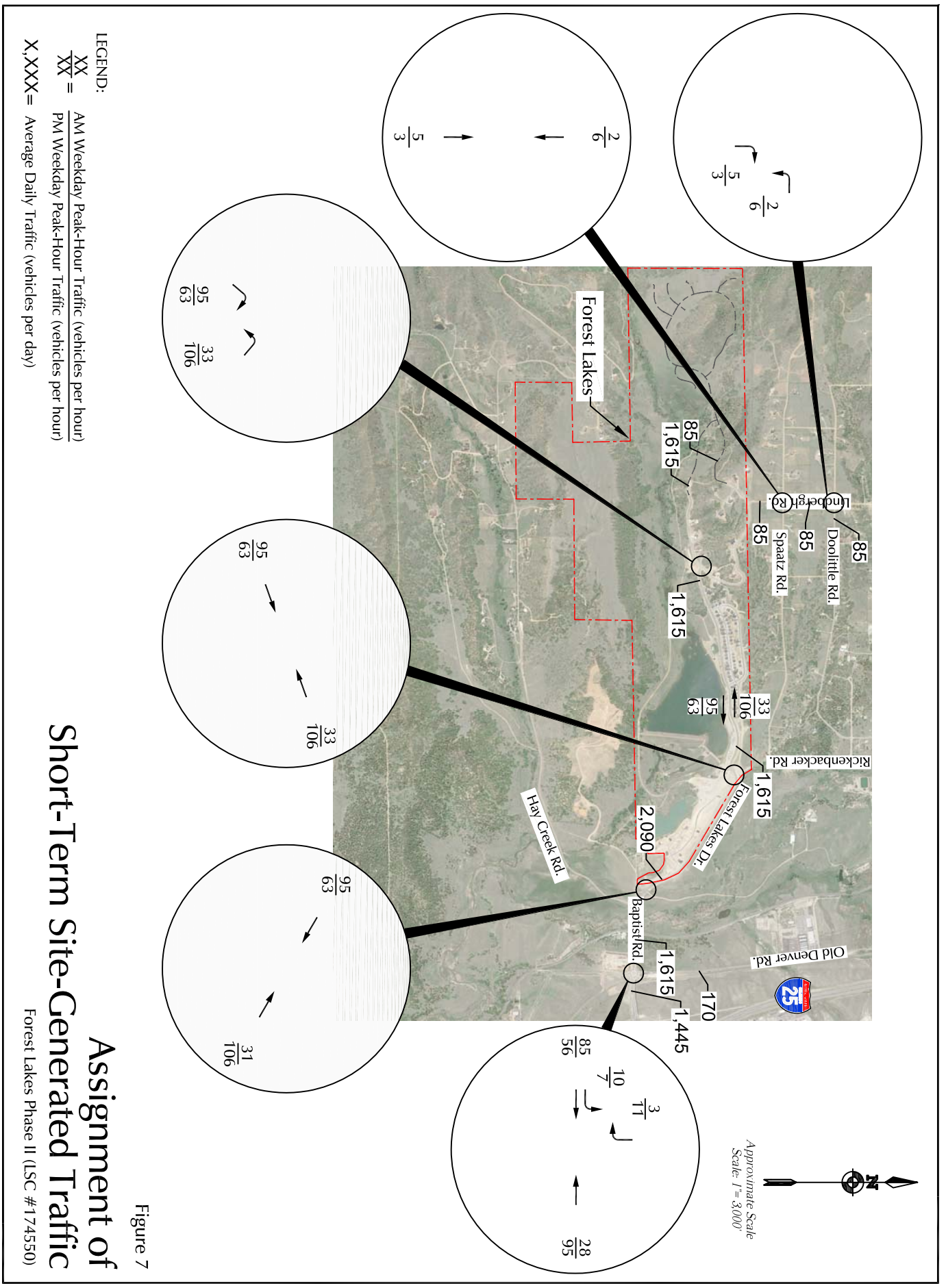
Forest Lakes Phase II (LSC #174550)

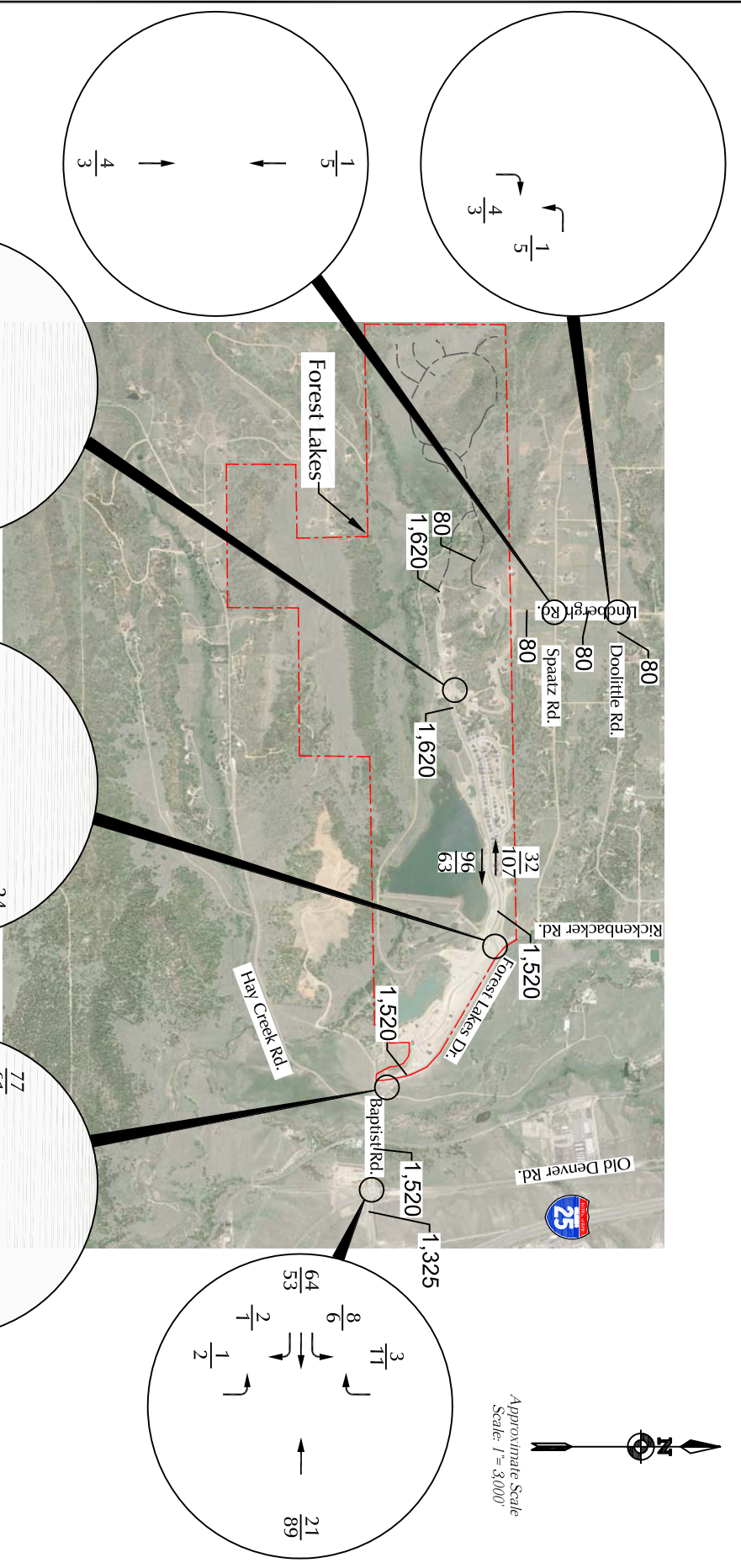


Approximate Scale
Scale: 1" = 3,000'

LEGEND:
 XX% \longleftrightarrow Short-Term Percent Directional Distribution
 XX% \longleftrightarrow = 2040 Percent Directional Distribution

Figure 6
Directional Distribution
of Site-Generated Traffic
 Forest Lakes Phase II (LSC #174550)





Approximate Scale
Scale: 1" = 3,000'

LEGEND:

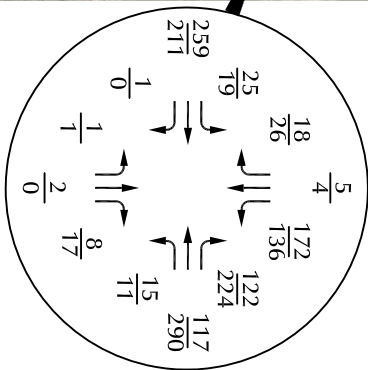
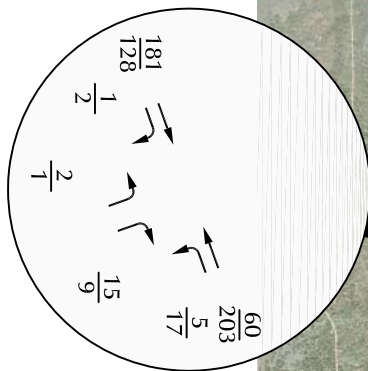
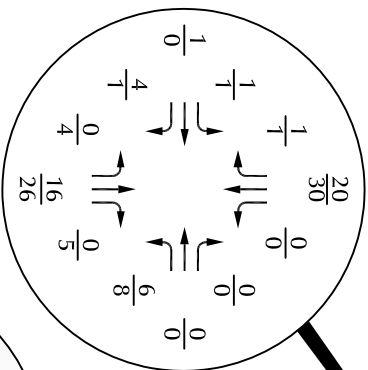
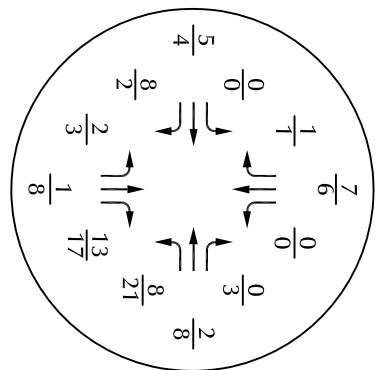
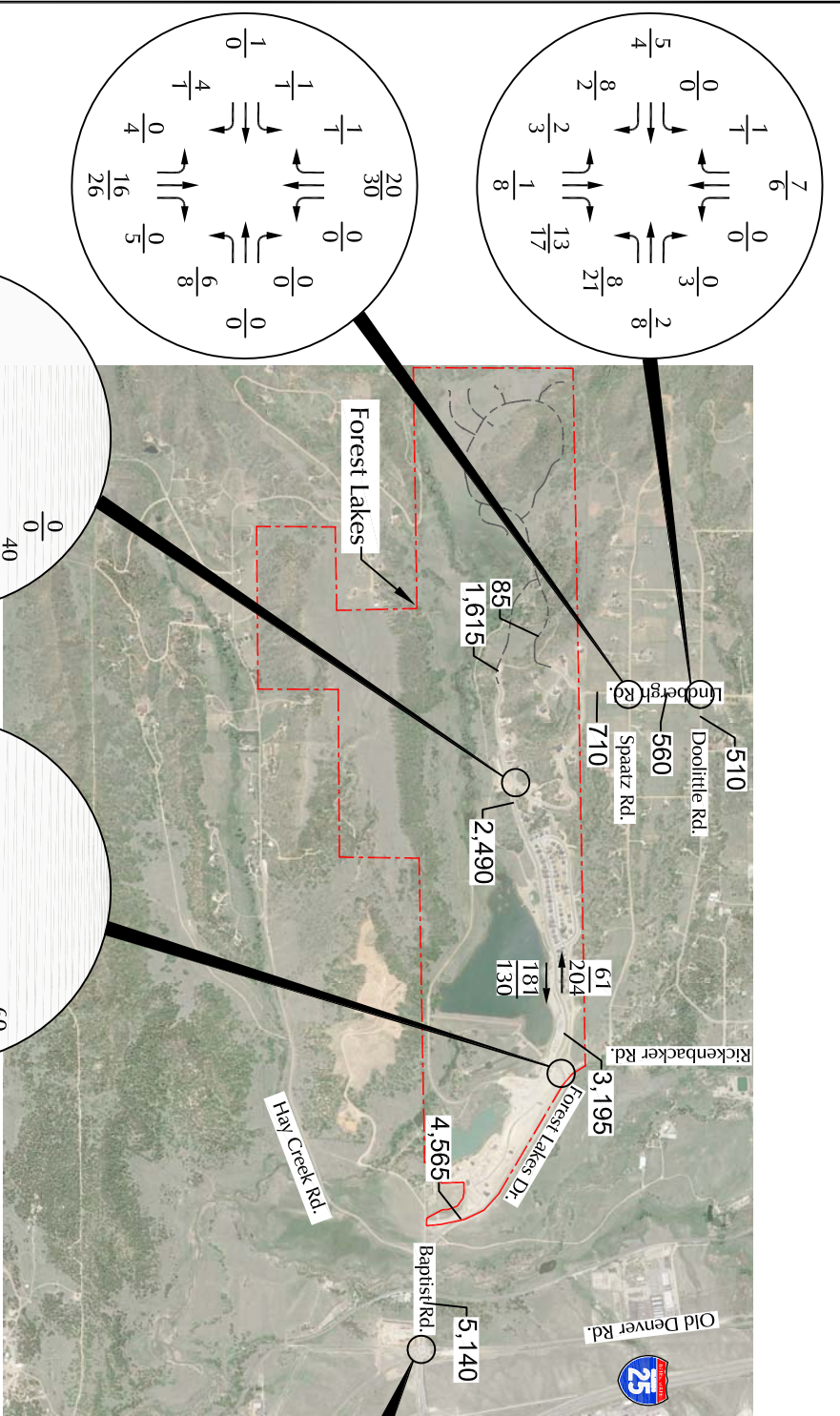
$\frac{XX}{XX}$ = AM Weekday / Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday / Peak-Hour Traffic (vehicles per hour)

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

Figure 8

Assignment of 2040 Site-Generated Traffic

Forest Lakes Phase II (LSC #174550)



LEGEND:

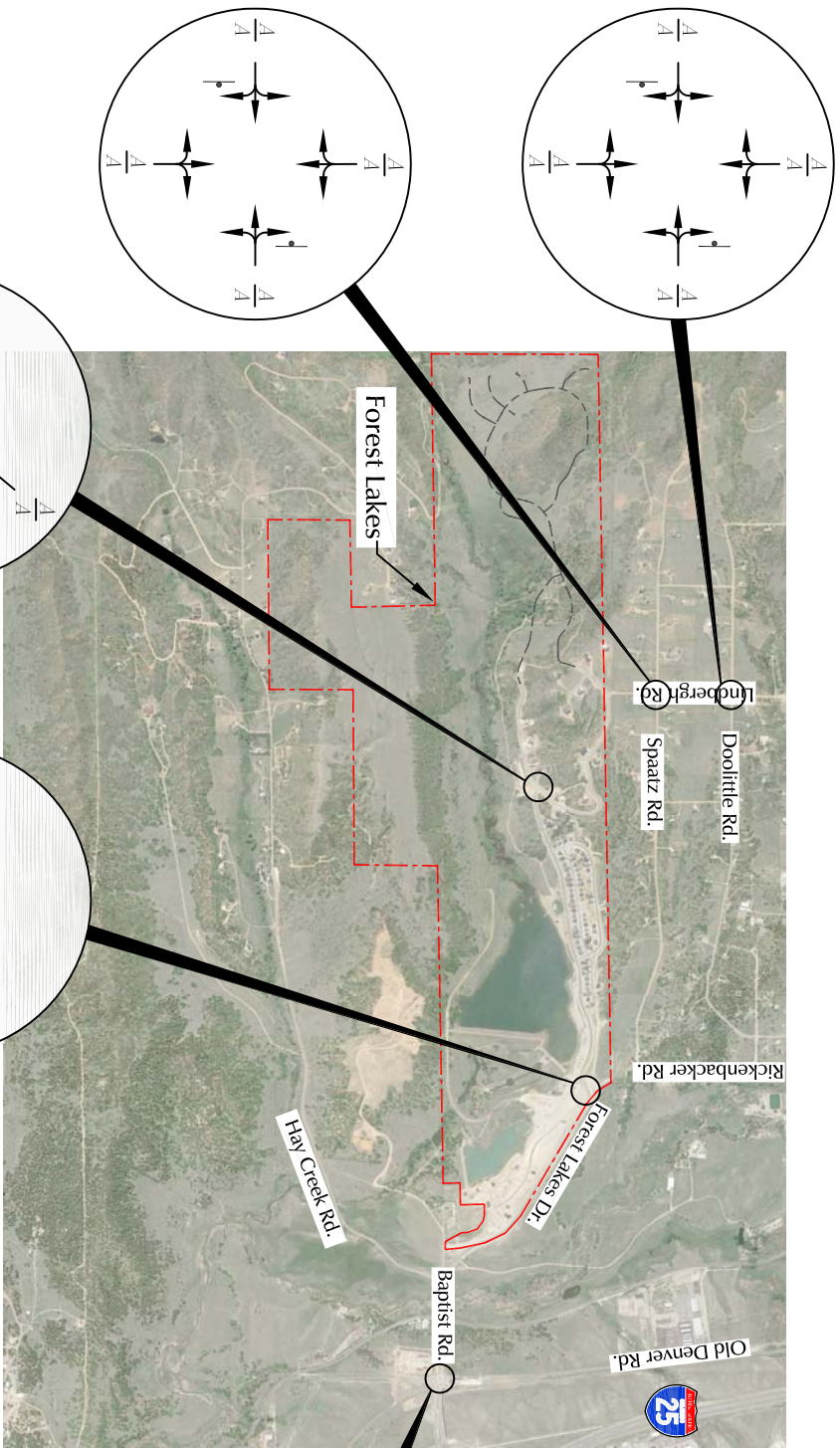
XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
 XX = PM Weekday Peak-Hour Traffic (vehicles per hour)

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

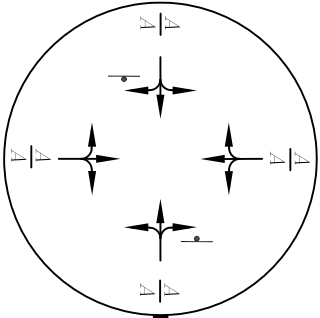
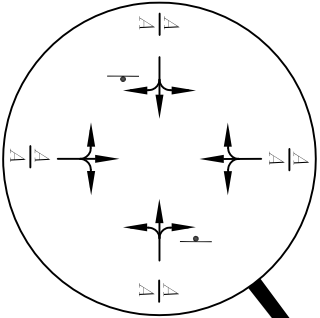
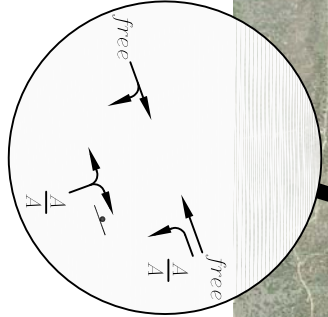
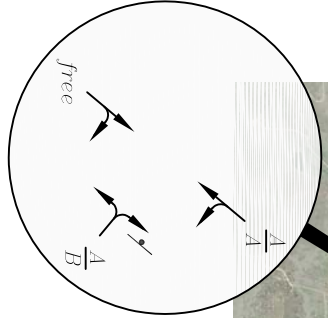
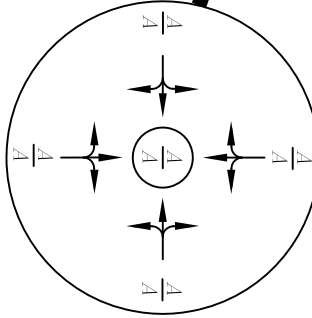
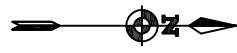
Short-Term
Total Traffic

Figure 9a

Forest Lakes Phase II (LSC #174550)



Approximate Scale
Scale: 1" = 3,000'

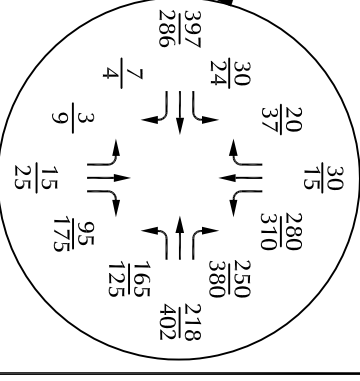
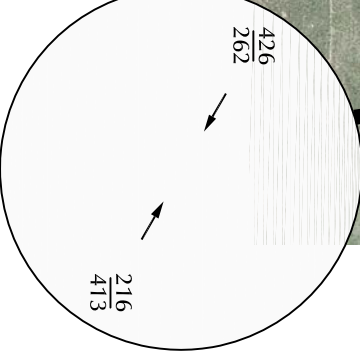
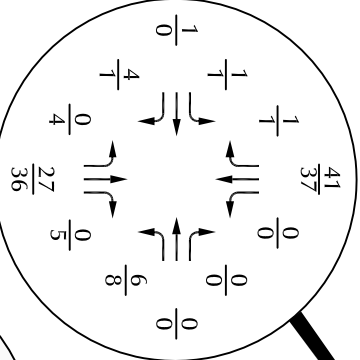
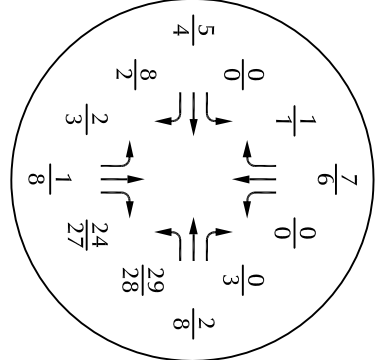
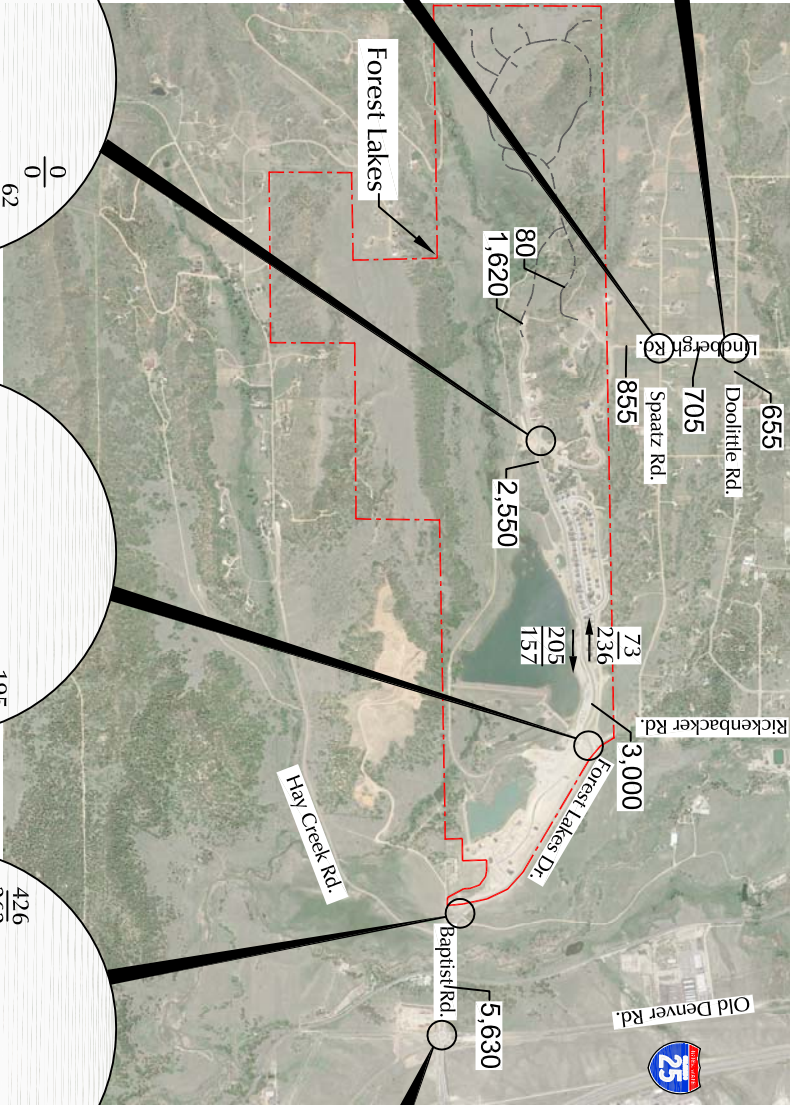


- LEGEND:
- = Stop Sign
 - = Modern Roundabout
 - = AM Individual Movement Peak+Hour Level of Service
 - = PM Individual Movement Peak+Hour Level of Service

Figure 9b

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

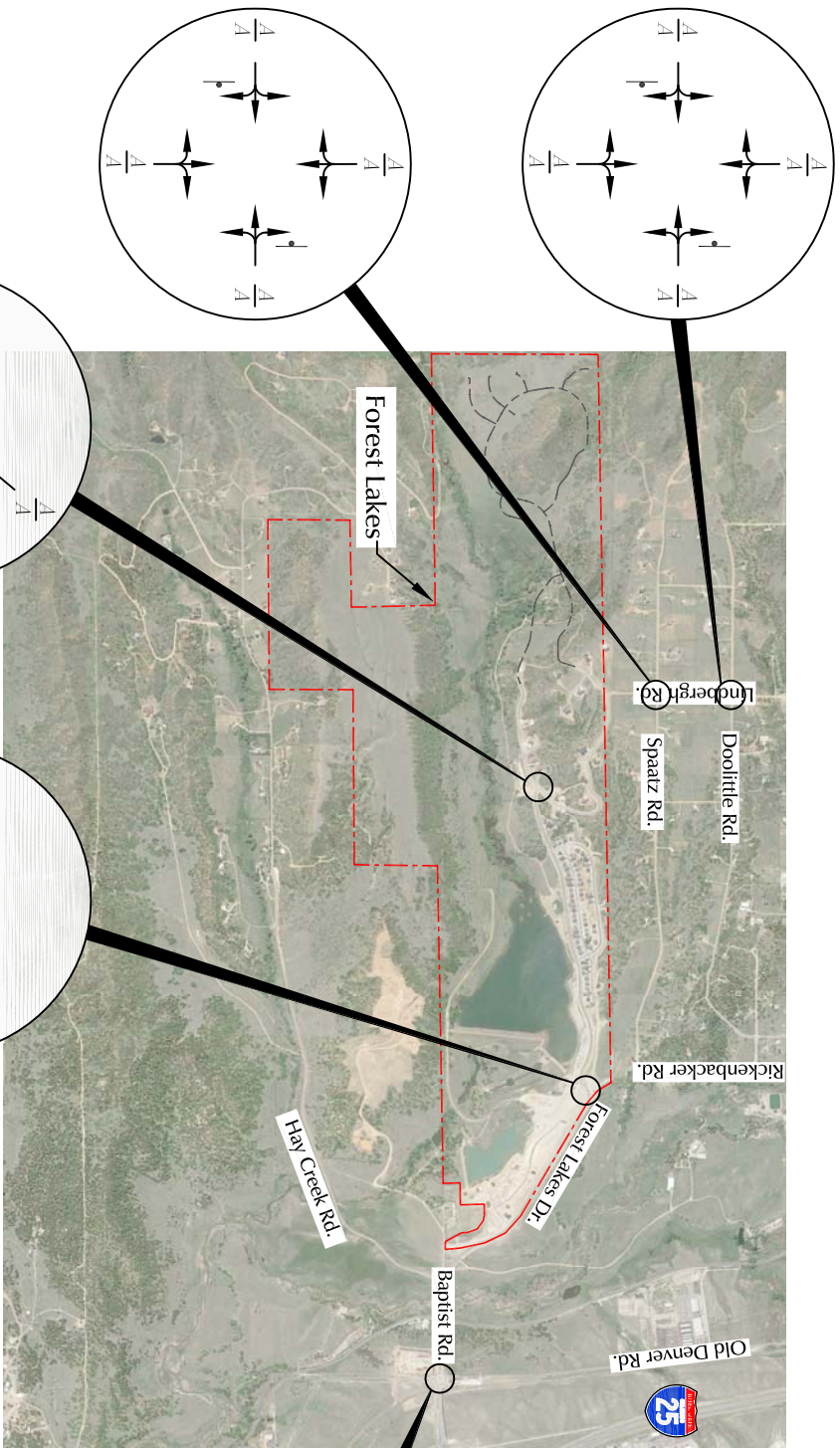
Forest Lakes Phase II (LSC #174550)



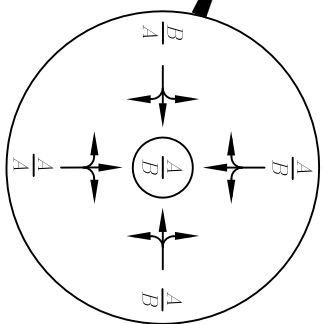
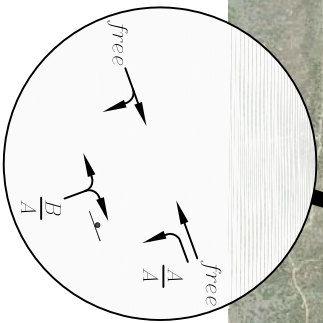
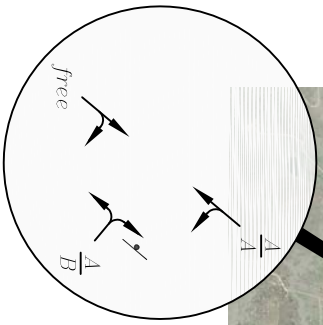
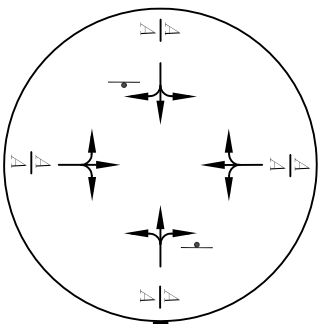
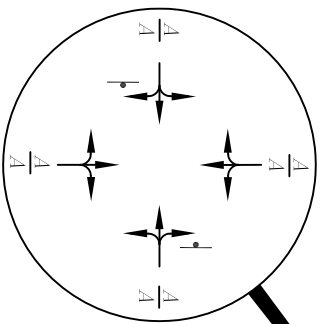
Approximate Scale
Scale: 1" = 3,000'

LEGEND:
 XX = AM Weekday Peak-Hour Traffic (vehicles per hour)
 XX = PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX = Average Daily Traffic (vehicles per day)

Figure 10a
 Year 2040
 Total Traffic
 Forest Lakes Phase II (LSC #174550)



Approximate Scale
Scale: 1" = 3,000'



LEGEND:

⊥ = Stop Sign

○ = Modern Roundabout



$\frac{A}{A}$ = AM Individual Movement Peak+Hour Level of Service

$\frac{B}{B}$ = PM Individual Movement Peak+Hour Level of Service

Figure 10b

Year 2040 Lane Geometry, Traffic Control and Level of Service

Forest Lakes Phase II (LSC #174550)

LEGEND:
 = Urban Local
 = Urban Local (Low Volume)

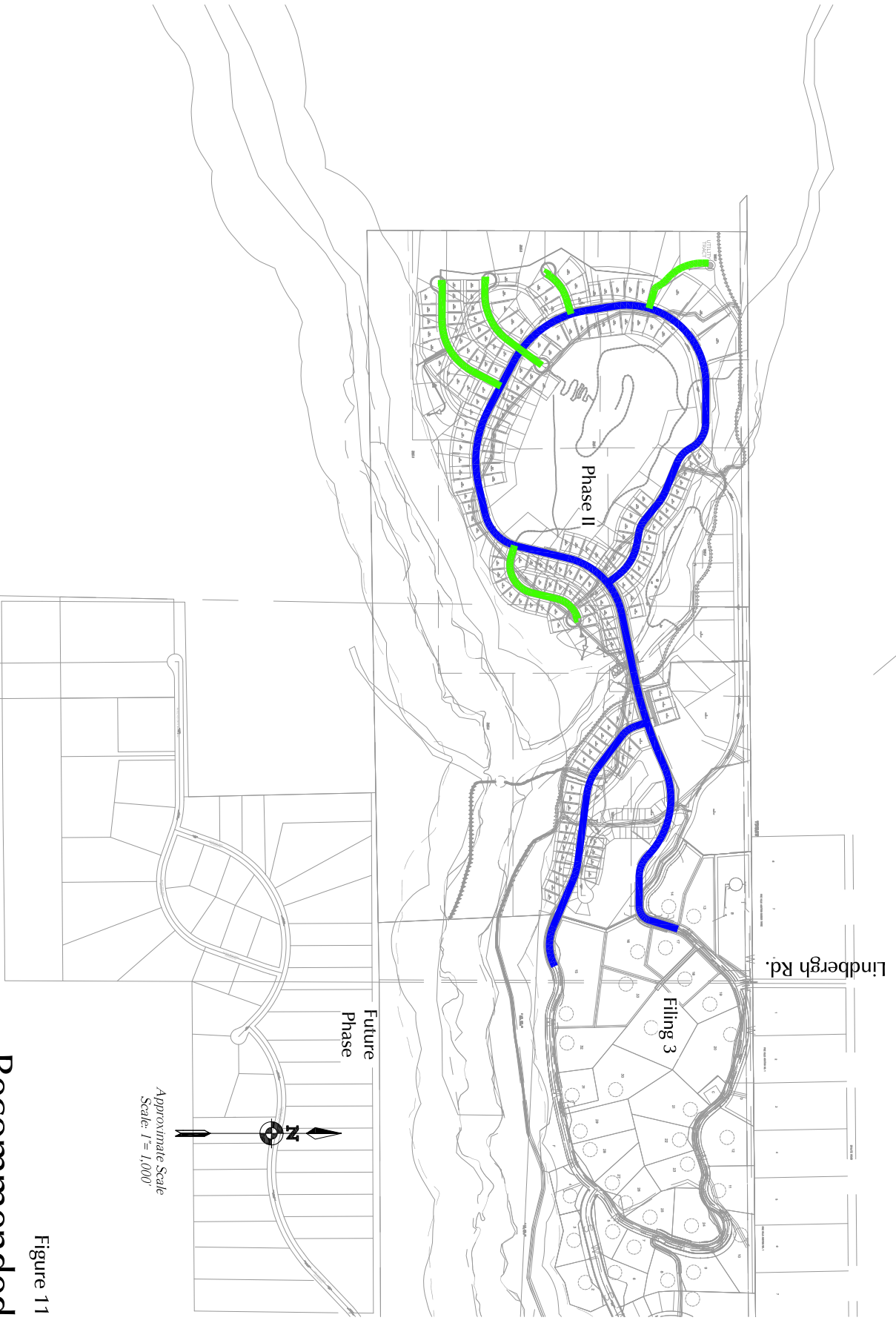


Figure 11

Recommended Classification

Forest Lakes Phase II (LSC #174550)

Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Lindbergh Rd - Doolittle Rd AM
 Site Code : 00174550
 Start Date : 07/20/2017
 Page No : 1

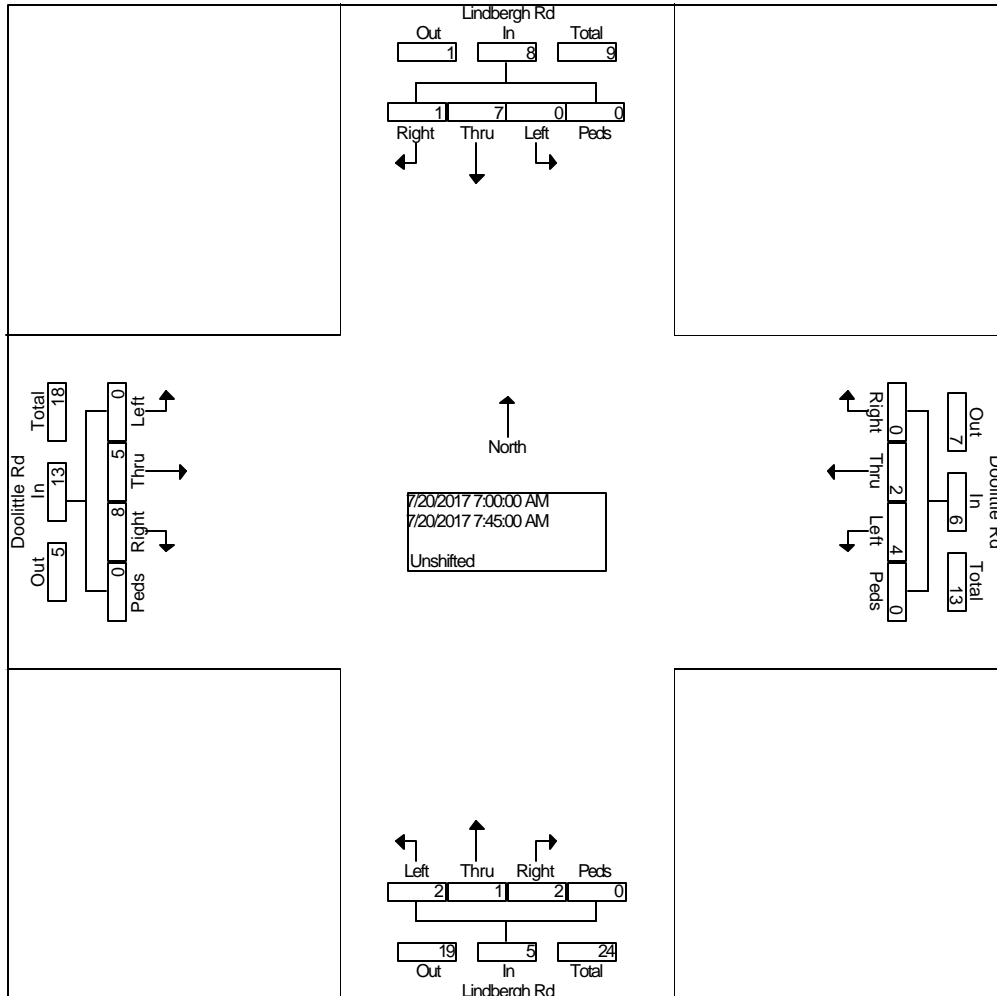
Groups Printed- Unshifted

Start Time	Lindbergh Rd From North				Doolittle Rd From East				Lindbergh Rd From South				Doolittle Rd From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	2	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4
06:45 AM	0	1	0	0	0	0	1	0	1	0	1	0	2	1	0	0	7
Total	0	3	0	0	0	0	2	0	1	1	1	0	2	1	0	0	11
07:00 AM	0	1	0	0	0	1	2	0	1	0	0	0	3	1	0	0	9
07:15 AM	0	1	0	0	0	0	1	0	0	0	1	0	2	0	0	0	5
07:30 AM	0	3	0	0	0	1	1	0	0	0	1	0	2	2	0	0	10
07:45 AM	1	2	0	0	0	0	0	0	1	1	0	0	1	2	0	0	8
Total	1	7	0	0	0	2	4	0	2	1	2	0	8	5	0	0	32
08:00 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Grand Total	1	12	0	0	0	2	6	0	3	3	3	0	10	8	1	0	49
Apprch %	7.7	92.3	0.0	0.0	0.0	25.0	75.0	0.0	33.3	33.3	33.3	0.0	52.6	42.1	5.3	0.0	
Total %	2.0	24.5	0.0	0.0	0.0	4.1	12.2	0.0	6.1	6.1	6.1	0.0	20.4	16.3	2.0	0.0	

Counts by LSC

File Name : Lindbergh Rd - Doolittle Rd AM
 Site Code : 00174550
 Start Date : 07/20/2017
 Page No : 2

Start Time	Lindbergh Rd From North					Doolittle Rd From East					Lindbergh Rd From South					Doolittle Rd From West					Int. Total
	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	1	7	0	0	8	0	2	4	0	6	2	1	2	0	5	8	5	0	0	13	32
Percent	12.5	87.5	0.0	0.0		0.0	33.3	66.7	0.0		40.0	20.0	40.0	0.0		61.5	38.5	0.0	0.0		
07:30 Volume	0	3	0	0	3	0	1	1	0	2	0	0	1	0	1	2	2	0	0	4	10
Peak Factor	0.800																				
High Int.	07:30 AM																				
Volume	0	3	0	0	3	0	1	2	0	3	1	1	0	0	2	3	1	0	0	4	8
Peak Factor	0.66					0.50					0.62					0.81					



Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Lindbergh Rd - Doolittle Rd PM
 Site Code : 00174550
 Start Date : 07/27/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	Lindbergh Rd From North				Dolittle Rd From East				Lindbergh Rd From South				Dolittle Rd From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	1	1	0	0	0	2	1	0	3	1	1	0	1	0	0	0	11
04:15 PM	0	3	0	0	0	3	2	0	0	2	0	0	0	1	0	0	11
04:30 PM	0	2	0	0	2	2	5	0	3	2	0	0	1	3	0	0	20
04:45 PM	0	0	0	0	1	1	0	0	4	3	2	0	0	0	0	0	11
Total	1	6	0	0	3	8	8	0	10	8	3	0	2	4	0	0	53
05:00 PM	1	2	0	0	0	3	1	0	2	1	1	0	0	0	0	0	11
05:15 PM	0	1	0	0	0	0	2	0	0	2	2	0	1	1	0	0	9
05:30 PM	0	0	0	0	0	0	2	0	3	2	1	0	0	1	0	0	9
05:45 PM	0	4	0	0	0	0	1	0	1	3	1	0	0	1	0	0	11
Total	1	7	0	0	0	3	6	0	6	8	5	0	1	3	0	0	40
Grand Total	2	13	0	0	3	11	14	0	16	16	8	0	3	7	0	0	93
Apprch %	13.3	86.7	0.0	0.0	10.7	39.3	50.0	0.0	40.0	40.0	20.0	0.0	30.0	70.0	0.0	0.0	
Total %	2.2	14.0	0.0	0.0	3.2	11.8	15.1	0.0	17.2	17.2	8.6	0.0	3.2	7.5	0.0	0.0	

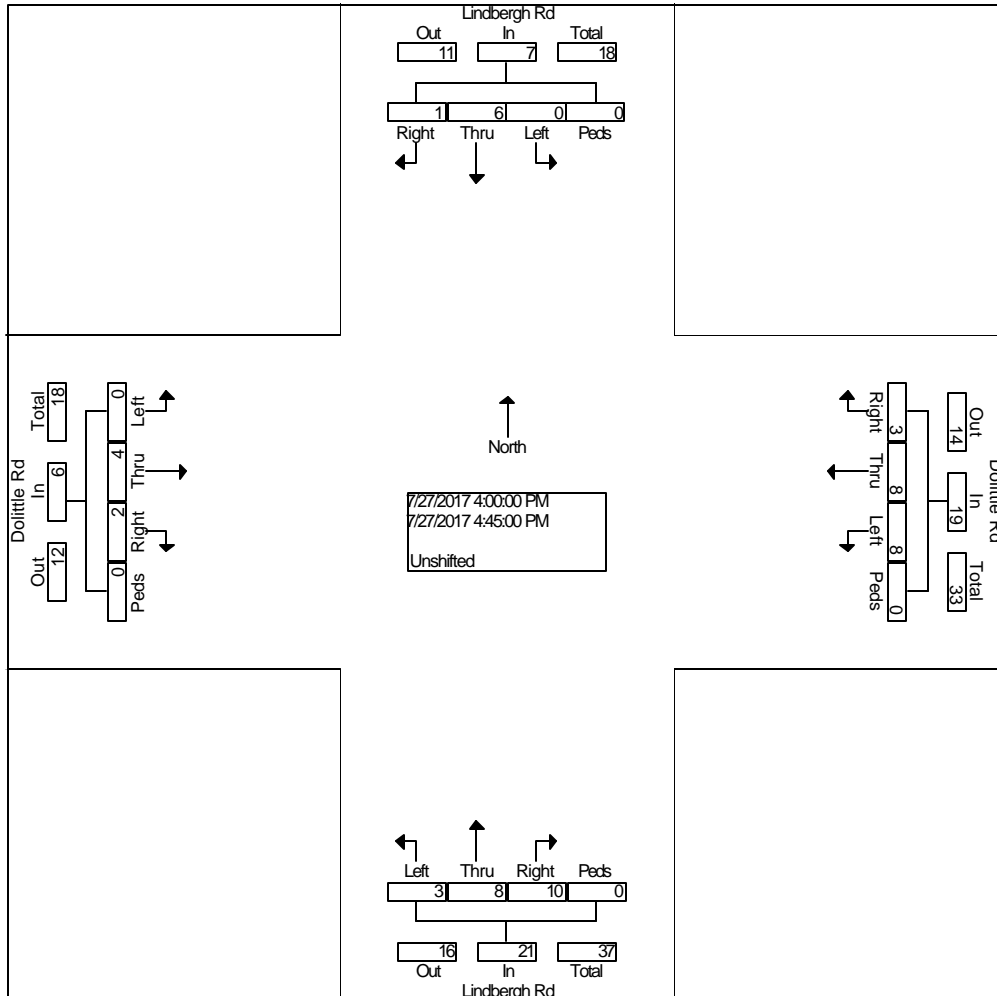
Counts by LSC

File Name : Lindbergh Rd - Doolittle Rd PM
 Site Code : 00174550
 Start Date : 07/27/2017
 Page No : 2

Start Time	Lindbergh Rd From North					Dolittle Rd From East					Lindbergh Rd From South					Dolittle Rd From West					Int. Total
	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	

Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1

Intersection	04:00 PM																				
Volume	1	6	0	0	7	3	8	8	0	19	10	8	3	0	21	2	4	0	0	6	53
Percent	14.	85.	0.0	0.0		15.	42.	42.	0.0		47.	38.	14.	0.0		33.	66.	0.0	0.0		
	3	7				8	1	1			6	1	3			3	7				
04:30 Volume	0	2	0	0	2	2	2	5	0	9	3	2	0	0	5	1	3	0	0	4	20
Peak Factor	0.663																				
High Int.	04:15 PM					04:30 PM					04:45 PM					04:30 PM					
Volume	0	3	0	0	3	2	2	5	0	9	4	3	2	0	9	1	3	0	0	4	4
Peak Factor	0.58					0.52					0.58					0.37					
	3					8					3					5					



Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Lindbergh Rd - Spatz Rd AM
 Site Code : 00174550
 Start Date : 07/20/2017
 Page No : 1

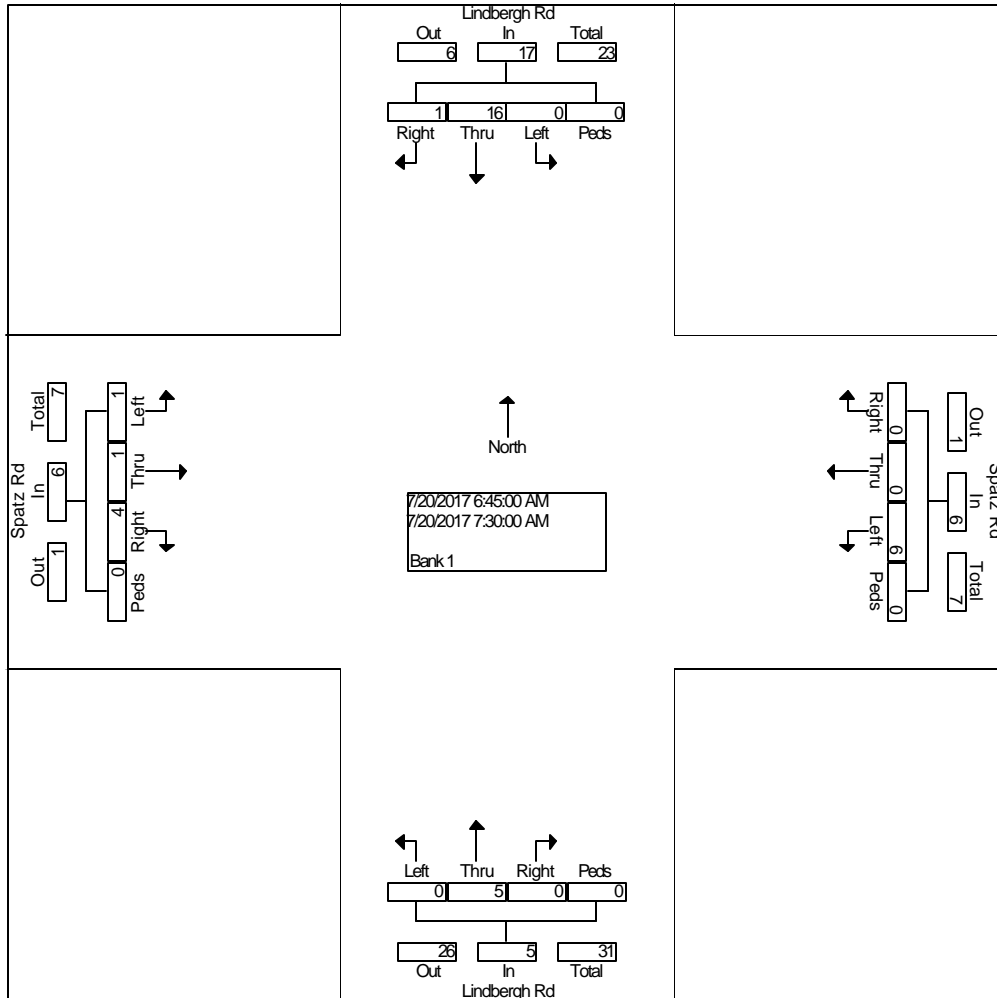
Groups Printed- Bank 1

Start Time	Lindbergh Rd From North				Spatz Rd From East				Lindbergh Rd From South				Spatz Rd From West				Int. Total	
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds		
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
06:30 AM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
06:45 AM	0	4	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6
Total	0	6	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	9
07:00 AM	1	5	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	10
07:15 AM	0	3	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	7
07:30 AM	0	4	0	0	0	0	2	0	0	1	0	0	3	1	0	0	0	11
07:45 AM	0	4	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	6
Total	1	16	0	0	0	0	6	0	0	5	0	0	4	1	1	0	0	34
08:00 AM	0	2	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Grand Total	1	24	0	0	0	0	7	0	1	9	1	0	7	1	1	0	0	52
Apprch %	4.0	96.0	0.0	0.0	0.0	0.0	100.0	0.0	9.1	81.8	9.1	0.0	77.8	11.1	11.1	0.0		
Total %	1.9	46.2	0.0	0.0	0.0	0.0	13.5	0.0	1.9	17.3	1.9	0.0	13.5	1.9	1.9	0.0		

Counts by LSC

File Name : Lindbergh Rd - Spatz Rd AM
 Site Code : 00174550
 Start Date : 07/20/2017
 Page No : 2

Start Time	Lindbergh Rd From North					Spatz Rd From East					Lindbergh Rd From South					Spatz Rd From West					Int. Total
	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	06:45 AM																				
Volume	1	16	0	0	17	0	0	6	0	6	0	5	0	0	5	4	1	1	0	6	34
Percent	5.9	94.1	0.0	0.0		0.0	0.0	10.0	0.0		0.0	10.0	0.0	0.0		66.7	16.7	16.7	0.0		
07:30 Volume	0	4	0	0	4	0	0	2	0	2	0	1	0	0	1	3	1	0	0	4	11
Peak Factor	0.773																				
High Int.	07:00 AM																				
Volume	1	5	0	0	6	0	0	3	0	3	0	2	0	0	2	3	1	0	0	4	
Peak Factor	0.70					0.50					0.62					0.37					
	8					0					5					5					



Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Lindbergh Rd - Spatz Rd PM
 Site Code : 00174550
 Start Date : 07/27/2017
 Page No : 1

Groups Printed- Bank 1

Start Time	Lindbergh Rd From North				Spatz Rd From East				Lindbergh Rd From South				Spatz Rd From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	0	2	0	0	0	0	1	0	1	4	2	0	1	0	0	0	11
04:15 PM	0	6	0	0	0	0	4	0	2	3	2	0	0	0	0	0	17
04:30 PM	1	8	0	0	0	0	1	0	1	3	0	0	0	0	1	0	15
04:45 PM	0	1	0	0	0	0	2	0	1	9	0	0	0	0	0	0	13
Total	1	17	0	0	0	0	8	0	5	19	4	0	1	0	1	0	56
05:00 PM	0	2	0	0	0	0	1	0	0	4	1	0	0	0	0	0	8
05:15 PM	0	3	1	0	0	0	1	0	3	3	0	0	0	0	0	0	11
05:30 PM	0	2	0	1	0	0	1	0	3	6	1	0	1	0	0	0	15
05:45 PM	0	3	2	0	1	0	0	0	0	5	1	0	0	0	0	0	12
Total	0	10	3	1	1	0	3	0	6	18	3	0	1	0	0	0	46
Grand Total	1	27	3	1	1	0	11	0	11	37	7	0	2	0	1	0	102
Apprch %	3.1	84.4	9.4	3.1	8.3	0.0	91.7	0.0	20.0	67.3	12.7	0.0	66.7	0.0	33.3	0.0	
Total %	1.0	26.5	2.9	1.0	1.0	0.0	10.8	0.0	10.8	36.3	6.9	0.0	2.0	0.0	1.0	0.0	

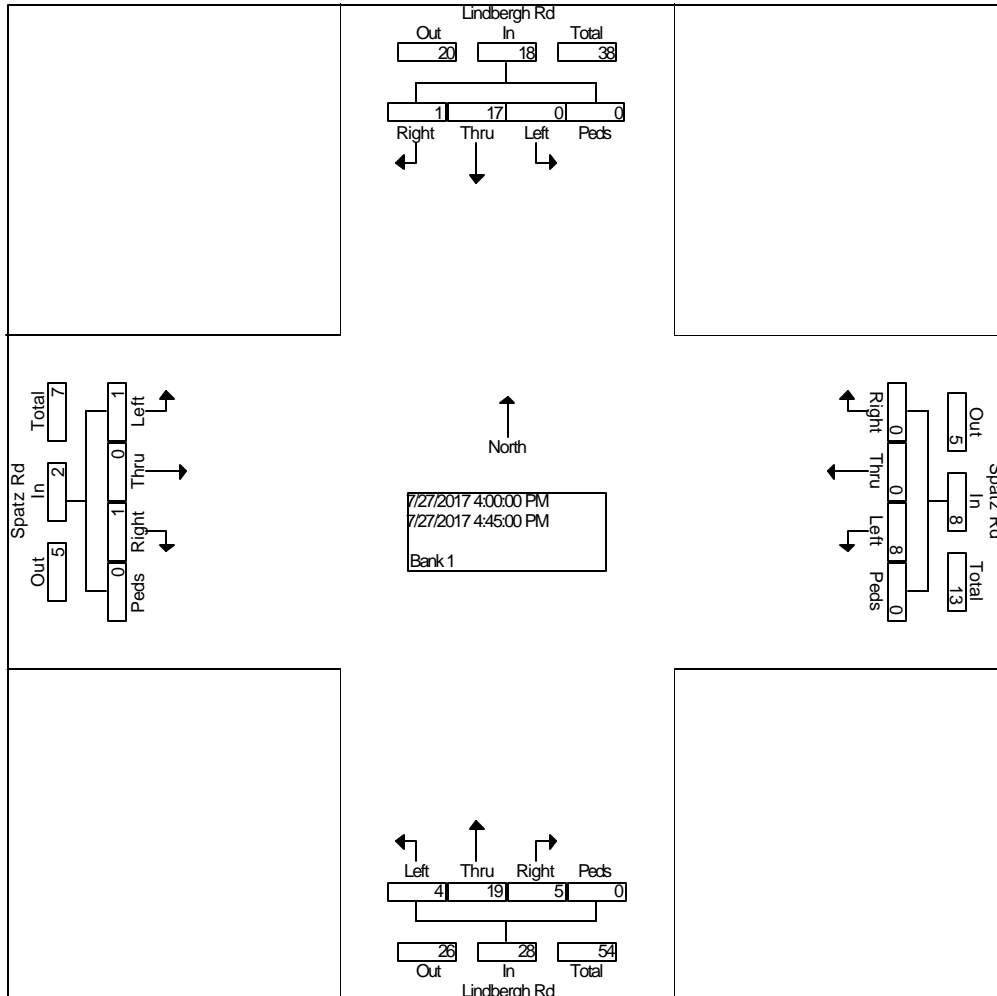
Counts by LSC

File Name : Lindbergh Rd - Spatz Rd PM
 Site Code : 00174550
 Start Date : 07/27/2017
 Page No : 2

Start Time	Lindbergh Rd From North					Spatz Rd From East					Lindbergh Rd From South					Spatz Rd From West					Int. Total
	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	

Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1

Intersection	04:00 PM																				
Volume	1	17	0	0	18	0	0	8	0	8	5	19	4	0	28	1	0	1	0	2	56
Percent	5.6	94.4	0.0	0.0		0.0	0.0	10.0	0.0		17.9	67.9	14.3	0.0		50.0	0.0	50.0	0.0		
04:15 Volume	0	6	0	0	6	0	0	4	0	4	2	3	2	0	7	0	0	0	0	0	17
Peak Factor	0.824																				
High Int.	04:30 PM					04:15 PM					04:45 PM					04:00 PM					
Volume	1	8	0	0	9	0	0	4	0	4	1	9	0	0	10	1	0	0	0	1	
Peak Factor	0.50					0.50					0.70					0.50					
	0					0					0					0					



COUNTER MEASURES INC.

Location: LINDBERGH RD AT SITE ACCESS
 City:
 County: EL PASO
 Direction: EASTBOUND-WESTBOUND

1889 YORK STREET
 DENVER, COLORADO 80206
 303-333-7409

Site Code: 092711
 Station ID: 092711

Start Time	28-Sep-17 Thu		WB		Combined		29-Sep Fri		EB		WB		Combined	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	0	6	0	8	0	14	*	*	*	*	*	*	*	*
12:15	0	3	1	1	1	4	*	*	*	*	*	*	*	*
12:30	0	4	0	8	0	12	*	*	*	*	*	*	*	*
12:45	0	2	0	5	0	7	*	*	*	*	*	*	*	*
01:00	0	1	0	6	0	7	*	*	*	*	*	*	*	*
01:15	0	7	0	6	0	13	*	*	*	*	*	*	*	*
01:30	0	2	1	3	1	5	*	*	*	*	*	*	*	*
01:45	0	4	0	6	0	10	*	*	*	*	*	*	*	*
02:00	0	7	0	5	0	12	*	*	*	*	*	*	*	*
02:15	0	3	0	3	0	6	*	*	*	*	*	*	*	*
02:30	0	8	0	1	0	9	*	*	*	*	*	*	*	*
02:45	0	3	0	4	0	7	*	*	*	*	*	*	*	*
03:00	0	5	0	9	0	14	*	*	*	*	*	*	*	*
03:15	0	5	0	7	0	12	*	*	*	*	*	*	*	*
03:30	0	7	0	10	0	17	*	*	*	*	*	*	*	*
03:45	2	4	0	4	2	8	*	*	*	*	*	*	*	*
04:00	0	6	2	8	2	14	*	*	*	*	*	*	*	*
04:15	0	4	0	7	0	11	*	*	*	*	*	*	*	*
04:30	0	10	0	5	0	15	*	*	*	*	*	*	*	*
04:45	0	6	0	6	0	12	*	*	*	*	*	*	*	*
05:00	1	5	0	9	1	14	*	*	*	*	*	*	*	*
05:15	2	1	1	8	3	9	*	*	*	*	*	*	*	*
05:30	0	5	0	7	0	12	*	*	*	*	*	*	*	*
05:45	2	8	0	9	2	17	*	*	*	*	*	*	*	*
06:00	1	4	0	12	1	16	*	*	*	*	*	*	*	*
06:15	4	3	3	5	7	8	*	*	*	*	*	*	*	*
06:30	6	4	0	10	6	14	*	*	*	*	*	*	*	*
06:45	9	3	2	3	11	6	*	*	*	*	*	*	*	*
07:00	11	5	2	4	13	9	*	*	*	*	*	*	*	*
07:15	7	2	4	1	11	3	*	*	*	*	*	*	*	*
07:30	6	2	1	3	7	5	*	*	*	*	*	*	*	*
07:45	6	2	4	7	10	9	*	*	*	*	*	*	*	*
08:00	4	4	4	3	8	7	*	*	*	*	*	*	*	*
08:15	6	1	2	6	8	7	*	*	*	*	*	*	*	*
08:30	8	0	6	5	14	5	*	*	*	*	*	*	*	*
08:45	6	0	6	2	12	2	*	*	*	*	*	*	*	*
09:00	5	0	3	5	8	5	*	*	*	*	*	*	*	*
09:15	5	1	3	6	8	7	*	*	*	*	*	*	*	*
09:30	4	1	3	4	7	5	*	*	*	*	*	*	*	*
09:45	4	0	5	2	9	2	*	*	*	*	*	*	*	*
10:00	6	1	5	2	11	3	*	*	*	*	*	*	*	*
10:15	4	0	4	1	8	1	*	*	*	*	*	*	*	*
10:30	6	1	3	0	9	1	*	*	*	*	*	*	*	*
10:45	1	0	3	1	4	1	*	*	*	*	*	*	*	*
11:00	3	0	1	2	4	2	*	*	*	*	*	*	*	*
11:15	4	0	2	0	6	0	*	*	*	*	*	*	*	*
11:30	3	2	4	0	7	2	*	*	*	*	*	*	*	*
11:45	2	2	1	0	3	2	*	*	*	*	*	*	*	*
Total	128	154	76	229	204	383	0	0	0	0	0	0	0	0
Day Total	282		305		587		0		0		0		0	
% Total	21.8%	26.2%	12.9%	39.0%			0.0%	0.0%	0.0%	0.0%				
Peak	-	06:30	04:00	08:00	05:15	06:45	05:45	-	-	-	-	-	-	-
Vol.	-	33	26	18	36	42	55	-	-	-	-	-	-	-
P.H.F.		0.750	0.650	0.750	0.750	0.808	0.809							
ADT	ADT 587		AADT 587											

HCM 6th TWSC
1: Lindbergh Rd & Doolittle Rd

Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	8	4	2	0	2	1	2	0	7	1
Future Vol, veh/h	0	5	8	4	2	0	2	1	2	0	7	1
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	81	81	81	75	75	75	100	100	100	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	10	5	3	0	2	1	2	0	10	1
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	19	18	11	25	17	2	11	0	0	3	0	0
Stage 1	11	11	-	6	6	-	-	-	-	-	-	-
Stage 2	8	7	-	19	11	-	-	-	-	-	-	-
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	995	876	1070	986	877	1082	1608	-	-	1619	-	-
Stage 1	1010	886	-	1016	891	-	-	-	-	-	-	-
Stage 2	1013	890	-	1000	886	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	992	875	1070	971	876	1082	1608	-	-	1619	-	-
Mov Cap-2 Maneuver	992	875	-	971	876	-	-	-	-	-	-	-
Stage 1	1009	886	-	1015	890	-	-	-	-	-	-	-
Stage 2	1009	889	-	984	886	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.7			8.9			2.9			0		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1608	-	-	986	937	1619	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.016	0.009	-	-	-				
HCM Control Delay (s)	7.2	0	-	8.7	8.9	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

Intersection

Int Delay, s/veh 4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	6	0	0	0	5	0	0	16	1
Future Vol, veh/h	1	1	4	6	0	0	0	5	0	0	16	1
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	38	38	38	75	75	75	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	11	8	0	0	0	5	0	0	16	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	22	22	17	29	22	5	17	0	0	5	0	0
Stage 1	17	17	-	5	5	-	-	-	-	-	-	-
Stage 2	5	5	-	24	17	-	-	-	-	-	-	-
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	990	872	1062	980	872	1078	1600	-	-	1616	-	-
Stage 1	1002	881	-	1017	892	-	-	-	-	-	-	-
Stage 2	1017	892	-	994	881	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	990	872	1062	968	872	1078	1600	-	-	1616	-	-
Mov Cap-2 Maneuver	990	872	-	968	872	-	-	-	-	-	-	-
Stage 1	1002	881	-	1017	892	-	-	-	-	-	-	-
Stage 2	1017	892	-	981	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.6	8.8	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	1013	968	1616	-	-
HCM Lane V/C Ratio	-	-	-	0.016	0.008	-	-	-
HCM Control Delay (s)	0	-	-	8.6	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM 6th Roundabout
5: Woodcarver Rd/Old Denver Rd & Baptist Rd

Existing Traffic
AM Peak Hour

Intersection				
Intersection Delay, s/veh	4.1			
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	83	243	11	188
Demand Flow Rate, veh/h	85	247	11	191
Vehicles Circulating, veh/h	199	7	259	92
Vehicles Exiting, veh/h	84	263	25	162
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	4.2	3.5	4.2
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	85	247	11	191
Cap Entry Lane, veh/h	1126	1370	1060	1256
Entry HV Adj Factor	0.982	0.982	0.996	0.984
Flow Entry, veh/h	83	243	11	188
Cap Entry, veh/h	1106	1346	1056	1236
V/C Ratio	0.075	0.180	0.010	0.152
Control Delay, s/veh	3.9	4.2	3.5	4.2
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1

HCM 6th TWSC
1: Lindbergh Rd & Doolittle Rd

Existing Traffic
PM Peak Hour

Intersection													
Int Delay, s/veh	6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	0	4	2	8	8	3	3	8	10	0	6	1	
Future Vol, veh/h	0	4	2	8	8	3	3	8	10	0	6	1	
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	38	38	38	53	53	53	100	100	100	88	88	88	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	0	11	5	15	15	6	3	8	10	0	7	1	
Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	38	32	8	35	27	13	8	0	0	18	0	0	
Stage 1	8	8	-	19	19	-	-	-	-	-	-	-	
Stage 2	30	24	-	16	8	-	-	-	-	-	-	-	
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	967	861	1074	971	866	1067	1612	-	-	1599	-	-	
Stage 1	1013	889	-	1000	880	-	-	-	-	-	-	-	
Stage 2	987	875	-	1004	889	-	-	-	-	-	-	-	
Platoon blocked, %													
Mov Cap-1 Maneuver	948	859	1074	955	864	1067	1612	-	-	1599	-	-	
Mov Cap-2 Maneuver	948	859	-	955	864	-	-	-	-	-	-	-	
Stage 1	1011	889	-	998	878	-	-	-	-	-	-	-	
Stage 2	963	873	-	987	889	-	-	-	-	-	-	-	
Approach	EB			WB			NB			SB			
HCM Control Delay, s	9			9			1			0			
HCM LOS	A			A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1612	-	-	920	929	1599	-	-					
HCM Lane V/C Ratio	0.002	-	-	0.017	0.039	-	-	-					
HCM Control Delay (s)	7.2	0	-	9	9	0	-	-					
HCM Lane LOS	A	A	-	A	A	A	-	-					
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-					

HCM 6th TWSC
2: Lindbergh Rd & Spaatz Rd

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	8	0	0	4	19	5	0	17	1
Future Vol, veh/h	1	0	1	8	0	0	4	19	5	0	17	1
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	100	100	100	50	50	50	100	100	100	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	16	0	0	4	19	5	0	23	1
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	54	56	24	54	54	22	24	0	0	24	0	0
Stage 1	24	24	-	30	30	-	-	-	-	-	-	-
Stage 2	30	32	-	24	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	944	835	1052	944	837	1055	1591	-	-	1591	-	-
Stage 1	994	875	-	987	870	-	-	-	-	-	-	-
Stage 2	987	868	-	994	875	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	942	832	1052	941	834	1055	1591	-	-	1591	-	-
Mov Cap-2 Maneuver	942	832	-	941	834	-	-	-	-	-	-	-
Stage 1	991	875	-	984	867	-	-	-	-	-	-	-
Stage 2	984	865	-	993	875	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	8.6			8.9			1			0		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1591	-	-	994	941	1591	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.002	0.017	-	-	-				
HCM Control Delay (s)	7.3	0	-	8.6	8.9	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

HCM 6th Roundabout
5: Woodcarver Rd/Old Denver Rd & Baptist Rd

Existing Traffic
PM Peak Hour

Intersection				
Intersection Delay, s/veh	4.1			
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	83	243	11	188
Demand Flow Rate, veh/h	85	247	11	191
Vehicles Circulating, veh/h	199	7	259	92
Vehicles Exiting, veh/h	84	263	25	162
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.9	4.2	3.5	4.2
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	85	247	11	191
Cap Entry Lane, veh/h	1126	1370	1060	1256
Entry HV Adj Factor	0.982	0.982	0.996	0.984
Flow Entry, veh/h	83	243	11	188
Cap Entry, veh/h	1106	1346	1056	1236
V/C Ratio	0.075	0.180	0.010	0.152
Control Delay, s/veh	3.9	4.2	3.5	4.2
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1

Intersection

Int Delay, s/veh 1.4

Movement EBT EBR WBL WBT NBL NBR

Lane Configurations						
Traffic Vol, veh/h	86	1	5	27	2	15
Future Vol, veh/h	86	1	5	27	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	93	1	5	29	2	16

Major/Minor Major1 Major2 Minor1

Conflicting Flow All	0	0	94	0	133	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1500	-	861	963
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1500	-	858	963
Mov Cap-2 Maneuver	-	-	-	-	858	-
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	983	-

Approach EB WB NB

HCM Control Delay, s	0	1.2	8.9
HCM LOS			A

Minor Lane/Major Mvmt NBLn1 EBT EBR WBL WBT

Capacity (veh/h)	949	-	-	1500	-
HCM Lane V/C Ratio	0.019	-	-	0.004	-
HCM Control Delay (s)	8.9	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	7.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	15	0	4	40	0
Future Vol, veh/h	2	15	0	4	40	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	2	16	0	4	43	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	88	2	0	0	4
Stage 1	2	-	-	-	-
Stage 2	86	-	-	-	-
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	913	1082	-	-	1618
Stage 1	1021	-	-	-	-
Stage 2	937	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	888	1082	-	-	1618
Mov Cap-2 Maneuver	888	-	-	-	-
Stage 1	993	-	-	-	-
Stage 2	937	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1055	1618
HCM Lane V/C Ratio	-	-	0.018	0.027
HCM Control Delay (s)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	6	0	0	0	11	0	0	18	1
Future Vol, veh/h	1	1	4	6	0	0	0	11	0	0	18	1
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	38	38	38	75	75	75	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	11	8	0	0	0	11	0	0	18	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	30	30	19	37	30	11	19	0	0	11	0	0
Stage 1	19	19	-	11	11	-	-	-	-	-	-	-
Stage 2	11	11	-	26	19	-	-	-	-	-	-	-
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	979	863	1059	968	863	1070	1597	-	-	1608	-	-
Stage 1	1000	880	-	1010	886	-	-	-	-	-	-	-
Stage 2	1010	886	-	992	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	979	863	1059	956	863	1070	1597	-	-	1608	-	-
Mov Cap-2 Maneuver	979	863	-	956	863	-	-	-	-	-	-	-
Stage 1	1000	880	-	1010	886	-	-	-	-	-	-	-
Stage 2	1010	886	-	979	880	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		8.8		0		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	1007	956	1608	-	-
HCM Lane V/C Ratio	-	-	-	0.016	0.008	-	-	-
HCM Control Delay (s)	0	-	-	8.6	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection				
Intersection Delay, s/veh	4.5			
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	190	283	11	192
Demand Flow Rate, veh/h	193	288	11	195
Vehicles Circulating, veh/h	199	18	367	133
Vehicles Exiting, veh/h	129	360	25	173
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.8	4.5	3.9	4.4
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	193	288	11	195
Cap Entry Lane, veh/h	1126	1355	949	1205
Entry HV Adj Factor	0.982	0.982	0.996	0.984
Flow Entry, veh/h	190	283	11	192
Cap Entry, veh/h	1106	1330	946	1186
V/C Ratio	0.171	0.213	0.012	0.162
Control Delay, s/veh	4.8	4.5	3.9	4.4
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	1

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	8	6	2	0	2	1	8	0	7	1
Future Vol, veh/h	0	5	8	6	2	0	2	1	8	0	7	1
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	81	81	81	75	75	75	100	100	100	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	10	8	3	0	2	1	8	0	10	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	22	24	11	28	20	5	11	0	0	9	0	0
Stage 1	11	11	-	9	9	-	-	-	-	-	-	-
Stage 2	11	13	-	19	11	-	-	-	-	-	-	-
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	990	869	1070	981	874	1078	1608	-	-	1611	-	-
Stage 1	1010	886	-	1012	888	-	-	-	-	-	-	-
Stage 2	1010	885	-	1000	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	987	868	1070	966	873	1078	1608	-	-	1611	-	-
Mov Cap-2 Maneuver	987	868	-	966	873	-	-	-	-	-	-	-
Stage 1	1009	886	-	1011	887	-	-	-	-	-	-	-
Stage 2	1006	884	-	984	886	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.7		8.9		1.3		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	982	941	1611	-	-
HCM Lane V/C Ratio	0.001	-	-	0.016	0.011	-	-	-
HCM Control Delay (s)	7.2	0	-	8.7	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	2	17	97	1	9
Future Vol, veh/h	65	2	17	97	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	71	2	18	105	1	10

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	73	0	213 72
Stage 1	-	-	-	-	72 -
Stage 2	-	-	-	-	141 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1527	-	775 990
Stage 1	-	-	-	-	951 -
Stage 2	-	-	-	-	886 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1527	-	766 990
Mov Cap-2 Maneuver	-	-	-	-	766 -
Stage 1	-	-	-	-	940 -
Stage 2	-	-	-	-	886 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	962	-	-	1527	-
HCM Lane V/C Ratio	0.011	-	-	0.012	-
HCM Control Delay (s)	8.8	-	-	7.4	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	7.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	46	0	2	39	0
Future Vol, veh/h	5	46	0	2	39	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	5	50	0	2	42	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	85	1	0	0	2
Stage 1	1	-	-	-	-
Stage 2	84	-	-	-	-
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	916	1084	-	-	1620
Stage 1	1022	-	-	-	-
Stage 2	939	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	892	1084	-	-	1620
Mov Cap-2 Maneuver	892	-	-	-	-
Stage 1	995	-	-	-	-
Stage 2	939	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1062	1620
HCM Lane V/C Ratio	-	-	0.052	0.026
HCM Control Delay (s)	-	-	8.6	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	8	0	0	4	23	5	0	24	1
Future Vol, veh/h	1	0	1	8	0	0	4	23	5	0	24	1
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	100	100	100	50	50	50	100	100	100	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	16	0	0	4	23	5	0	32	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	67	69	33	67	67	26	33	0	0	28	0	0
Stage 1	33	33	-	34	34	-	-	-	-	-	-	-
Stage 2	34	36	-	33	33	-	-	-	-	-	-	-
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	926	822	1041	926	824	1050	1579	-	-	1585	-	-
Stage 1	983	868	-	982	867	-	-	-	-	-	-	-
Stage 2	982	865	-	983	868	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	924	820	1041	923	822	1050	1579	-	-	1585	-	-
Mov Cap-2 Maneuver	924	820	-	923	822	-	-	-	-	-	-	-
Stage 1	980	868	-	979	864	-	-	-	-	-	-	-
Stage 2	979	862	-	982	868	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	9	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1579	-	-	979	923	1585	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.017	-	-
HCM Control Delay (s)	7.3	0	-	8.7	9	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

Intersection				
Intersection Delay, s/veh	5.8			
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	167	538	18	155
Demand Flow Rate, veh/h	170	549	18	158
Vehicles Circulating, veh/h	157	13	309	264
Vehicles Exiting, veh/h	265	314	18	298
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	6.5	3.7	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	170	549	18	158
Cap Entry Lane, veh/h	1176	1362	1007	1054
Entry HV Adj Factor	0.982	0.980	1.000	0.981
Flow Entry, veh/h	167	538	18	155
Cap Entry, veh/h	1154	1335	1007	1034
V/C Ratio	0.145	0.403	0.018	0.150
Control Delay, s/veh	4.4	6.5	3.7	4.8
LOS	A	A	A	A
95th %tile Queue, veh	1	2	0	1

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	2	15	8	3	3	8	14	0	6	1
Future Vol, veh/h	0	4	2	15	8	3	3	8	14	0	6	1
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	38	38	38	53	53	53	100	100	100	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	5	28	15	6	3	8	14	0	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	40	36	8	37	29	15	8	0	0	22	0	0
Stage 1	8	8	-	21	21	-	-	-	-	-	-	-
Stage 2	32	28	-	16	8	-	-	-	-	-	-	-
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	964	856	1074	968	864	1065	1612	-	-	1593	-	-
Stage 1	1013	889	-	998	878	-	-	-	-	-	-	-
Stage 2	984	872	-	1004	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	945	854	1074	953	862	1065	1612	-	-	1593	-	-
Mov Cap-2 Maneuver	945	854	-	953	862	-	-	-	-	-	-	-
Stage 1	1011	889	-	996	876	-	-	-	-	-	-	-
Stage 2	960	870	-	987	889	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		9.1		0.9		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1612	-	-	917	934	1593	-	-
HCM Lane V/C Ratio	0.002	-	-	0.017	0.053	-	-	-
HCM Control Delay (s)	7.2	0	-	9	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	181	1	5	60	2	15
Future Vol, veh/h	181	1	5	60	2	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	197	1	5	65	2	16

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	198	0	273
Stage 1	-	-	-	-	198
Stage 2	-	-	-	-	75
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1375	-	716
Stage 1	-	-	-	-	835
Stage 2	-	-	-	-	948
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1375	-	713
Mov Cap-2 Maneuver	-	-	-	-	713
Stage 1	-	-	-	-	832
Stage 2	-	-	-	-	948




Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1375	-
HCM Lane V/C Ratio	0.022	-	-	0.004	-
HCM Control Delay (s)	9.5	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection

Int Delay, s/veh 4.1

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	33	15	0	95	40	0
Future Vol, veh/h	33	15	0	95	40	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	36	16	0	103	43	0

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	138	52	0	0	103	0
Stage 1	52	-	-	-	-	-
Stage 2	86	-	-	-	-	-
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	855	1016	-	-	1489	-
Stage 1	970	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	830	1016	-	-	1489	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	9.3	0	7.5
HCM LOS	A		

Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Capacity (veh/h)	-	-	880	1489	-
HCM Lane V/C Ratio	-	-	0.059	0.029	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	6	0	0	0	16	0	0	20	1
Future Vol, veh/h	1	1	4	6	0	0	0	16	0	0	20	1
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	38	38	38	75	75	75	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	11	8	0	0	0	16	0	0	20	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	37	37	21	44	37	16	21	0	0	16	0	0
Stage 1	21	21	-	16	16	-	-	-	-	-	-	-
Stage 2	16	16	-	28	21	-	-	-	-	-	-	-
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	968	855	1056	958	855	1063	1595	-	-	1602	-	-
Stage 1	998	878	-	1004	882	-	-	-	-	-	-	-
Stage 2	1004	882	-	989	878	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	968	855	1056	947	855	1063	1595	-	-	1602	-	-
Mov Cap-2 Maneuver	968	855	-	947	855	-	-	-	-	-	-	-
Stage 1	998	878	-	1004	882	-	-	-	-	-	-	-
Stage 2	1004	882	-	976	878	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.8	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1595	-	-	1002	947	1602	-	-
HCM Lane V/C Ratio	-	-	-	0.016	0.008	-	-	-
HCM Control Delay (s)	0	-	-	8.7	8.8	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection				
Intersection Delay, s/veh	5.1			
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	285	318	11	195
Demand Flow Rate, veh/h	291	324	11	198
Vehicles Circulating, veh/h	199	28	464	169
Vehicles Exiting, veh/h	168	447	25	183
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	4.8	4.3	4.6
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	291	324	11	198
Cap Entry Lane, veh/h	1126	1341	860	1161
Entry HV Adj Factor	0.979	0.982	0.996	0.984
Flow Entry, veh/h	285	318	11	195
Cap Entry, veh/h	1102	1316	857	1143
V/C Ratio	0.258	0.242	0.013	0.170
Control Delay, s/veh	5.7	4.8	4.3	4.6
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	1

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	8	8	2	0	2	1	13	0	7	1
Future Vol, veh/h	0	5	8	8	2	0	2	1	13	0	7	1
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	81	81	81	75	75	75	100	100	100	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	10	11	3	0	2	1	13	0	10	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	24	29	11	31	23	8	11	0	0	14	0	0
Stage 1	11	11	-	12	12	-	-	-	-	-	-	-
Stage 2	13	18	-	19	11	-	-	-	-	-	-	-
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	987	864	1070	977	870	1074	1608	-	-	1604	-	-
Stage 1	1010	886	-	1009	886	-	-	-	-	-	-	-
Stage 2	1007	880	-	1000	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	984	863	1070	962	869	1074	1608	-	-	1604	-	-
Mov Cap-2 Maneuver	984	863	-	962	869	-	-	-	-	-	-	-
Stage 1	1009	886	-	1008	885	-	-	-	-	-	-	-
Stage 2	1003	879	-	984	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.9	0.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	980	942	1604	-	-
HCM Lane V/C Ratio	0.001	-	-	0.016	0.014	-	-	-
HCM Control Delay (s)	7.2	0	-	8.7	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	128	2	17	203	1	9
Future Vol, veh/h	128	2	17	203	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	139	2	18	221	1	10

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	141	0	397
Stage 1	-	-	-	-	140
Stage 2	-	-	-	-	257
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1442	-	608
Stage 1	-	-	-	-	887
Stage 2	-	-	-	-	786
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1442	-	601
Mov Cap-2 Maneuver	-	-	-	-	601
Stage 1	-	-	-	-	876
Stage 2	-	-	-	-	786

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	864	-	-	1442	-
HCM Lane V/C Ratio	0.013	-	-	0.013	-
HCM Control Delay (s)	9.2	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	7.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	106	46	0	63	39	0
Future Vol, veh/h	106	46	0	63	39	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	115	50	0	68	42	0

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	118	34	0	0	68	0
Stage 1	34	-	-	-	-	-
Stage 2	84	-	-	-	-	-
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	878	1039	-	-	1533	-
Stage 1	988	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	854	1039	-	-	1533	-
Mov Cap-2 Maneuver	854	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	7.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	903	1533
HCM Lane V/C Ratio	-	-	0.183	0.028
HCM Control Delay (s)	-	-	9.9	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	8	0	0	4	26	5	0	30	1
Future Vol, veh/h	1	0	1	8	0	0	4	26	5	0	30	1
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	100	100	100	50	50	50	100	100	100	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	16	0	0	4	26	5	0	40	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	78	80	41	78	78	29	41	0	0	31	0	0
Stage 1	41	41	-	37	37	-	-	-	-	-	-	-
Stage 2	37	39	-	41	41	-	-	-	-	-	-	-
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	911	810	1030	911	812	1046	1568	-	-	1582	-	-
Stage 1	974	861	-	978	864	-	-	-	-	-	-	-
Stage 2	978	862	-	974	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	909	808	1030	908	810	1046	1568	-	-	1582	-	-
Mov Cap-2 Maneuver	909	808	-	908	810	-	-	-	-	-	-	-
Stage 1	971	861	-	975	861	-	-	-	-	-	-	-
Stage 2	975	859	-	973	861	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	9	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	966	908	1582	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.018	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

HCM 6th Roundabout
 21: Woodcarver Rd/Old Denver Rd & Baptist Rd

Short-Term Total Traffic
 PM Peak Hour

Intersection				
Intersection Delay, s/veh	6.8			
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	230	657	18	166
Demand Flow Rate, veh/h	234	670	18	170
Vehicles Circulating, veh/h	157	20	373	385
Vehicles Exiting, veh/h	398	371	18	305
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.9	7.8	4.0	5.8
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	234	670	18	170
Cap Entry Lane, veh/h	1176	1352	943	932
Entry HV Adj Factor	0.982	0.980	1.000	0.976
Flow Entry, veh/h	230	657	18	166
Cap Entry, veh/h	1155	1325	943	909
V/C Ratio	0.199	0.496	0.019	0.182
Control Delay, s/veh	4.9	7.8	4.0	5.8
LOS	A	A	A	A
95th %tile Queue, veh	1	3	0	1

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	2	21	8	3	3	8	17	0	6	1
Future Vol, veh/h	0	4	2	21	8	3	3	8	17	0	6	1
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	38	38	38	53	53	53	100	100	100	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	5	40	15	6	3	8	17	0	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	41	39	8	39	31	17	8	0	0	25	0	0
Stage 1	8	8	-	23	23	-	-	-	-	-	-	-
Stage 2	33	31	-	16	8	-	-	-	-	-	-	-
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	963	853	1074	966	862	1062	1612	-	-	1589	-	-
Stage 1	1013	889	-	995	876	-	-	-	-	-	-	-
Stage 2	983	869	-	1004	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	944	851	1074	951	860	1062	1612	-	-	1589	-	-
Mov Cap-2 Maneuver	944	851	-	951	860	-	-	-	-	-	-	-
Stage 1	1011	889	-	993	874	-	-	-	-	-	-	-
Stage 2	959	867	-	987	889	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		9.1		0.8		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1612	-	-	914	935	1589	-	-
HCM Lane V/C Ratio	0.002	-	-	0.017	0.065	-	-	-
HCM Control Delay (s)	7.2	0	-	9	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻		↻	↑	↻	
Traffic Vol, veh/h	216	7	11	171	18	38
Future Vol, veh/h	216	7	11	171	18	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	235	8	12	186	20	41

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	243	0	449
Stage 1	-	-	-	-	239
Stage 2	-	-	-	-	210
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1323	-	568
Stage 1	-	-	-	-	801
Stage 2	-	-	-	-	825
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1323	-	563
Mov Cap-2 Maneuver	-	-	-	-	563
Stage 1	-	-	-	-	794
Stage 2	-	-	-	-	825

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	705	-	-	1323	-
HCM Lane V/C Ratio	0.086	-	-	0.009	-
HCM Control Delay (s)	10.6	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	2	27	0	4	62	0
Future Vol, veh/h	2	27	0	4	62	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	2	29	0	4	67	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	136	2	0	0	4
Stage 1	2	-	-	-	-
Stage 2	134	-	-	-	-
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	857	1082	-	-	1618
Stage 1	1021	-	-	-	-
Stage 2	892	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	822	1082	-	-	1618
Mov Cap-2 Maneuver	822	-	-	-	-
Stage 1	979	-	-	-	-
Stage 2	892	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1059	1618
HCM Lane V/C Ratio	-	-	0.03	0.042
HCM Control Delay (s)	-	-	8.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	6	0	0	0	23	0	0	40	1
Future Vol, veh/h	1	1	4	6	0	0	0	23	0	0	40	1
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	38	38	38	75	75	75	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	11	8	0	0	0	23	0	0	40	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	64	64	41	71	64	23	41	0	0	23	0	0
Stage 1	41	41	-	23	23	-	-	-	-	-	-	-
Stage 2	23	23	-	48	41	-	-	-	-	-	-	-
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	827	1030	920	827	1054	1568	-	-	1592	-	-
Stage 1	974	861	-	995	876	-	-	-	-	-	-	-
Stage 2	995	876	-	965	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	930	827	1030	908	827	1054	1568	-	-	1592	-	-
Mov Cap-2 Maneuver	930	827	-	908	827	-	-	-	-	-	-	-
Stage 1	974	861	-	995	876	-	-	-	-	-	-	-
Stage 2	995	876	-	952	861	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.8		9		0		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	973	908	1592	-	-
HCM Lane V/C Ratio	-	-	-	0.016	0.009	-	-	-
HCM Control Delay (s)	0	-	-	8.8	9	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection				
Intersection Delay, s/veh	8.7			
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	375	644	118	345
Demand Flow Rate, veh/h	382	656	120	352
Vehicles Circulating, veh/h	511	41	678	390
Vehicles Exiting, veh/h	231	757	215	307
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.7	7.9	7.3	8.3
Approach LOS	B	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	382	656	120	352
Cap Entry Lane, veh/h	819	1323	691	927
Entry HV Adj Factor	0.982	0.981	0.981	0.981
Flow Entry, veh/h	375	644	118	345
Cap Entry, veh/h	805	1299	678	910
V/C Ratio	0.466	0.496	0.174	0.380
Control Delay, s/veh	10.7	7.9	7.3	8.3
LOS	B	A	A	A
95th %tile Queue, veh	3	3	1	2

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	8	28	2	0	2	1	20	0	7	1
Future Vol, veh/h	0	5	8	28	2	0	2	1	20	0	7	1
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	81	81	81	75	75	75	100	100	100	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	10	37	3	0	2	1	20	0	10	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	28	36	11	34	26	11	11	0	0	21	0	0
Stage 1	11	11	-	15	15	-	-	-	-	-	-	-
Stage 2	17	25	-	19	11	-	-	-	-	-	-	-
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	981	856	1070	973	867	1070	1608	-	-	1595	-	-
Stage 1	1010	886	-	1005	883	-	-	-	-	-	-	-
Stage 2	1002	874	-	1000	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	978	855	1070	958	866	1070	1608	-	-	1595	-	-
Mov Cap-2 Maneuver	978	855	-	958	866	-	-	-	-	-	-	-
Stage 1	1009	886	-	1004	882	-	-	-	-	-	-	-
Stage 2	998	873	-	984	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	976	951	1595	-	-
HCM Lane V/C Ratio	0.001	-	-	0.016	0.042	-	-	-
HCM Control Delay (s)	7.2	0	-	8.8	9	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 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	106	8	50	131	5	30
Future Vol, veh/h	106	8	50	131	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	115	9	54	142	5	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	124
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1463
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1463
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	865	-	-	1463	-
HCM Lane V/C Ratio	0.044	-	-	0.037	-
HCM Control Delay (s)	9.4	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	7.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	59	0	3	50	0
Future Vol, veh/h	6	59	0	3	50	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	7	64	0	3	54	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	110	2	0	0	3
Stage 1	2	-	-	-	-
Stage 2	108	-	-	-	-
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	887	1082	-	-	1619
Stage 1	1021	-	-	-	-
Stage 2	916	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	858	1082	-	-	1619
Mov Cap-2 Maneuver	858	-	-	-	-
Stage 1	987	-	-	-	-
Stage 2	916	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1057	1619
HCM Lane V/C Ratio	-	-	0.067	0.034
HCM Control Delay (s)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	8	0	0	4	33	5	0	32	1
Future Vol, veh/h	1	0	1	8	0	0	4	33	5	0	32	1
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	100	100	100	50	50	50	100	100	100	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	16	0	0	4	33	5	0	43	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	88	90	44	88	88	36	44	0	0	38	0	0
Stage 1	44	44	-	44	44	-	-	-	-	-	-	-
Stage 2	44	46	-	44	44	-	-	-	-	-	-	-
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	897	800	1026	897	802	1037	1564	-	-	1572	-	-
Stage 1	970	858	-	970	858	-	-	-	-	-	-	-
Stage 2	970	857	-	970	858	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	895	798	1026	894	800	1037	1564	-	-	1572	-	-
Mov Cap-2 Maneuver	895	798	-	894	800	-	-	-	-	-	-	-
Stage 1	967	858	-	967	855	-	-	-	-	-	-	-
Stage 2	967	854	-	969	858	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.8		9.1		0.7		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1564	-	-	956	894	1572	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.018	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection				
Intersection Delay, s/veh	10.2			
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	267	849	217	369
Demand Flow Rate, veh/h	272	867	222	377
Vehicles Circulating, veh/h	484	53	602	478
Vehicles Exiting, veh/h	371	771	154	442
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	11.5	8.5	10.0
Approach LOS	A	B	A	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	272	867	222	377
Cap Entry Lane, veh/h	842	1307	747	847
Entry HV Adj Factor	0.982	0.980	0.980	0.978
Flow Entry, veh/h	267	849	217	369
Cap Entry, veh/h	827	1281	732	829
V/C Ratio	0.323	0.663	0.297	0.445
Control Delay, s/veh	8.0	11.5	8.5	10.0
LOS	A	B	A	B
95th %tile Queue, veh	1	5	1	2

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	2	23	8	3	3	8	24	0	6	1
Future Vol, veh/h	0	4	2	23	8	3	3	8	24	0	6	1
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	38	38	38	53	53	53	100	100	100	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	5	43	15	6	3	8	24	0	7	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	45	46	8	42	34	20	8	0	0	32	0	0
Stage 1	8	8	-	26	26	-	-	-	-	-	-	-
Stage 2	37	38	-	16	8	-	-	-	-	-	-	-
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	957	846	1074	961	859	1058	1612	-	-	1580	-	-
Stage 1	1013	889	-	992	874	-	-	-	-	-	-	-
Stage 2	978	863	-	1004	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	938	844	1074	946	857	1058	1612	-	-	1580	-	-
Mov Cap-2 Maneuver	938	844	-	946	857	-	-	-	-	-	-	-
Stage 1	1011	889	-	990	872	-	-	-	-	-	-	-
Stage 2	954	861	-	987	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.1	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1612	-	-	909	932	1580	-	-
HCM Lane V/C Ratio	0.002	-	-	0.017	0.069	-	-	-
HCM Control Delay (s)	7.2	0	-	9	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	393	7	11	195	18	38
Future Vol, veh/h	393	7	11	195	18	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	427	8	12	212	20	41

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	435	0	667
Stage 1	-	-	-	-	431
Stage 2	-	-	-	-	236
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1125	-	424
Stage 1	-	-	-	-	655
Stage 2	-	-	-	-	803
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1125	-	419
Mov Cap-2 Maneuver	-	-	-	-	419
Stage 1	-	-	-	-	648
Stage 2	-	-	-	-	803




Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	539	-	-	1125	-
HCM Lane V/C Ratio	0.113	-	-	0.011	-
HCM Control Delay (s)	12.5	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection

Int Delay, s/veh 4.7

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	34	27	0	100	62	0
Future Vol, veh/h	34	27	0	100	62	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	37	29	0	109	67	0

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	189	55	0	0	109	0
Stage 1	55	-	-	-	-	-
Stage 2	134	-	-	-	-	-
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	800	1012	-	-	1481	-
Stage 1	968	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	764	1012	-	-	1481	-
Mov Cap-2 Maneuver	764	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	892	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	9.6	0	7.5
HCM LOS	A		

Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Capacity (veh/h)	-	-	857	1481	-
HCM Lane V/C Ratio	-	-	0.077	0.046	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	6	0	0	0	27	0	0	41	1
Future Vol, veh/h	1	1	4	6	0	0	0	27	0	0	41	1
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	38	38	38	75	75	75	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	11	8	0	0	0	27	0	0	41	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	69	69	42	76	69	27	42	0	0	27	0	0
Stage 1	42	42	-	27	27	-	-	-	-	-	-	-
Stage 2	27	27	-	49	42	-	-	-	-	-	-	-
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	923	822	1029	914	822	1048	1567	-	-	1587	-	-
Stage 1	972	860	-	990	873	-	-	-	-	-	-	-
Stage 2	990	873	-	964	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	923	822	1029	902	822	1048	1567	-	-	1587	-	-
Mov Cap-2 Maneuver	923	822	-	902	822	-	-	-	-	-	-	-
Stage 1	972	860	-	990	873	-	-	-	-	-	-	-
Stage 2	990	873	-	951	860	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	970	902	1587	-	-
HCM Lane V/C Ratio	-	-	-	0.016	0.009	-	-	-
HCM Control Delay (s)	0	-	-	8.8	9	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection				
Intersection Delay, s/veh	9.8			
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	457	666	119	348
Demand Flow Rate, veh/h	466	679	121	355
Vehicles Circulating, veh/h	511	52	760	414
Vehicles Exiting, veh/h	258	829	217	317
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	13.1	8.4	8.1	8.6
Approach LOS	B	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	466	679	121	355
Cap Entry Lane, veh/h	819	1309	636	905
Entry HV Adj Factor	0.980	0.981	0.981	0.981
Flow Entry, veh/h	457	666	119	348
Cap Entry, veh/h	803	1284	623	888
V/C Ratio	0.569	0.519	0.190	0.392
Control Delay, s/veh	13.1	8.4	8.1	8.6
LOS	B	A	A	A
95th %tile Queue, veh	4	3	1	2

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	8	29	2	0	2	1	24	0	7	1
Future Vol, veh/h	0	5	8	29	2	0	2	1	24	0	7	1
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	81	81	81	75	75	75	100	100	100	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	10	39	3	0	2	1	24	0	10	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	30	40	11	36	28	13	11	0	0	25	0	0
Stage 1	11	11	-	17	17	-	-	-	-	-	-	-
Stage 2	19	29	-	19	11	-	-	-	-	-	-	-
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	979	852	1070	970	865	1067	1608	-	-	1589	-	-
Stage 1	1010	886	-	1002	881	-	-	-	-	-	-	-
Stage 2	1000	871	-	1000	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	976	851	1070	955	864	1067	1608	-	-	1589	-	-
Mov Cap-2 Maneuver	976	851	-	955	864	-	-	-	-	-	-	-
Stage 1	1009	886	-	1001	880	-	-	-	-	-	-	-
Stage 2	996	870	-	984	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9	0.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	974	949	1589	-	-
HCM Lane V/C Ratio	0.001	-	-	0.016	0.044	-	-	-
HCM Control Delay (s)	7.2	0	-	8.8	9	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 1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	162	8	50	233	5	30
Future Vol, veh/h	162	8	50	233	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	72	-	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	176	9	54	253	5	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	185
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1390
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1390
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	1390	-
HCM Lane V/C Ratio	0.049	-	-	0.039	-
HCM Control Delay (s)	9.9	-	-	7.7	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection

Int Delay, s/veh 7.4

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations						
Traffic Vol, veh/h	113	59	0	66	50	0
Future Vol, veh/h	113	59	0	66	50	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	123	64	0	72	54	0

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	144	36	0	0	72	0
Stage 1	36	-	-	-	-	-
Stage 2	108	-	-	-	-	-
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	849	1037	-	-	1528	-
Stage 1	986	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	819	1037	-	-	1528	-
Mov Cap-2 Maneuver	819	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s 10.2 0 7.4
 HCM LOS B

Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Capacity (veh/h)	-	-	883	1528	-
HCM Lane V/C Ratio	-	-	0.212	0.036	-
HCM Control Delay (s)	-	-	10.2	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	8	0	0	4	36	5	0	37	1
Future Vol, veh/h	1	0	1	8	0	0	4	36	5	0	37	1
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	100	100	100	50	50	50	100	100	100	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	1	16	0	0	4	36	5	0	49	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	97	99	50	97	97	39	50	0	0	41	0	0
Stage 1	50	50	-	47	47	-	-	-	-	-	-	-
Stage 2	47	49	-	50	50	-	-	-	-	-	-	-
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	885	791	1018	885	793	1033	1557	-	-	1568	-	-
Stage 1	963	853	-	967	856	-	-	-	-	-	-	-
Stage 2	967	854	-	963	853	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	883	789	1018	882	791	1033	1557	-	-	1568	-	-
Mov Cap-2 Maneuver	883	789	-	882	791	-	-	-	-	-	-	-
Stage 1	960	853	-	964	853	-	-	-	-	-	-	-
Stage 2	964	851	-	962	853	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.8		9.2		0.7		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1557	-	-	946	882	1568	-	-
HCM Lane V/C Ratio	0.003	-	-	0.002	0.018	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

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	330	943	219	381
Demand Flow Rate, veh/h	337	962	224	389
Vehicles Circulating, veh/h	484	61	665	575
Vehicles Exiting, veh/h	480	828	155	448
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	14.2	9.3	12.1
Approach LOS	A	B	A	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	337	962	224	389
Cap Entry Lane, veh/h	842	1297	700	768
Entry HV Adj Factor	0.979	0.980	0.980	0.979
Flow Entry, veh/h	330	943	219	381
Cap Entry, veh/h	825	1270	686	751
V/C Ratio	0.400	0.742	0.320	0.507
Control Delay, s/veh	9.2	14.2	9.3	12.1
LOS	A	B	A	B
95th %tile Queue, veh	2	7	1	3

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	4	2	28	8	3	3	8	27	0	6	1
Future Vol, veh/h	0	4	2	28	8	3	3	8	27	0	6	1
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	38	38	38	53	53	53	100	100	100	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	5	53	15	6	3	8	27	0	7	1

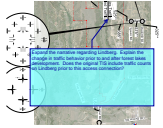
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	46	49	8	44	36	22	8	0	0	35	0	0
Stage 1	8	8	-	28	28	-	-	-	-	-	-	-
Stage 2	38	41	-	16	8	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 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	955	843	1074	958	856	1055	1612	-	-	1576	-	-
Stage 1	1013	889	-	989	872	-	-	-	-	-	-	-
Stage 2	977	861	-	1004	889	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	936	841	1074	943	854	1055	1612	-	-	1576	-	-
Mov Cap-2 Maneuver	936	841	-	943	854	-	-	-	-	-	-	-
Stage 1	1011	889	-	987	870	-	-	-	-	-	-	-
Stage 2	953	859	-	987	889	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.2	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1612	-	-	907	931	1576	-	-
HCM Lane V/C Ratio	0.002	-	-	0.017	0.079	-	-	-
HCM Control Delay (s)	7.2	0	-	9	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0	-	-

Markup Summary

dsdlaforce (14)



Subject: Callout
Page Label: 13
Author: dsdlaforce
Date: 1/8/2019 1:41:42 PM
Color: ■

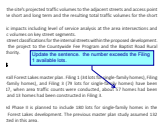
Expand the narrative regarding Lindberg. Explain the change in traffic behavior prior to and after forest lakes development. Does the original TIS include traffic counts on Lindberg prior to this access connection?



Subject: Callout
Page Label: 8
Author: dsdlaforce
Date: 1/8/2019 1:42:20 PM
Color: ■

Filing 1 required an escrow sufficient to pave Lindbergh Rd up to Doolittle Rd (Resolution No. 02-165) with the County making final determination.

The current TIS has now shown that traffic on Lindbergh Road has exceed 200 ADT; therefore per ECM 2.2.7.B.2 Paving Policy, the developer shall pave Lindberg Rd up to Doolittle Rd with this phase.



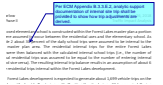
Subject: Callout
Page Label: 3
Author: dsdlaforce
Date: 12/18/2018 10:21:45 AM
Color: ■

Update the sentence. the number exceeds the Filing 1 available lots.



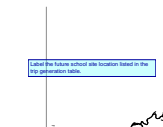
Subject: Callout
Page Label: 3
Author: dsdlaforce
Date: 12/18/2018 10:30:43 AM
Color: ■

For clarity use the EPC road classification nomenclature for all the area roadways. Example: Is Forest Lakes Drive an Urban Non-Residential Collector or Urban Residential Collector?



Subject: Callout
Page Label: 6
Author: dsdlaforce
Date: 12/26/2018 3:05:06 PM
Color: ■

Per ECM Appendix B.3.3.E.2, analytic support documentation of internal site trip shall be provided to show how trip adjustments are derived.



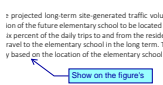
Subject: Text Box
Page Label: 12
Author: dsdlaforce
Date: 12/26/2018 3:35:03 PM
Color: ■

Label the future school site location listed in the trip generation table.



Subject: Callout
Page Label: 5
Author: dsdlaforce
Date: 12/26/2018 3:54:04 PM
Color: ■

List the growth rate used/assumed.



Subject: Callout
Page Label: 6
Author: dsdlaforce
Date: 12/26/2018 3:59:10 PM
Color: ■

Show on the figure's



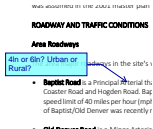
Subject: Highlight
Page Label: 6
Author: dsdlaforce
Date: 12/26/2018 3:59:34 PM
Color:

based on the location of the elementary school site.



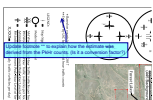
Subject: Callout
Page Label: 3
Author: dsdlaforce
Date: 12/26/2018 4:03:34 PM
Color:

Use the County nomenclature for clarity: Urban Non-Residential Collector or Urban Residential Collector. Similar comment applies to Baptist Road, Old Denver Road, Lindbergh Road and Spatz Road (mainly identify if Rural or Urban).



Subject: Callout
Page Label: 3
Author: dsdlaforce
Date: 12/26/2018 4:05:27 PM
Color:

4In or 6In? Urban or Rural?



Subject: Callout
Page Label: 13
Author: dsdlaforce
Date: 12/27/2018 10:41:43 AM
Color:

Update footnote ** to explain how the estimate was derived from the PkHr counts. (Is it a conversion factor?)



Subject: Callout
Page Label: 9
Author: dsdlaforce
Date: 12/27/2018 9:44:37 AM
Color:

Verify/clarify. Looking through previous Forest Lakes application such as Forest Lakes 2 PUD (PUDSP152) it noted that development is subject to the EPC Road Impact Fee Program in accordance with the Resolution to Terminate the Development Agreement for Off-Site Transportation Improvements (Resolution 15-199).

Identify what option the developer will be selecting for payment.



Subject: Text Box
Page Label: 9
Author: dsdlaforce
Date: 12/27/2018 9:47:44 AM
Color:

State whether the MTCP or other approved corridor study calls for the construction of improvements in the immediate area.

Add a reference section and list other traffic studies by the consultant in the area of study within the past five years. State whether the current study is consistent with those studies and explain any discrepancies.