

The Department of Community Development

City Hall, Lynchburg, VA 24504

434-455-3900

To: Planning Commission
From: Planning Division
Date: May 13, 2015
Re: **Rezoning: 2634 Lakeside Drive - B-3, Community Business District to B-5C, General Business District (Conditional)**

I. PETITIONER

Chief Investments, LLC, Attention Kendall Craft, 3914 Old Forest Road, Lynchburg, VA 24501
Representative: Gary Case & Company, Gary Case, 307 Brook Park Place, Forest, VA 24551

II. LOCATION

The subject property includes one tract of approximately thirteen and eight hundred fifty-four thousandths (13.854) acres located at 2634 Lakeside Drive.

Property Owner: Lakeside Land LLC, 455 2nd Street, Charlottesville, VA 22902

III. PURPOSE

The purpose of the petition is to rezone the property from B-3, Community Business District to B-5C, General Business District (Conditional) to allow automobile sales, leasing and service. Outparcels not associated with the automobile dealership would be limited to uses allowed in the B-3, Community Business District such as restaurant, retail sales or office.

IV. SUMMARY

- The *Future Land Use Map (FLUM)* recommends a Community Commercial land use for the area.
- The property is located in the area covered by the Route 221 Corridor Plan - Bedford County/City of Lynchburg.
- The rezoning would allow for the construction of an automobile dealership, but limit out parcels to uses allowed in the B-3, Community Business District.

The Planning Division recommends approval of the rezoning petition.

V. FINDINGS OF FACT

1. **Comprehensive Plan.** The *Future Land Use Map (FLUM)* of the *Comprehensive Plan 2013-2030* recommends a Community Commercial use for the area. Community Commercial areas contain retail, personal service, entertainment, and restaurant uses that draw customers from at least several neighborhoods, the entire City or the region. Community Commercial areas contain clusters of businesses, often at major intersections, and shipping centers. (p. 75) Community Commercial areas are the most intense retail category designated on the *FLUM*. Automobile sales and other retail uses are appropriate in these areas.

Lakeside Drive is a primary travel corridor and was the focus of the Route 221 Corridor Plan – Bedford County/City of Lynchburg. This plan was adopted by Council on November 11, 2014. The plan provides recommendations for signal coordination, pedestrian, bicycle and transit facility improvements, intersection improvements, road widening and access management improvements from Cloverhill Boulevard in Bedford County to Forest Brook Road in the City of Lynchburg.

2. **Zoning.** The subject property was annexed into the City in 1976. The existing B-3, Community Business District zoning was established on October 13, 1992 upon adoption of the Graves Mill Road / U.S. 221 Area Land Use Study.
3. **Proffers.** The petitioner has voluntarily submitted the following proffers:
 - Petitioner will be allowed to use the property for uses allowed by right under the B-5, General Business District classification relating to automobile, truck and trailer sales, leasing, storage and related products and services.
 - All other uses will be uses permitted by right under the B-3, Community Business District classification.
 - Any sales of outparcels will have a provision in the deed requiring cross access and pedestrian connections.
 - Petitioner will agree to make the improvements recommended in the traffic study dated May 1, 2015 by Bill Wuensh, P.E., PTOE, with EPRC, submitted to Don DeBerry, P.E., Traffic Engineer with the City of Lynchburg and shown on the site plan.
4. **Board of Zoning Appeals (BZA).** The Zoning Official has determined that no variances would be needed for the development of the property as proposed.
5. **Surrounding Area.** There have been several items requiring City Council approval in the immediate area:
 - On September 28, 1982, Council approved the conditional use permit petition of A.T. Williams Oil Company to allow the construction of an auto service station at 2501 Lakeside Drive.
 - On October 14, 1986, Council approved the petition of Elizabeth T. Hammersley to rezone 2643 Lakeside Drive from R-3, Medium Density, Two-Family Residential District and I-2, Light Industrial District to B-5, General Business District.
 - On May 14, 1991, Council adopted the petition of Southern Air to rezone 2652 Lakeside Drive from I-3, Heavy Industrial District to B-5C, General Business District (Conditional).
 - On May 26, 1992, Council adopted the Graves Mill Road / U.S. 221 Area Land Use Study.
 - On October 13, 1998, Council approved the conditional use permit petition of Pavilion Development to allow the construction of a single bay carwash at 2625 Lakeside Drive.
 - On March 11, 2011, Council approved the petition of Chief Investments, Kendall Craft to rezone 101 Breezewood Drive from B-3, Community Business District to B-5, General Business District.
 - On March 12, 2013, Council approved the rezoning petition of Clarion Investments, LLC to rezone 2625 Lakeside Drive from B-3, Community Business District to B-5, General Business District.
 - On November 11, 2014, Council adopted the Route 221 Corridor Plan – Bedford County / City of Lynchburg as part of the City's *Comprehensive Plan*.
6. **Site Description.** The subject property includes one tract totaling approximately thirteen and eight hundred fifty-four thousandths (13.854) acres. The property is currently vacant but does contain an access road extending from Lakeside Drive to Jefferson Ridge Parkway. The site is adjacent to the Norfolk Southern Railroad to the north, a convenience store and a

Lynchburg Fire Station (across Jefferson Ridge Parkway) to the east, automobile dealerships and storage warehouses to the south (across Lakeside Drive) and a home improvement center to the west.

7. **Proposed Use of Property.** If the rezoning petition is approved, the property would be developed as an automobile dealership and associated uses. Outparcels not associated with the dealership would be developed as uses permitted in B-3, Community Business Districts. These uses would most likely include restaurants, office retail sales.
8. **Traffic, Parking and Public Transit.** The City's Traffic Engineer has reviewed the Traffic Study prepared by EPRPC. Recommendations of the traffic study have been proffered and indicated on the submitted rezoning plan.

The traffic study recommends the following improvements:

- Northernmost site entrance to be shared with Sheetz. If sharing the entrance is not feasible then the northern entrance should be relocated one hundred fifty (150) feet to the south and provide for a one hundred (100) foot taper.
- The northern most entrance should be right in / right out only.
- The southernmost entrance may be full access but should be located directly across from the entrance located (across) at 2643 Lakeside Drive or to the south of the entrance. A right turn taper should be provided. During final site plan design, further study may indicate the need for a full right turn lane based upon site uses.

The traffic study noted that “if, when fully developed, a safety concern develops as a result of congestion in the two-way left turn lane, or angle crashes, then the City may need to pursue a project to modify the median”. (Comment 8, p. 3 of EPRPC study). This comment is consistent with the recommendations and findings of the Route 221 Corridor Plan – Bedford County / City of Lynchburg adopted by Council on November 11, 2014. It should be noted that a future modification of the median could involve preventing left turn movements into the site.

While the petitioner has proffered that “any sales of outparcels will have a provision in the deed requiring cross access and pedestrian connections”, the petitioner has chosen to not proffer the site plan. Staff is concerned that future development of outparcel “A” may request additional access onto Lakeside Drive. The Planning Commission may wish to consider seeking further clarification that an additional entrance will not be sought onto Lakeside Drive.

The submitted site plan also indicates a potential left turn lane into a shared connection with Sheetz. As indicated on the site plan, the turn lane as drawn would essentially eliminate the landscaped median on Jefferson Ridge Parkway and the entrance into the Lynchpin Industrial Park. Economic and Community Development staff would not support the destruction of this median. If a left turn lane is warranted it should be accomplished by lane striping or a widening of Jefferson Ridge Parkway to the north. Economic Development is currently developing plans to construct sidewalks in and new signage for the industrial park. The petitioner should work with Economic Development staff to coordinate need improvements on Jefferson Ridge Parkway.

The development would be not be directly served by the Greater Lynchburg Transit Company. The closest stop of new Route 7 is located adjacent to 2625 Lakeside Drive on Breezewood Drive.

9. **Stormwater Management.** A stormwater management and erosion and sediment control plan will be required prior to final site plan approval and development of the property as proposed. The property currently contains a detention facility in the northwest corner of the property. This facility will need to be redesigned in order to meet current water quality and quantity requirements.
10. **Emergency Services.** The City Fire Marshal and Police Department had no comments of concern regarding the proposed development.
11. **Impact.** The petition proposes the rezoning of the property to allow for the development of an automobile dealership. Outparcels would be limited to those uses currently allowed in the existing B-3, Community Business District. The property is immediately adjacent to and directly across from other areas currently zoned B-5, General Business District. The area contains other automobile dealerships and the proposal would not be out of character with the area.

The primary impacts of the proposal are related to traffic. The petitioner has proffered to make improvements as recommended in the submitted traffic study. Internal vehicle and pedestrian connections to outparcels have also been proffered.

While staff would have preferred a more detailed and proffered site plan, the site should develop with little impact to the area.
12. **Technical Review Committee.** The Technical Review Committee (TRC) reviewed the preliminary rezoning plan on April 21, 2015. Comments related to the proposed use have or will be addressed by the petitioner prior to final site plan approval.

VI. PLANNING DIVISION RECOMMENDATION

Waive the twenty-one (21) day submittal requirement for proffers.

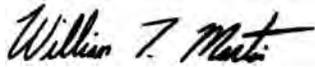
Based on the preceding Findings of Fact, the Planning Commission recommends to City Council approval of the petition of Chief Investments, LLC to:

Rezone approximately thirteen and eight hundred fifty-six thousandths (13.856) acres at 2634 Lakeside Drive from B-3, Community Business District to B-5C, General Business District (Conditional) subject to the following voluntarily submitted proffers:

- **Petitioner will be allowed to use the property for uses allowed by right under the B-5, General Business District classification relating to automobile, truck and trailer sales, leasing, storage and related products and services.**
- **All other uses will be uses permitted by right under the B-3, Community Business District classification.**
- **Any sales of outparcels will have a provision in the deed requiring cross access and pedestrian connections.**

- **Petitioner will agree to make the improvements recommended in the traffic study dated May 1, 2015 by Bill Wuensh, P.E., PTOE, with EPRC, submitted to Don DeBerry, P.E., Traffic Engineer with the City of Lynchburg and shown on the site plan.**

This matter is respectfully offered for your consideration.

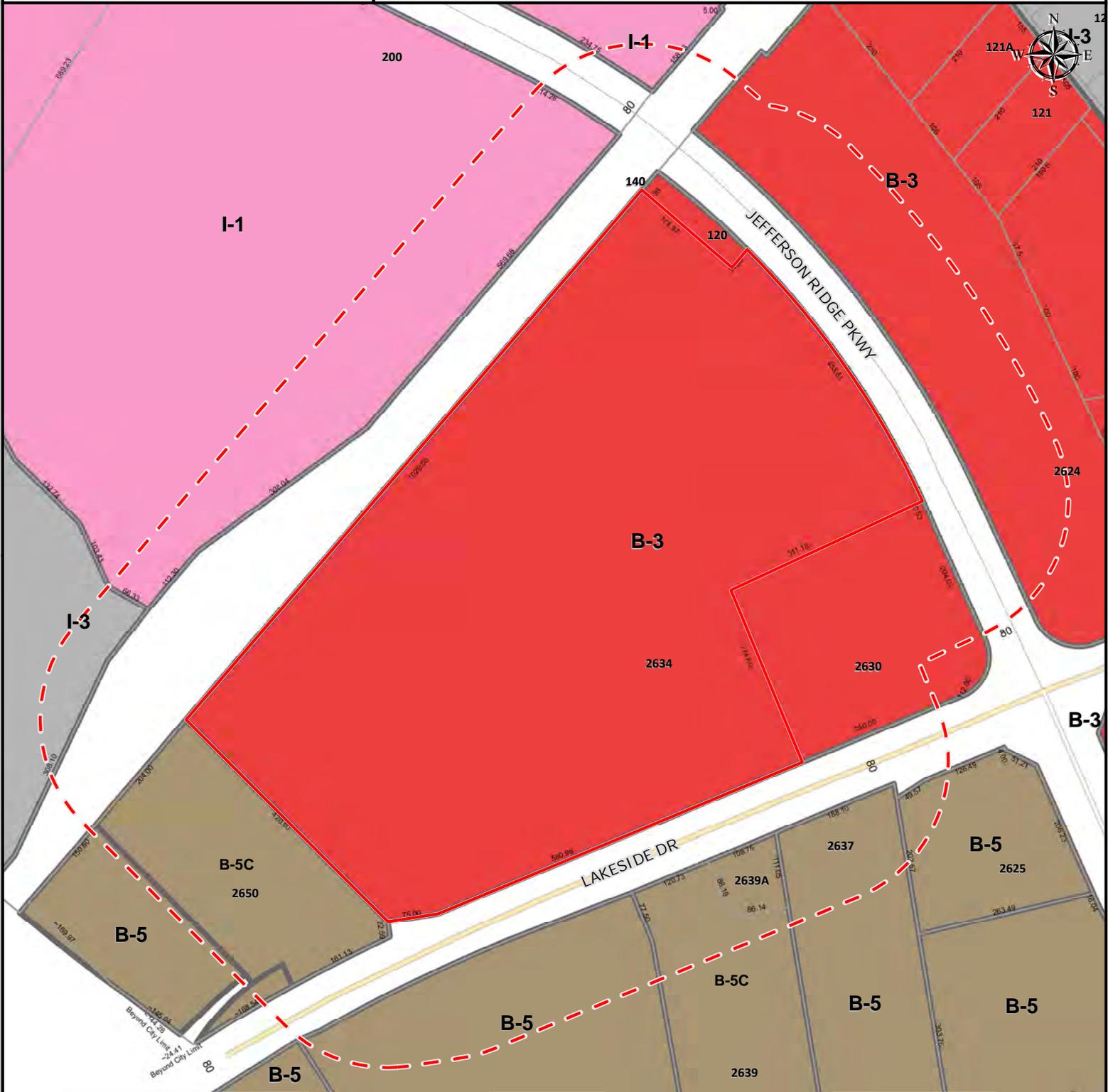


William T. Martin, AICP
City Planner

pc: Mr. L. Kimball Payne, III, City Manager
Ms. Bonnie M. Svrcek, Deputy City Manager
Mr. Walter C. Erwin, City Attorney
Mr. Kent L. White, Director of Community Development
Mr. J. Lee Newland, City Engineer
Ms. Cynthia Kozerow, Lynchburg Police Department
Battalion Chief Thomas Goode, Fire Marshal
Mr. Don DeBerry, Transportation Engineer
Mr. Doug Saunders, Building Commissioner
Mr. Kevin Henry, Zoning Administrator
Mr. Kendall Craft, Petitioner
Mr. Gary Case, Representative

VII. ATTACHMENTS

- 1. Zoning Map**
- 2. FLUM Map**
- 3. Watershed Map**
- 4. Planimetric and Topographic Map**
- 5. Rezoning Plan**
- 6. Traffic Study**
- 7. Property Photograph**



PROPERTY INFORMATION

PARCEL ID	ADDRESS
23111002	2634 LAKESIDE DR

LEGEND

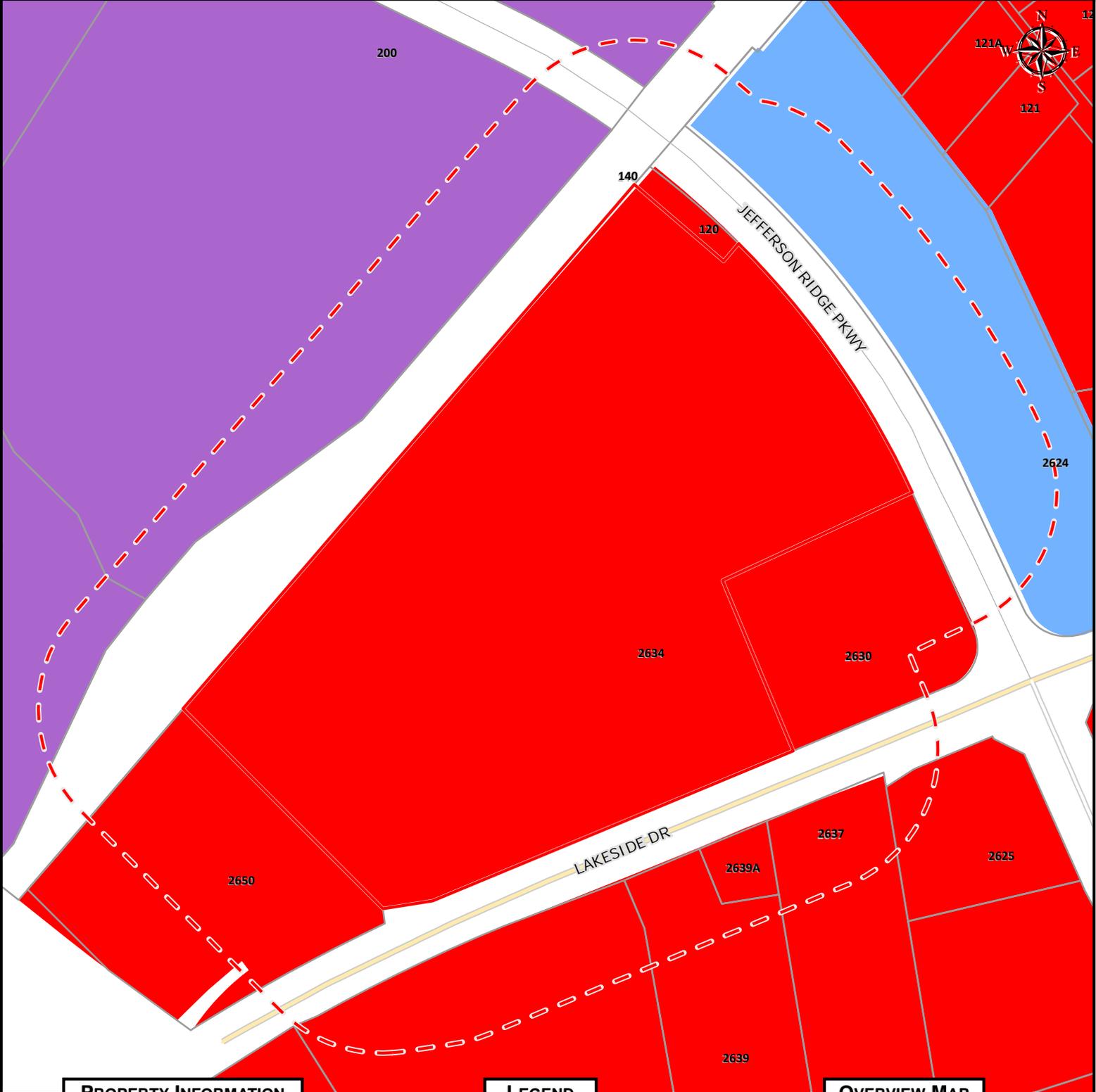
- Subject Property**
 - 215' Buffer**
- | | | |
|--|---|---|
| B-1 | B-6 | R-2 |
| B-2 | I-1 | R-3 |
| B-3 | I-2 | R-4 |
| B-4 | I-3 | R-5 |
| B-5 | R-1 | R-C |

OVERVIEW MAP



MAP SCALE: 1" to 200' DATE PRINTED: 5/1/2015

Parcel ID	Address	Owner
23111005	120 JEFFERSON RIDGE PKWY	CITY OF LYNCHBURG
23201002	200 JEFFERSON RIDGE PKWY	ECONOMIC DEVELOPMENT AUTHORITY
22502004	201 JEFFERSON RIDGE PKWY	HARRIS CORPORATION
23111001	2630 LAKESIDE DR	WALKER, REGINALD C ET AL
23111003	140 JEFFERSON RIDGE PKWY	NORFOLK & SOUTHERN RAILWAY
23110003	2643 LAKESIDE DR	2643 LAKESIDE ASSOCIATES LLC
22502002	230 JEFFERSON RIDGE PKWY	FRITO LAY INC
23110008	2639 A LAKESIDE DR	CLARION INVESTMENTS LLC
23111004	2624 LAKESIDE DR	CITY OF LYNCHBURG
23109001	2625 LAKESIDE DR	CLARION INVESTMENTS LLC
23110001	2637 LAKESIDE DR	SOVRAN ACQUISITION LIMITED PARTNERSH
23111002	2634 LAKESIDE DR	LAKESIDE LAND LLC
23112002	2650 LAKESIDE DR	OVERSTREET, CHARLES P & KATHRYN T
23110002	2639 LAKESIDE DR	CLARION INVESTMENTS LLC



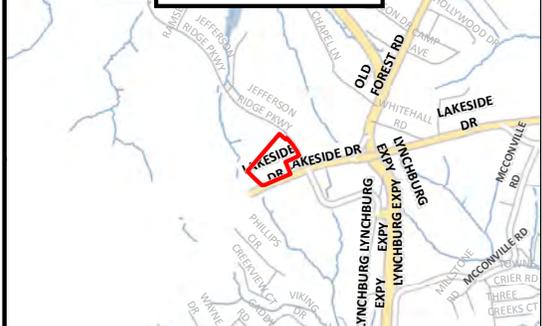
PROPERTY INFORMATION

PARCEL ID	ADDRESS
23111002	2634 LAKESIDE DR

LEGEND

- Local Historic District
- Traditional Residential
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Neighborhood Commercial
- Community Commercial
- Employment 1
- Employment 2
- Downtown
- Institution
- Public Use
- Public Parks
- Resource Conservation
- Mixed Use

OVERVIEW MAP



MAP SCALE: 1" to 200' DATE PRINTED: 5/1/2015



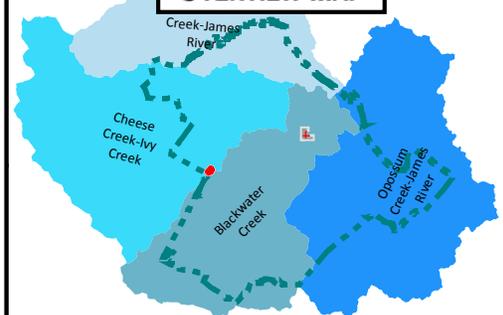
PROPERTY INFORMATION

PARCEL ID	ADDRESS
23111002	2634 LAKESIDE DR

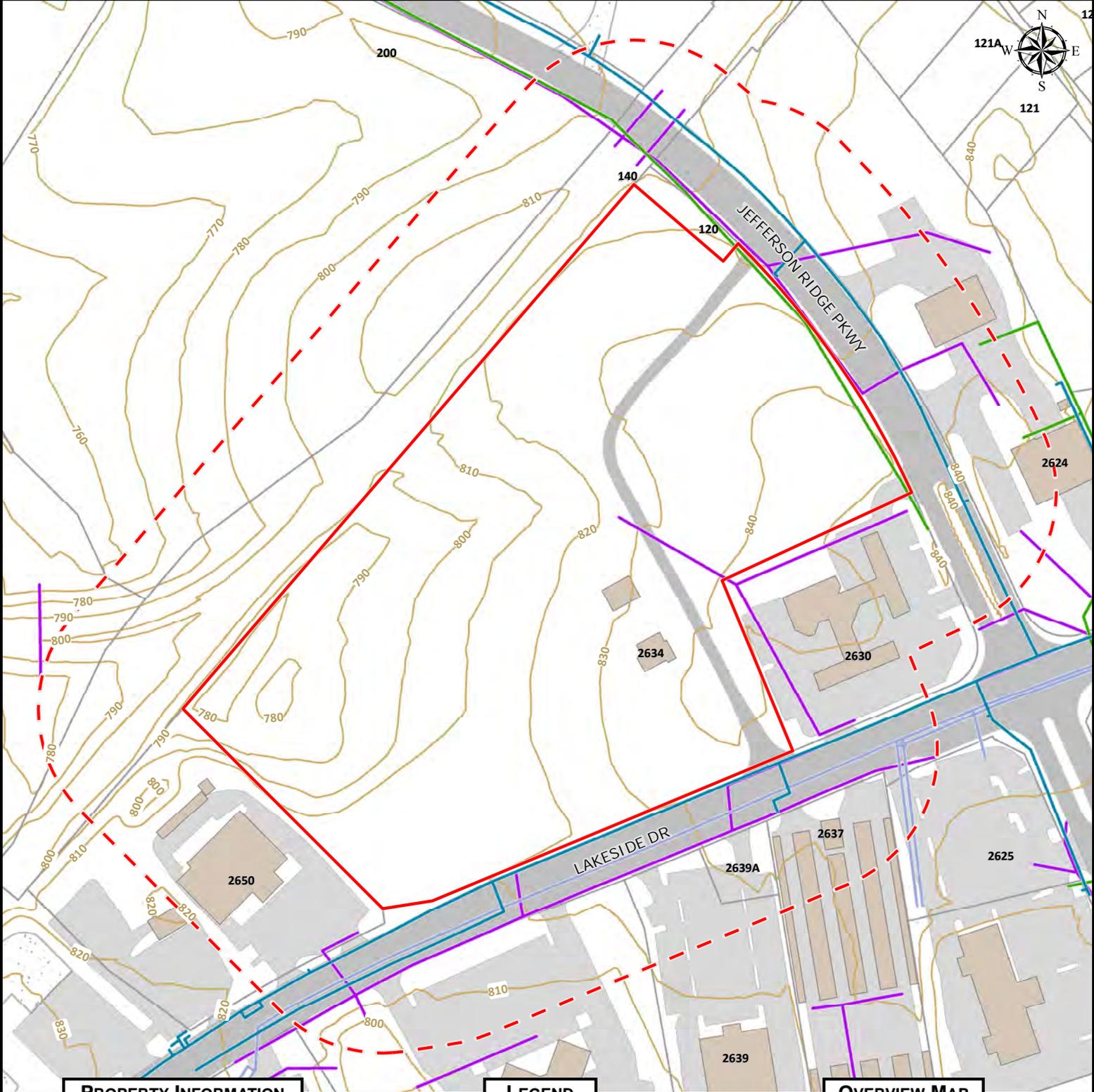
LEGEND

- Subject Property
- Base Flood Elevation
- Floodway
- Floodzone
- River / Lake / Stream

OVERVIEW MAP



MAP SCALE: 1" to 200' DATE PRINTED: 5/1/2015



PROPERTY INFORMATION

PARCEL ID	ADDRESS
23111002	2634 LAKESIDE DR

LEGEND

	Active	Proposed	Abandoned
Utilities	Water		
	Sanitary		
	Storm		
Planimetrics	Structure		
	Roadway		
	Parking		
	Sidewalk		
	Driveway		
Topography	Contour		

OVERVIEW MAP

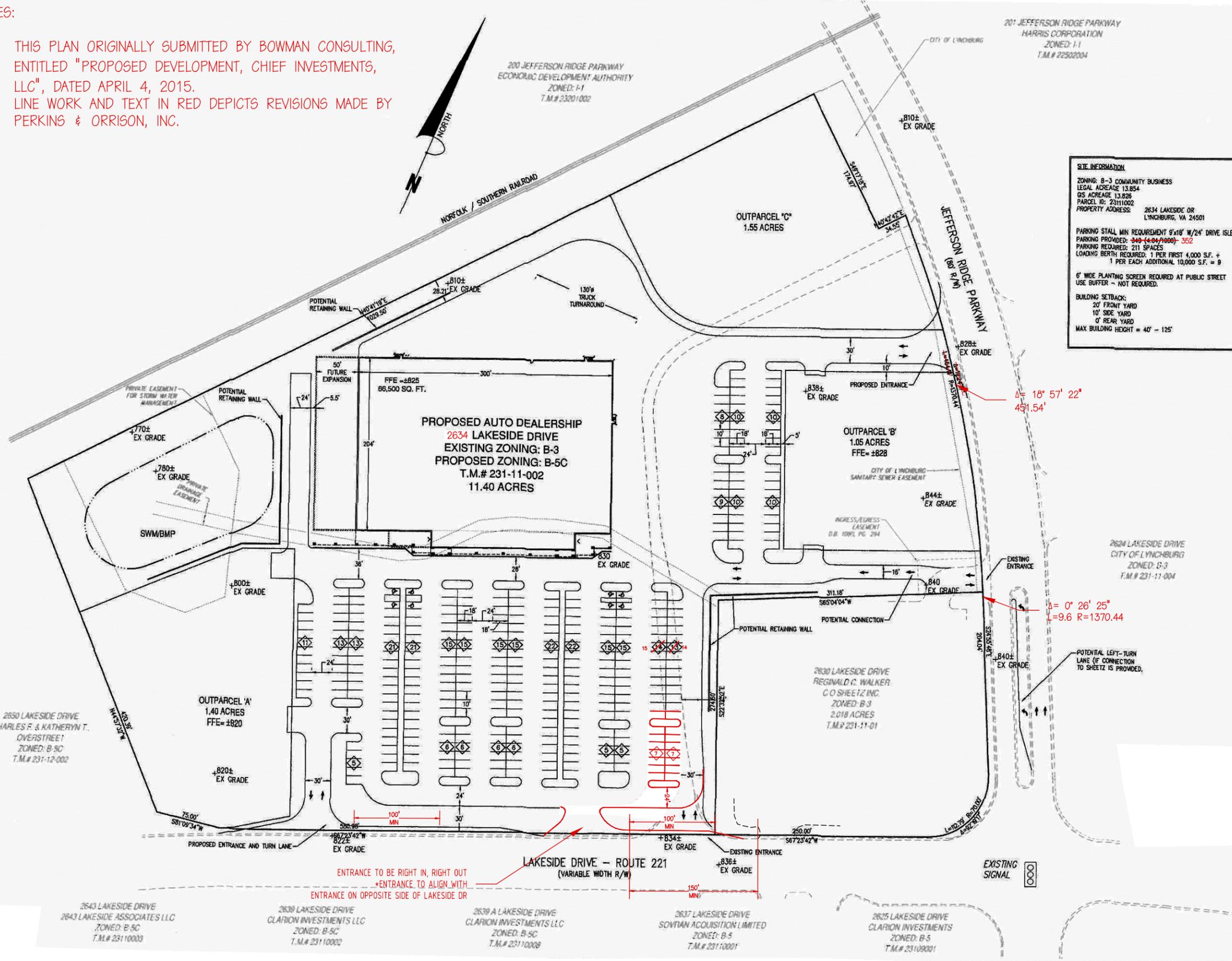


MAP SCALE: 1" to 200' DATE PRINTED: 5/1/2015

DISCLAIMER: THIS MAP IS NEITHER A LEGALLY RECORDED MAP NOR A SURVEY AND IS NOT INTENDED TO BE USED AS SUCH. THE INFORMATION DISPLAYED IS A COMPILATION OF RECORDS, INFORMATION, AND DATA OBTAINED FROM VARIOUS SOURCES. THE CITY OF LYNCHBURG IS NOT RESPONSIBLE FOR ITS ACCURACY OR HOW CURRENT IT MAY BE.

NOTES:

1. THIS PLAN ORIGINALLY SUBMITTED BY BOWMAN CONSULTING, ENTITLED "PROPOSED DEVELOPMENT, CHIEF INVESTMENTS, LLC", DATED APRIL 4, 2015.
2. LINE WORK AND TEXT IN RED DEPICTS REVISIONS MADE BY PERKINS & ORRISON, INC.



SITE INFORMATION

ZONING: B-3 COMMUNITY BUSINESS
 LEGAL ACREAGE 13.854
 GS ACREAGE 13.826
 PARCEL ID: 2311002
 PROPERTY ADDRESS: 2634 LAKESIDE DR LYNCHBURG, VA 24501

PARKING STALL MIN REQUIREMENT 9'x18' W/24' DRIVE ISLE
 PARKING PROVIDED: ~~340 (4,041,000)~~ 352
 PARKING REQUIRED: 211 SPACES
 LOADING BERTH REQUIRED: 1 PER FIRST 4,000 S.F. +
 1 PER EACH ADDITIONAL 10,000 S.F. = 9

6' WIDE PLANTING SCREEN REQUIRED AT PUBLIC STREET
 USE BUFFER - NOT REQUIRED.

BUILDING SETBACK:
 20' FRONT YARD
 10' SIDE YARD
 0' REAR YARD
 MAX BUILDING HEIGHT = 40' - 125'

PERKINS & ORRISON
 ENGINEERS ▲ PLANNERS ▲ SURVEYORS

PO BOX 1567 17 W. NELSON STREET
 LEXINGTON, VIRGINIA 24450
 PHONE: 540-464-9001 FAX: 540-464-5009
 EMAIL: PNO@PERKINS-ORRISON.COM

27 GREEN HILL DRIVE
 FOREST, VIRGINIA 24551
 PHONE: 434-525-5985 FAX: 434-525-5986

JOB:
**REZONING PLAN
 FOR 2634 LAKESIDE DR**

LYNCHBURG, VA

CLIENT:
CHIEF INVESTMENTS, LLC

MARK	DATE	DESCRIPTION

ISSUE: 05/07/15
 CONTOUR INTERVAL: 2'
 DRAWN BY: MJD/NBW
 CHECKED BY: NBW

REZONING PLAN

GRAPHIC SCALE

P:\2015\15151 - 2635 LAKESIDE DR REZONE.dwg\C-RZ-15151.dwg 5/8/2015 8:30 AM



EPR, P.C. "ENGINEERING & PLANNING RESOURCES"
637 BERKMAR CIRCLE, CHARLOTTESVILLE, VA 22901

TO: DON DEBERRY, P.E.

FROM: BILL WUENSCH, P.E., PTOE

ORGANIZATION: CITY OF LYNCHBURG

DATE: MAY 1, 2015

PHONE NUMBER:

SENDER'S REFERENCE NUMBER:

RE: CRAFT SITE AT JEFFERSON RIDGE PKWY
AND LAKESIDE DRIVE

YOUR REFERENCE NUMBER:

MEMORANDUM

URGENT FOR YOUR USE PLEASE COMMENT PLEASE REPLY PLEASE RECYCLE

EPR was retained by Kendall Craft to provide an analysis of traffic per the proposed concept site plan for the parcel of land adjacent to the Scheetz at Lakeside Drive and Jefferson Ridge Parkway. See attached **Figure 1** for the site location. The purpose of the study was to an assessment of trip generation and feasibility of having access onto Lakeside Drive. AS shown on the site concept, there are two entrances on Jefferson Ridge Parkway which gives motorists an opportunity to use the signalized intersection to access Lakeside Drive. Thus the study focused on the commercial entrances directly onto Lakeside Drive. The study methodology generally entailed the following steps:

1. Become familiar with the site concept plan. The concept plan illustrates the intention to construct a mix of car dealership, restaurant, and either office or specialty retail depending on market conditions. See attached **Figure 2** for an approximate overlay of the concept site plan on an aerial image.
2. Assemble traffic data for the intersection of Breezewood/Jefferson Ridge and Lakeside Drive per the recent traffic study for Aldi. This included the PM traffic count for the subject intersection. The PM peak hour seems to be the critical time period given that car dealership and restaurant traffic is minimal in the AM peak hour of the day. **Figure 3** summarizes the traffic data that was provided in the Aldi study.
3. Observe and count turning movements from adjacent business from the Scheetz south to the Volvo dealership. The turns to and from each of the eight entrances was counted

and summarized. The observations were performed between the hours of 4PM and 6PM on Tuesday April 28th. See the summary of traffic counts in the attachments to this memorandum, and also **Figure 4** for a summary of peak hour turning movements within the 4-6PM time for each entrance. **Figure 5** combines that data with the existing background traffic using the counts from the intersection and balancing those through the corridor. **Figure 6** is similar to Figure 5 though includes the projected Aldi traffic. Critical observations include the following:

- a. The traffic from the adjacent sites are all very minimal. See slide 5. However, the traffic at the Scheetz entrance is significant. There were minimal amount of left turns (to north on Lakeside Drive) from Scheetz, however when these occurred there was significant delay that caused queuing of other vehicles looking to make a right out of the site. Also, it appeared that drivers were choosing to accept a minimal gap in traffic.
 - b. The left turns from Lakeside onto Jefferson Ridge were minimal and queuing was minimal, generally only one car per signal cycle.
 - c. Northbound queues were generally past the Scheetz entrance, and on a few occasions within the two hours of observations the queues extended back to the Volvo dealership, though this was not the norm.
4. Estimate future traffic volumes for the future site uses. As discussed, the mix of uses includes a car dealership, restaurant, and office or specialty retail. The trip generation estimates are shown in **Figures 7 and 8**. The ITE Trip Generation Manual allows for estimating trips using either building square footage, or number of employees. At this time we only have the building square footage. Comparing the volume produced by this calculation to that observed at the adjacent three dealerships it was apparent that this methodology was producing numbers that were not in scale with the other development. The proposed site concept is showing a building that is approximately twice the size of the adjacent car dealership buildings, yet the trips estimated by the ITE methodology were 10 to 20 times that actually observed in the field. Therefore the ITE trip estimates were reduced by 50% to make some allowance for actual conditions expected in comparison with the other dealerships. Two trip generation scenarios were considered, one with office and the other with specialty retail. The results were not that different, thus the higher of the two was utilized for this analysis.
5. Examine available crash records from the City. Per the records examined, there was one serious crash at the Scheetz entrance and rear end type crashes along the study area.

However there were no reported crashes that seemed to point to the two way left turn lane as being an issue. Anecdotally, per the observed volumes, there are relatively few turns, except for at Scheetz, using the two way left turn lane.

6. Estimate trip distribution and assign the site trips to the road network. This information is shown on **Figures 9 and 10**. The trip distribution generally follows that utilized for the Aldi site. The build condition traffic estimates are provided in **Figure 11**. This assumes that the southerly entrance is full access and the northerly entrance is restricted to right-in/out only.
7. Perform an analysis of delay for left turning vehicles leaving the site. Based on the assumption that there would be 30 left turns out of the southerly site driveway, the level of service is in the F range with over 90 seconds of delay. However, the traffic model does not fully account for gaps in traffic caused by the upstream signal, though given the volume of southbound traffic in the afternoons in the peak hour we would expect significant delay to make that movement. A Synchro model output is provided in the attachments to this memorandum.
8. Provide recommendations relative to driveway configurations and turn lanes. The recommendations for access along Lakeside Drive are shown on **Figure 12**. While reconstruction of the median to a configuration that controls access is always a safer condition, it was our understanding that this option was not on the table for this development. It should be noted that if, when fully developed, a safety concerns develops as a result of congestion in the two way left turn lane, or angle crashes, then the City may need to pursue a project to modify the median.

Conclusions and Recommendations

Lakeside Drive is obviously a very heavily traveled corridor of regional and local importance. Ideally in the future the two way left turn lane would be reconstructed to better control all turning movements. However, at present it is fortunate that most of the uses in this area of Lakeside Drive are light traffic generators, with exception of the Scheetz, thus there is little congestion in the two way left turn lane and the crash history does not reveal significant safety issues.

The proposed site concept has a connection over to Jefferson Ridge Parkway, which provides an ability for motorists to use that road and the signal at Lakeside Drive to make lefts to head

north. In PM peak hour of the day, this is an important option to avoid delay. This also provides a means for effective access to Lakeside Drive should a median ever get constructed in place of the two way left turn lane on Lakeside Drive.

Ideally, the northerly site entrance would be shared with Scheetz, and become a right in/out. If this is not feasible, then the site entrance should be relocated to provide approximately 150 feet to create a buffer and 100' taper. The northerly entrance needs to be a right-in/out configuration. Since there is no traffic separator in the median of Lakeside Drive, the design of the right-out feature will have to be well designed and signed.

The southerly entrance can provide for full access. However, the entrance should be located either across from the entrance on the other side of Lakeside, or to the south of the entrance. This configuration will help with driver expectancy as motorists have to share the two way left turn lane for the opposing turns. Similar to the northerly entrance, a right turn taper should be provided. Once more specifics are known about the proposed site uses, at the site plan phase of plans submittals there may be a need to provide a full right turn depending on the actual final proposed uses. i.e. if higher trip generators will be constructed then that will impact the turn lane warrants.

END OF MEMORANDUM

ATTACHMENTS:

- Figures
- Driveway counts
- Right turn lane evaluation worksheets
- Synchro output showing delay for left turning vehicles

Craft Site Traffic Study

Figure 1



Figure 2

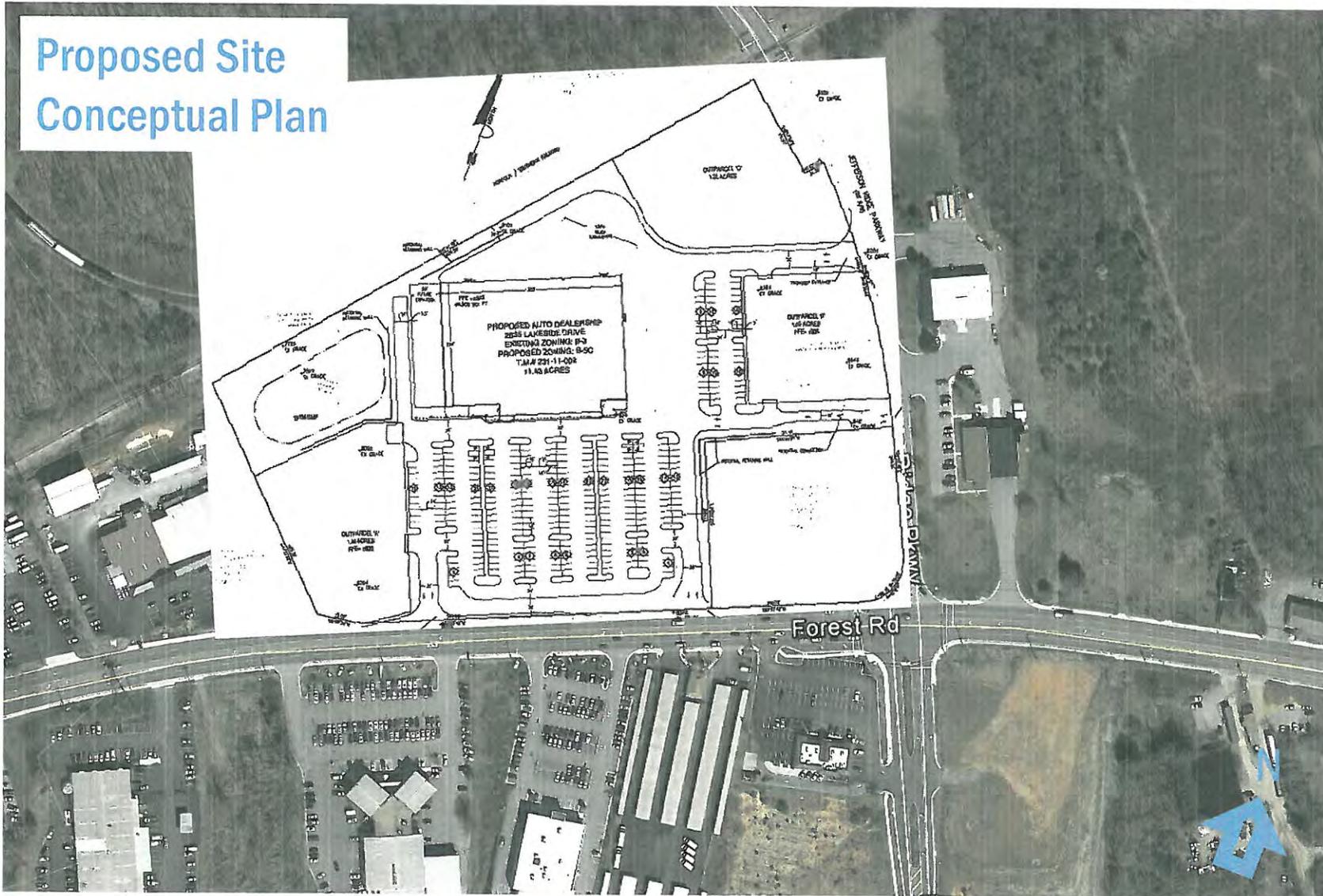
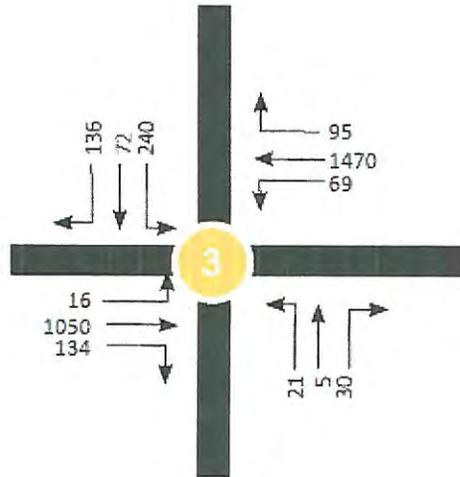


Figure 3

Existing PM Traffic Volumes & Aldi Traffic Volumes

Existing PM Traffic Volumes
Lakeside &
Jefferson Ridge / Breezewood



Projected Traffic (once Aldi is open)
Lakeside &
Jefferson Ridge / Breezewood

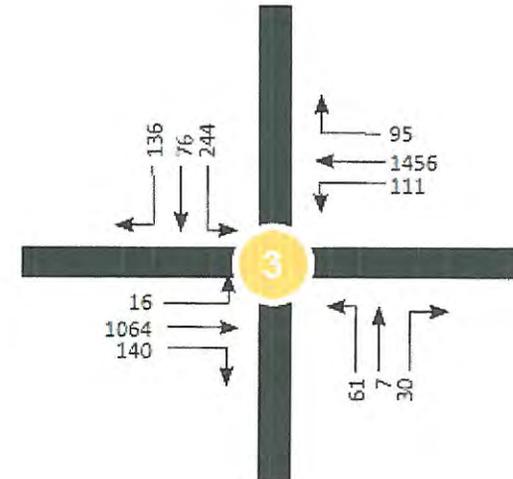
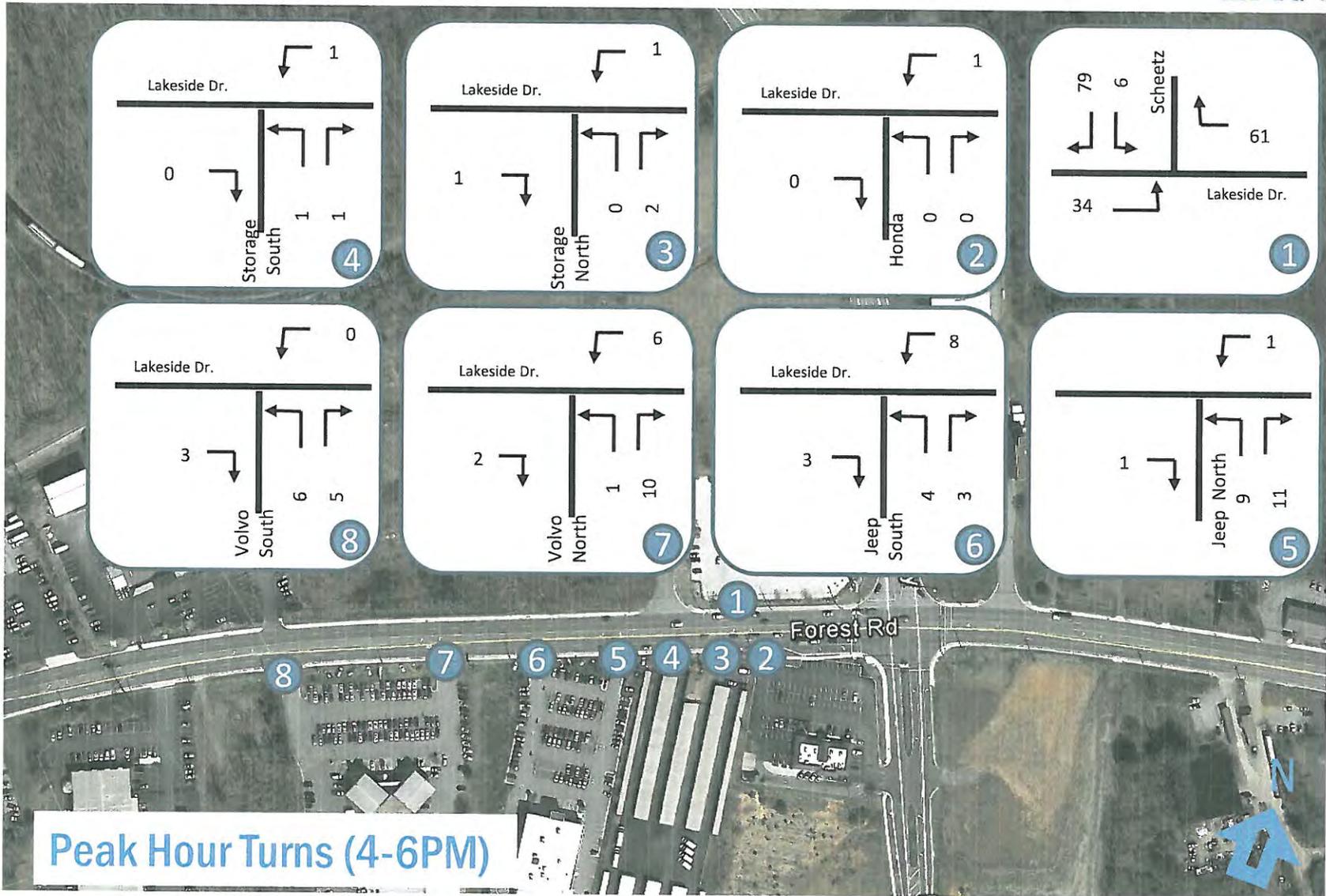


Figure 4



Peak Hour Turns (4-6PM)

Figure 5

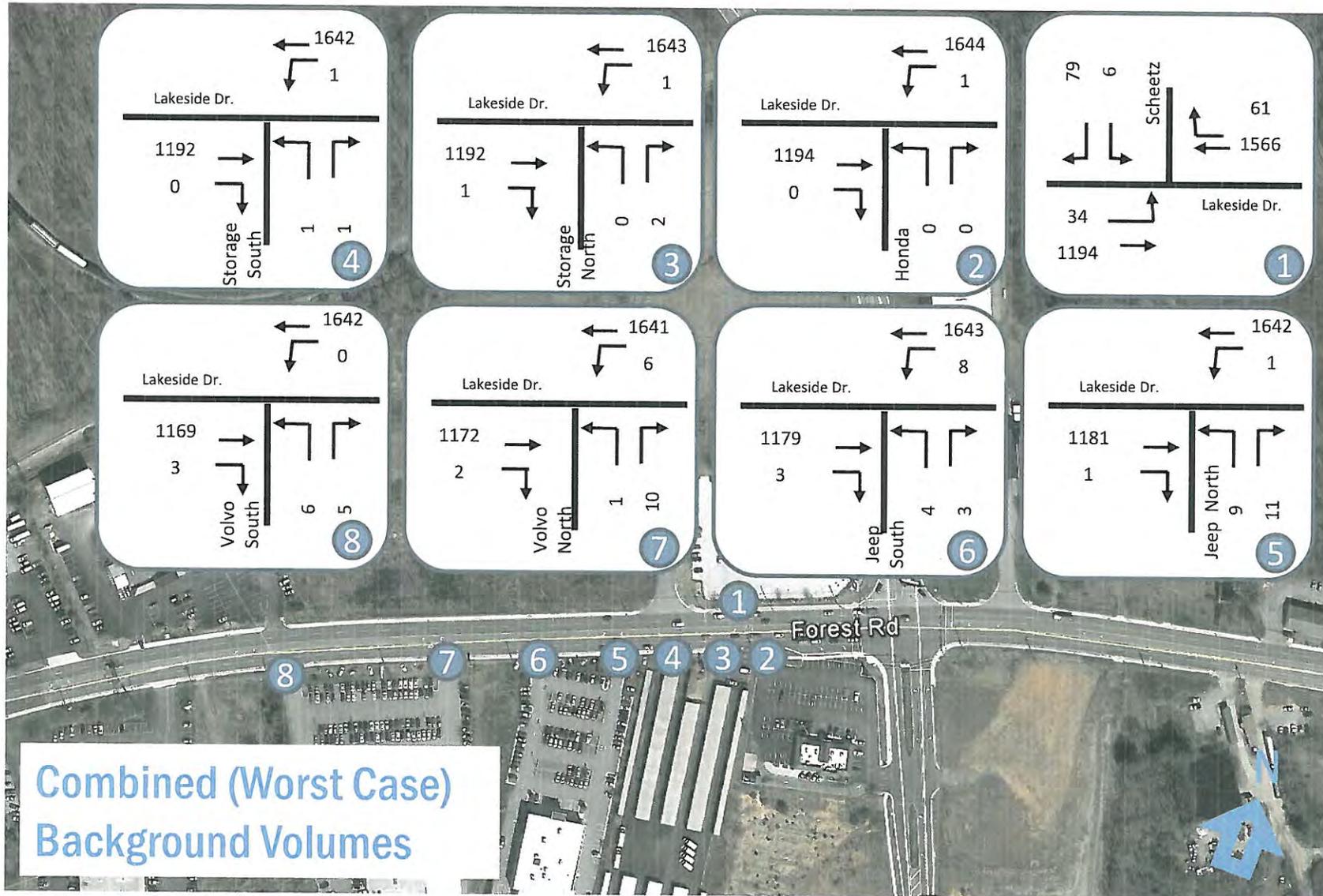
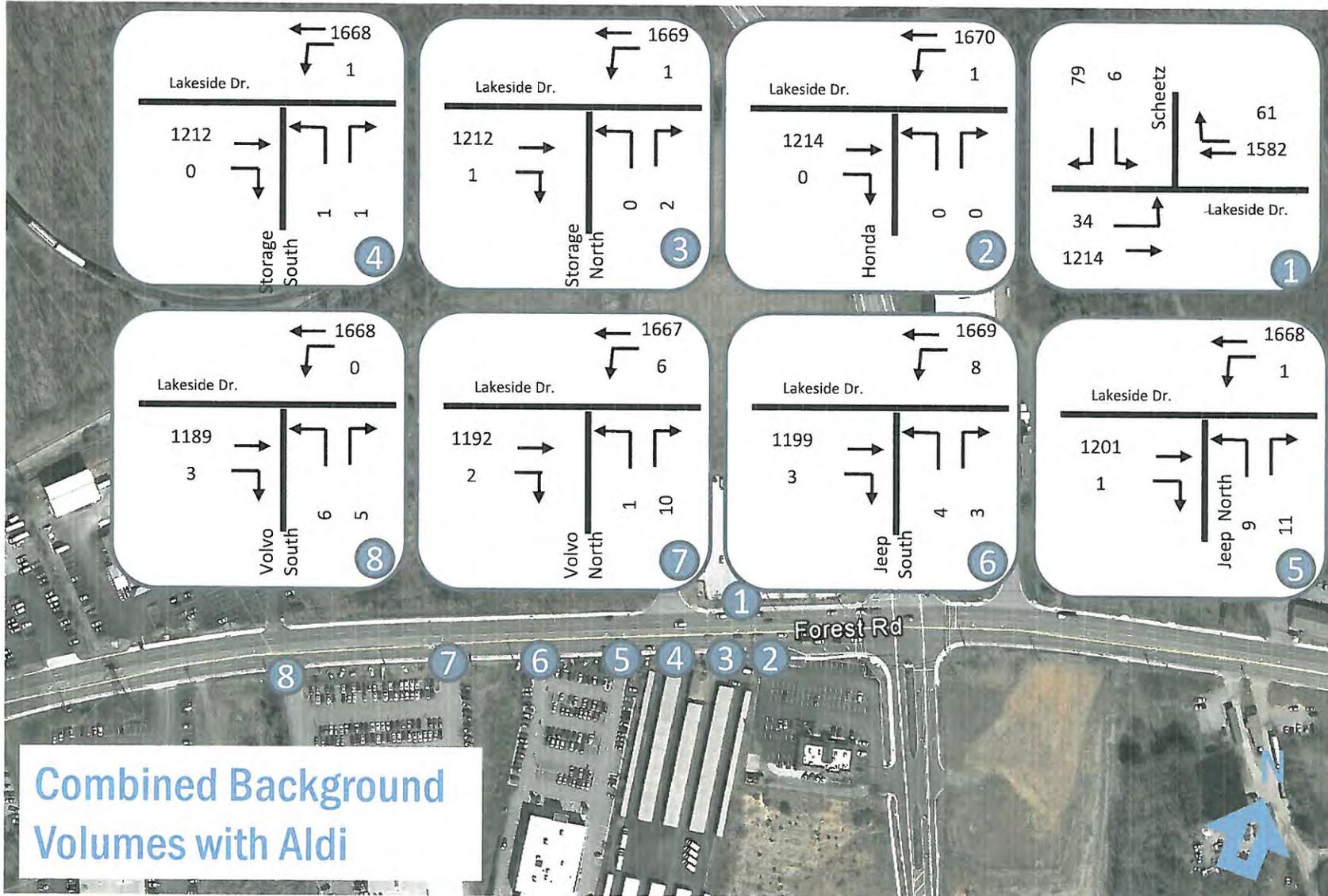


Figure 6



Combined Background
Volumes with Aldi

Figure 7

Trip Generation Scenarios

<i>Scenario 1</i>					AM		PM	
Use	Land Use Code	Unit	Quantity	Daily	in	out	in	out
Auto Sales	841	s.f.	66500	2148	96	32	70	105
High Turnover Sit Down Restaurant	932	s.f.	4000	509	24	19	24	16
Quality Restaurant	931	s.f.	5000	450	2	2	25	12
General Office	710	s.f.	10000	228	27	4	15	74
Total			85500	3334	148	57	134	207

<i>Scenario 2</i>					AM		PM	
Use	Land Use Code	Unit	Quantity	Daily	in	out	in	out
Auto Sales	841	s.f.	66500	2148	96	32	70	105
High Turnover Sit Down Restaurant	932	s.f.	4000	509	24	19	24	16
Quality Restaurant	931	s.f.	5000	450	2	2	25	12
Specialty Retail Center	826	s.f.	10000	443	0	0	20	25
Total			85500	3550	122	53	138	158

Two development scenarios are somewhat close in volumes. Based on observations of other car dealerships, the projected trips seem very high. To “tune them in” per the field observations, suggest cutting in half. ITE offers a calculation based on number of employees though we don’t have that estimate currently.

Figure 8

Trip Generation Design Scenario

<i>Adjusted Scenario</i>					AM		PM	
Use	Land Use Code	Unit	Quantity	Daily	in	out	in	out
Auto Sales (adjusted)	841	s.f.	66500	1075	48	16	35	25
High Turnover Sit Down Restaurant	932	s.f.	4000	509	24	19	24	16
Quality Restaurant	931	s.f.	5000	450	2	2	25	12
General Office	710	s.f.	10000	228	27	4	15	74
Total			85500	2261	100	41	99	128
Internal Capture - 15% (office to high turnover restaurant)					4	3	4	2
Final Driveway Trips					96	38	95	126
Passby Credit - 25% of restaurant uses					6	5	12	7
Adjusted Primary Trips					90	33	83	119

Adjusted trip generation estimates – suggested for design purposes for this application.

Figure 9

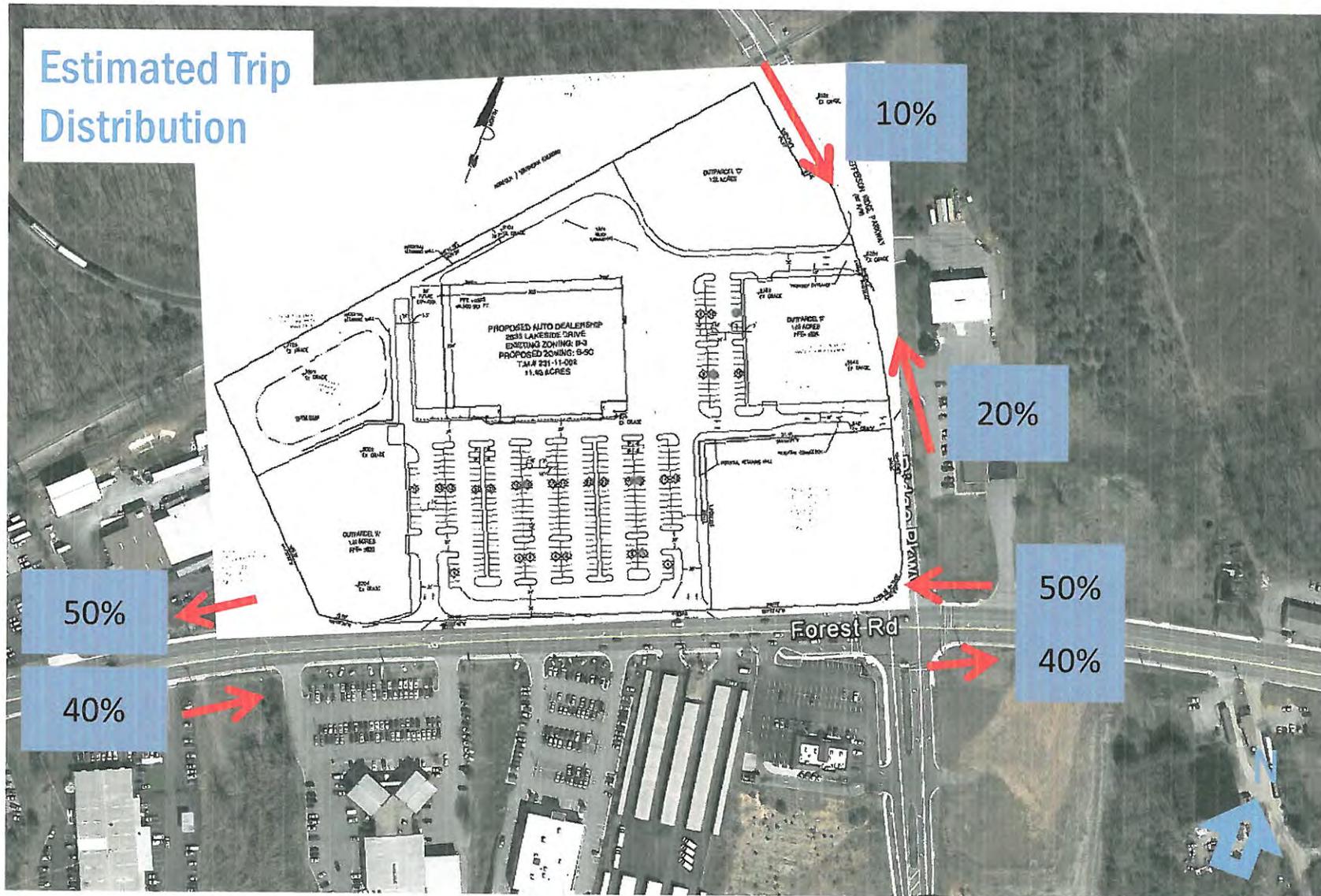


Figure 10

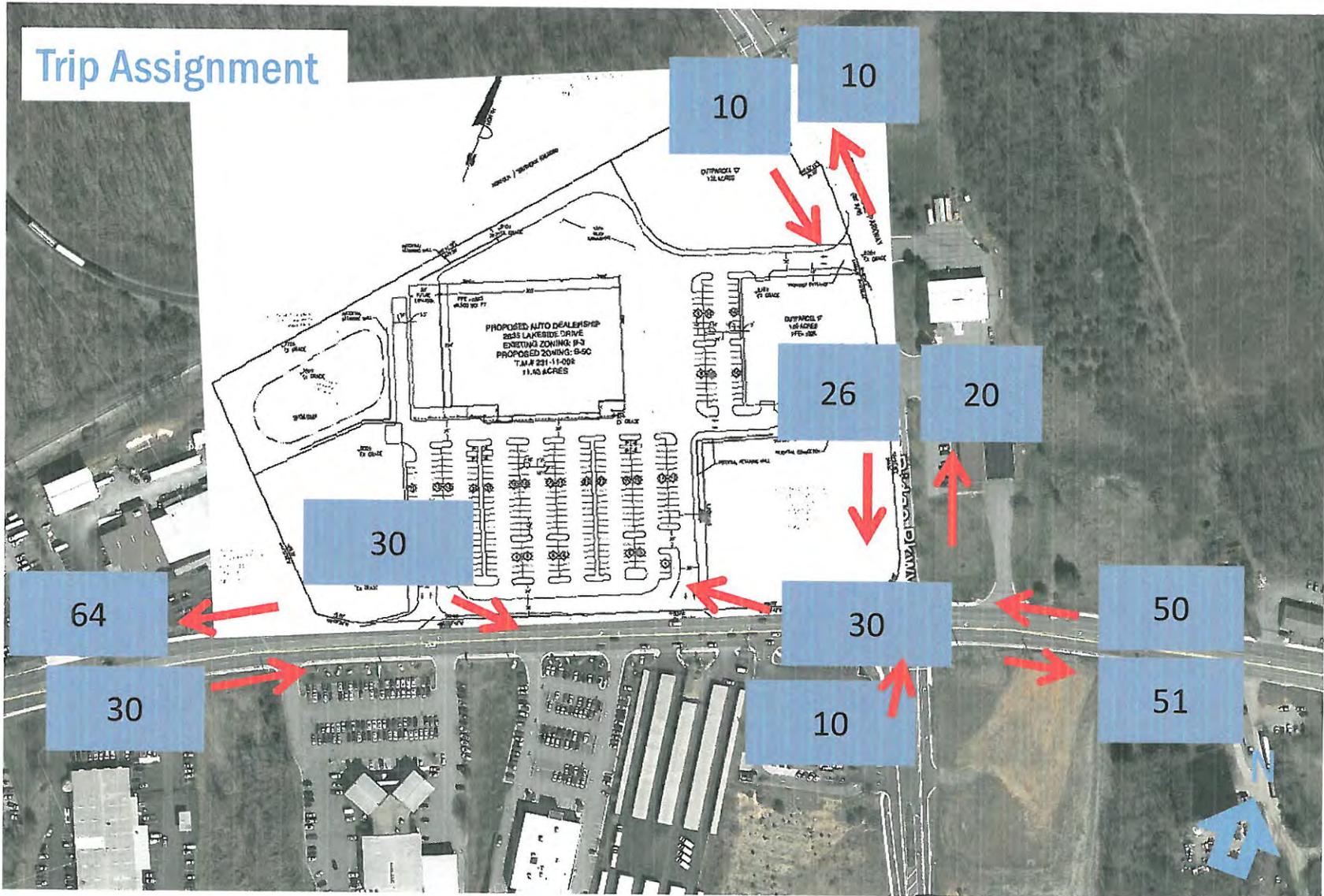


Figure 11

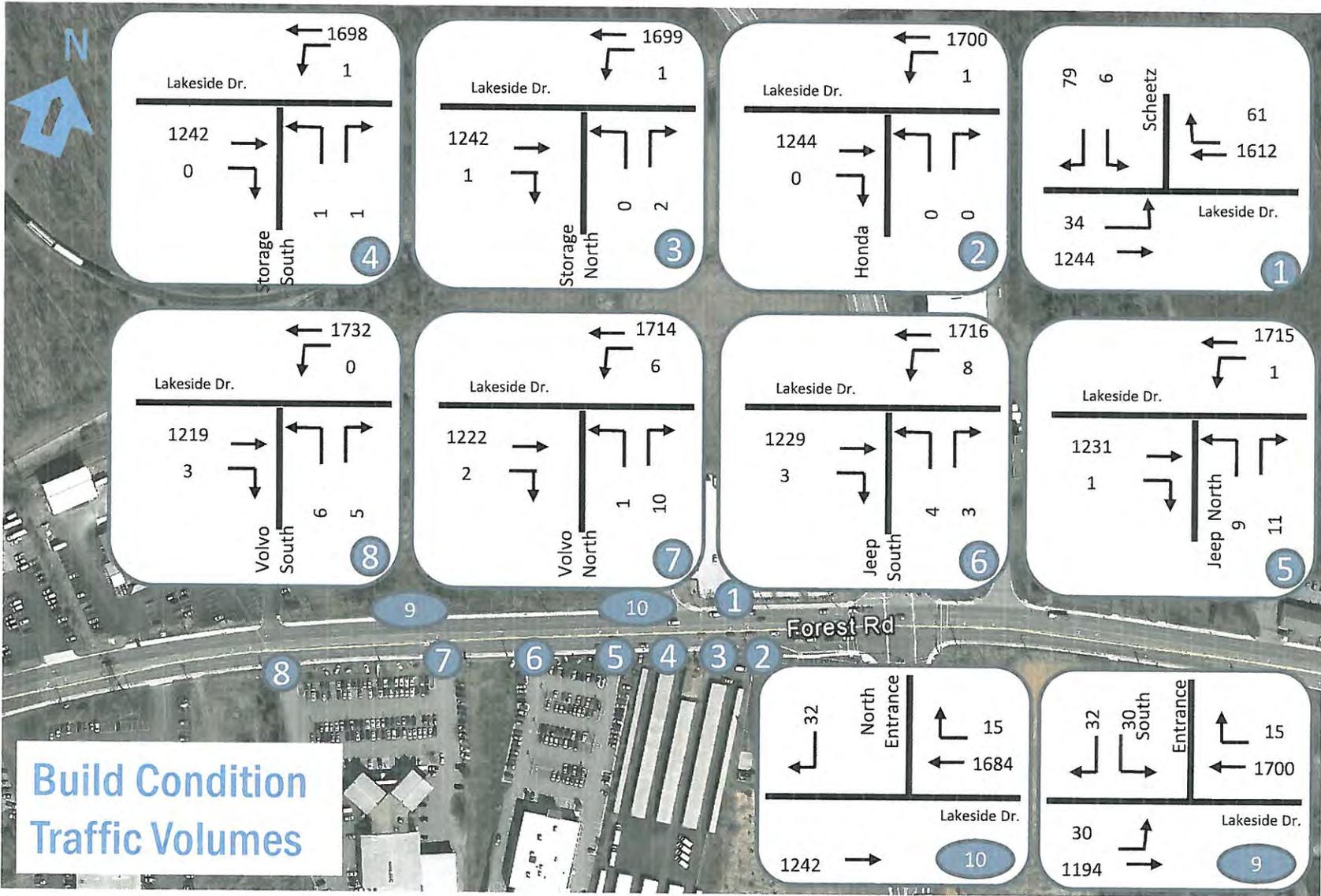
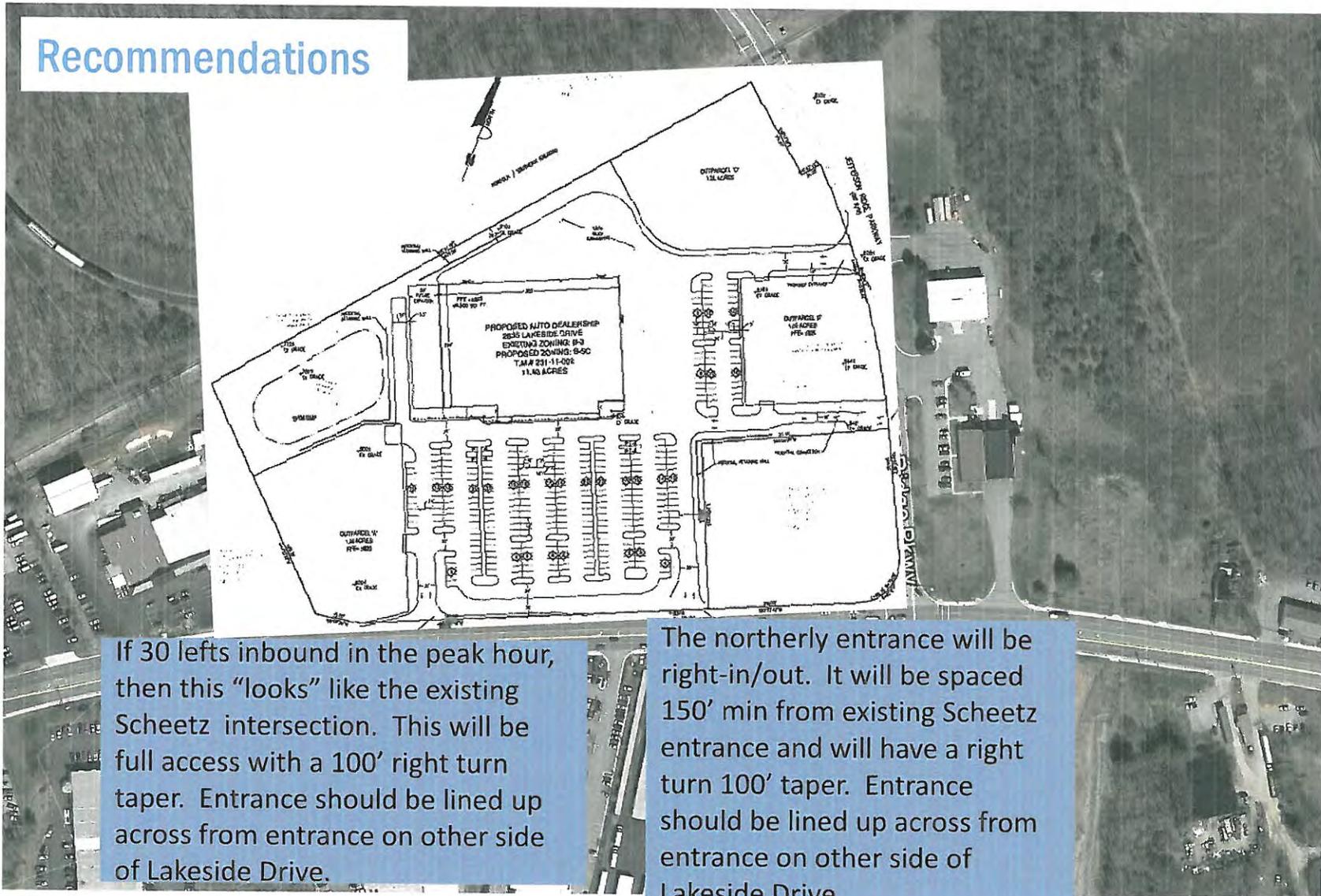


Figure 12



Recommendations

If 30 lefts inbound in the peak hour, then this “looks” like the existing Scheetz intersection. This will be full access with a 100’ right turn taper. Entrance should be lined up across from entrance on other side of Lakeside Drive.

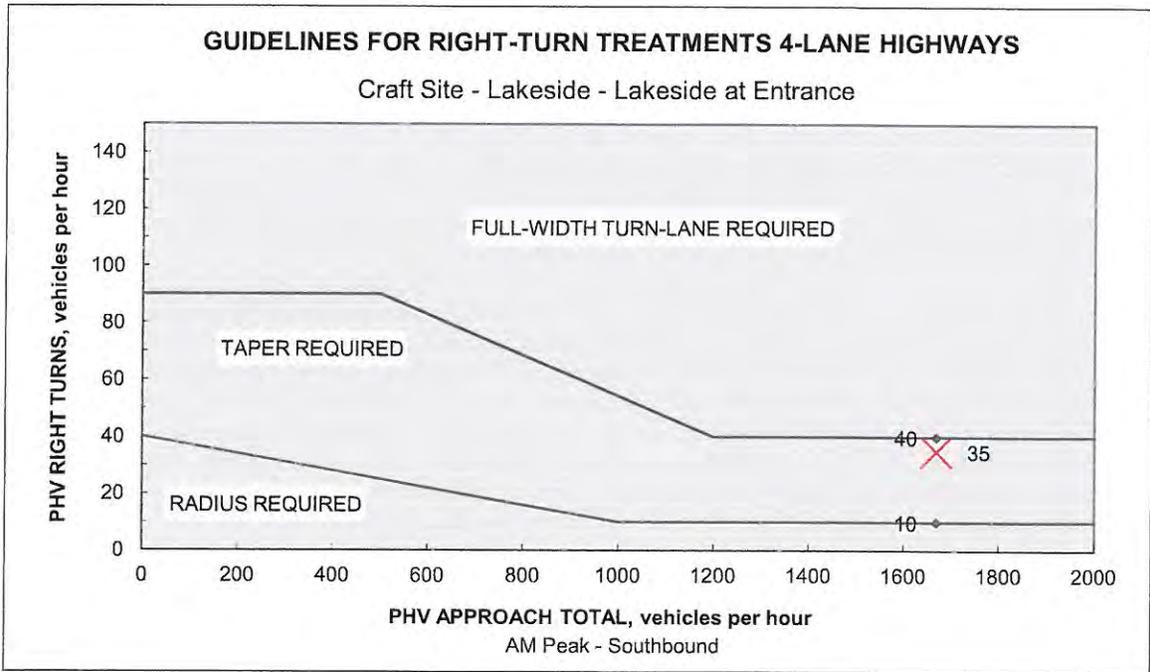
The northerly entrance will be right-in/out. It will be spaced 150’ min from existing Scheetz entrance and will have a right turn 100’ taper. Entrance should be lined up across from entrance on other side of Lakeside Drive.

DRIVEWAY COUNT - 221 SOUTH OF BREEZEWOOD TO VOLVO DEALER										2-HR	Peak Hr	2-Hr	Peak Hr
										Movmnt	Movmnt	TWLT	TWLT
Scheetz		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	SBR	4	9	14	9	15	16	16	14	97	61		
	NBL	8	5	6	11	8	12	7	7	64	34	64	34
out	EBL	1	2	2	1	1	2	0	3	12	6	12	6
	EBR	18	17	15	17	27	21	18	13	146	79		
Total										319		76	40
Craft Honda		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	0	0	0	0	0	0	0	0	0	0		
	SBL	1	0	0	0	1	0	0	0	2	1	2	1
out	WBL	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	0	0	0	0	0	0	0	0	0		
Total										2		2	1
Storage (north)		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	0	0	1	0	0	0	0	0	1	1		
	SBL	1	0	0	0	0	0	0	0	1	1	1	1
out	WBL	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	0	1	0	1	0	0	0	0	2	2		
Total										4		1	1
Storage (south)		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	0	0	0	1	0	0	0	0	1	1		
	SBL	0	0	0	0	1	0	0	0	1	1	1	1
out	WBL	0	0	0	0	0	1	0	0	1	1	1	1
	WBR	0	0	1	1	0	0	0	0	2	0		
Total										5		2	2
Jeep (north)		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	0	0	1	0	0	0	0	0	1	1		
	SBL	1	0	0	0	1	0	0	0	2	1	2	1
out	WBL	0	5	3	1	0	1	0	0	10	9	10	9
	WBR	1	1	1	1	8	1	3	0	16	11		
Total										29		12	10
Jeep (south)		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	1	0	1	1	1	0	1	0	5	3		
	SBL	3	2	2	1	3	1	2	0	14	8	14	8
out	WBL	3	1	0	0	0	1	0	1	6	4	6	4
	WBR	0	2	1	0	2	2	0	0	7	3		
Total										32		20	12
Volvo (north)		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	0	1	1	0	1	1	0	0	4	2		
	SBL	3	0	0	0	3	2	0	1	9	6	9	3
out	WBL	1	1	2	1	0	0	0	1	6	1	6	5
	WBR	1	0	2	3	3	3	3	1	16	10		
Total										35		15	8
Volvo (south)		4-4:15	4:15-4:30	4:30-4:45	4:45-5	5-5:15	5:15-5:30	5:30-5:45	5:45-6	Total			
in	NBR	1	1	2	0	1	0	1	0	6	3		
	SBL	0	0	0	0	0	0	0	0	0	0	0	0
out	WBL	0	0	0	2	3	1	0	0	6	6	6	6
	WBR	2	1	3	0	2	0	0	0	8	5		
Total										20		6	6

GUIDELINES FOR RIGHT-TURN TREATMENTS ON 4-LANE HIGHWAYS

Project:	Craft Site - Lakeside		Analysis Date:	2015
Intersection:	Lakeside at Entrance		Data Date:	2015
Approach Direction:	Southbound		Projection Year:	2015
Peak Hour:	AM Peak			
PHV Right Turns:	35	vph		
PHV Approach Total:	1,669	vph		

CONCLUSION: **RIGHT-TURN TAPER REQUIRED**



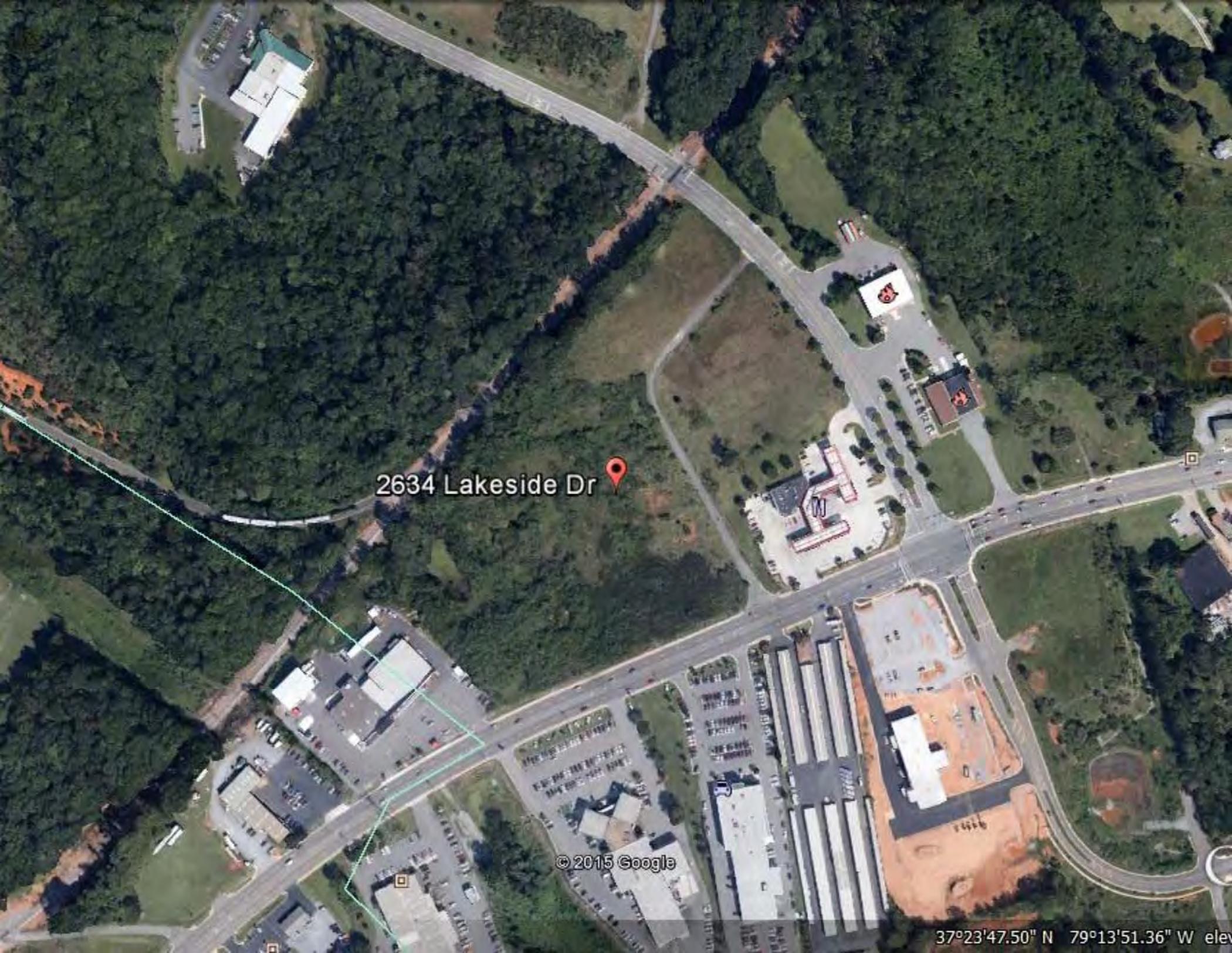
Source: VDOT Minimum Standards of Entrances to State Highways - Figure 6

HCM Unsignalized Intersection Capacity Analysis

2: Craft Site & Lakeside

5/1/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	0	32	5	0	5	30	1250	5	5	1700	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	35	5	0	5	33	1359	5	5	1848	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2611	3291	927	2396	3291	682	1853			1364		
vC1, stage 1 conf vol	1861	1861		1427	1427							
vC2, stage 2 conf vol	750	1429		970	1864							
vCu, unblocked vol	2611	3291	927	2396	3291	682	1853			1364		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	100	87	95	100	99	90			99		
cM capacity (veh/h)	71	94	270	104	75	392	323			500		
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3			
Volume Total	33	35	11	33	906	458	5	1232	621			
Volume Left	33	0	5	33	0	0	5	0	0			
Volume Right	0	35	5	0	0	5	0	0	5			
cSH	71	270	164	323	1700	1700	500	1700	1700			
Volume to Capacity	0.46	0.13	0.07	0.10	0.53	0.27	0.01	0.72	0.37			
Queue Length 95th (ft)	46	11	5	8	0	0	1	0	0			
Control Delay (s)	93.4	20.3	28.4	17.4	0.0	0.0	12.3	0.0	0.0			
Lane LOS	F	C	D	C			B					
Approach Delay (s)	55.7		28.4	0.4			0.0					
Approach LOS	F		D									
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			63.8%		ICU Level of Service					B		
Analysis Period (min)			15									



2634 Lakeside Dr

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37°23'47.50" N 79°13'51.36" W elev