



WELLS + ASSOCIATES

MEMORANDUM

TO: Louis M. Mosurak, AICP
Loudoun County Office of Transportation Services

CC: Roy Barnett
Van Metre Companies

Jeff Nein
Cooley Godward LLP

FROM: Michael J. Workosky, PTP, TOPS
James W. Watson, PTP

DATE: June 16, 2009

SUBJECT: Stone Ridge Commercial
Revised Traffic Impact Study;
Loudoun County, Virginia

INTRODUCTION

This memorandum presents a revised traffic impact study for Stone Ridge Commercial. It serves as an update to the Stone Ridge Commercial Traffic Impact Study Update, prepared by Wells + Associates, Inc., dated January 26, 2009. The subject land parcels are contained within the existing Stone Ridge community, which is located south of U.S. Route 50 (John Mosby Highway) and west of Route 659 (Gum Spring Road), as shown on Figure 1.

Stone Ridge Community Development, LLC, proposes to rezone and/or modify land parcels within the site that would result in a net nominal increase of 133 S.F. of commercial space. This would be achieved by increasing general office space by 108,310 S.F. and reducing light industrial space by 108,176 S.F. The total number of approved residential units (3,265 D.U.) would remain as currently approved. A summary of the proposed land use changes is provided in Table 1.

The January 2009 study was the subject of referral comments provided by both the Loudoun County Office of Transportation Services (OTS) dated April 17, 2009 and the Virginia Department of Transportation (VDOT) dated April 9, 2009. Copies of these comments are contained in Appendix A.

A point-by-point response to these comments is provided under a separate cover by Cooley Godward Kronish, and should be reviewed for more detailed information. They are reflected in this revised study.

Development Program and Access Changes

The January 2009 traffic study indicated that the proposed development program would result in an increase of 71 AM peak hour trips, 38 PM peak hour trips, and 331 daily (24-hour) trips with an overall increase of 2,424 S.F. The revised development program is estimated to result in an increase of 62 AM peak hour trips, 35 PM peak hour trips, and 275 daily (24-hour) trips with an increase of 133 S.F. The updated program is generally consistent with the previously submitted report. A significant change in development program eliminates Land Bay 9 that proposed access via U.S. Route 50.

Background Information

Access to the property would generally remain as currently provided by the existing and planned road system currently serving the Stone Ridge Community. Southpoint Drive (formerly Canary Grass Court) is proposed to be extended from Millstream Drive to Gum Spring Road (VA Route 659) south of U.S. Route 50 and would connect to the future West Spine Road. A concept plan for the project is shown in Figures 2A and 2B.

Consistent with the previously submitted traffic report, the site was assumed to be constructed in a single phase and complete by 2015. As specified in the traffic analysis scoping meeting, the most recent 2030 modeled traffic volumes from the current Loudoun County model have been included.

This revised traffic report includes the following items:

1. Collection of updated traffic counts at nine adjacent intersections.
2. Estimation of the number of weekday AM peak hour, and PM peak hour trips that would be generated by both the approved and proposed Stone Ridge development programs based on standard Institute of Transportation Engineers (ITE) trip generation rates.
3. Updated estimates of background development based on comments provided by VDOT.
4. Preparation of future traffic volumes for 2015 for both the currently approved and proposed development programs for Stone Ridge based on the updated existing traffic counts, traffic generated by other approved but incomplete development projects, and background traffic growth.
5. Calculation of total future levels of service at key intersections based on total future traffic forecasts, proposed traffic controls, and proposed intersection geometrics.
6. A review of the 2030 model traffic volumes provided by Loudoun County.
7. A comparison of the existing and proposed proffers.

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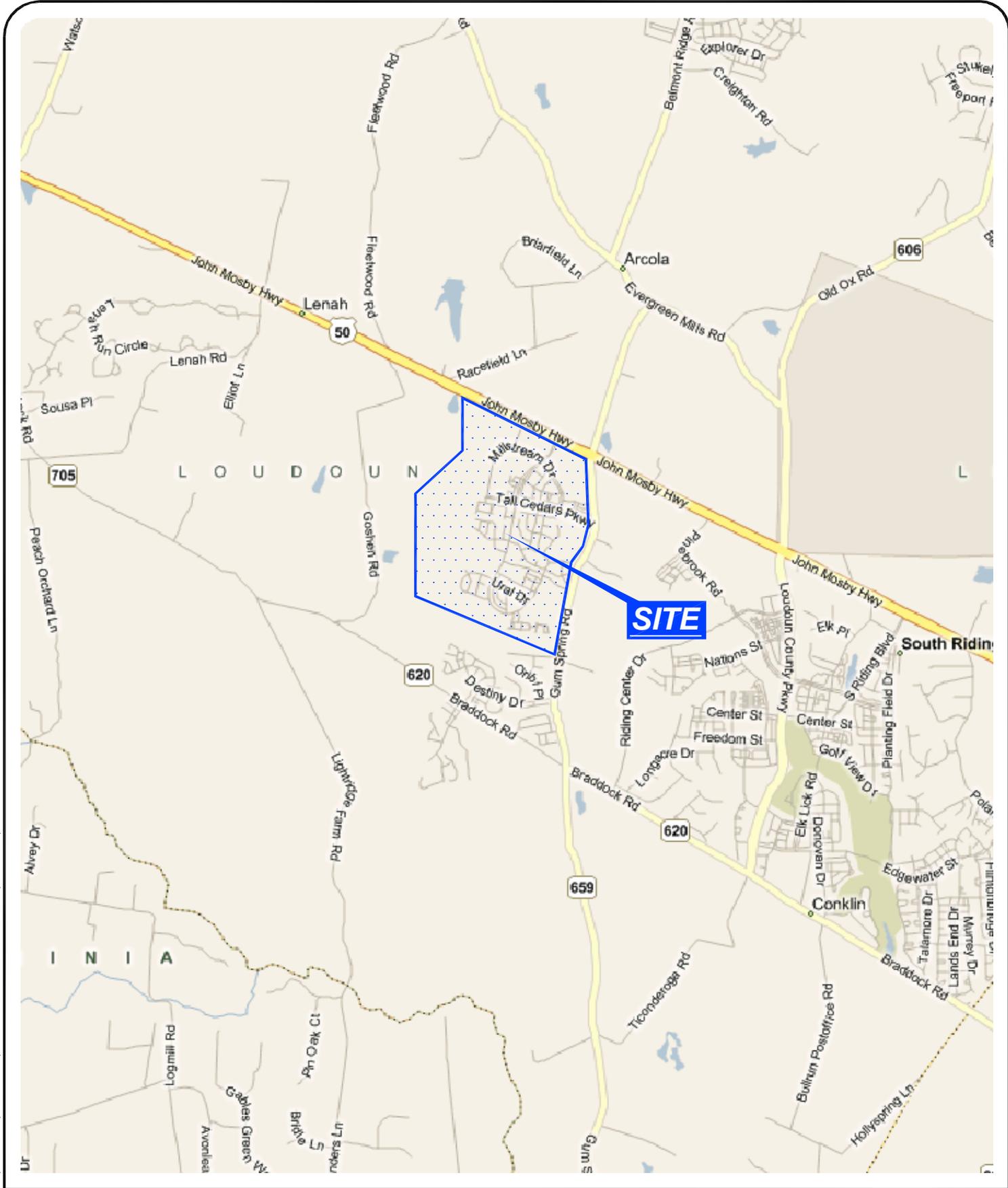


Figure 1
Site Location



JCP

Stone Ridge Commercial
Loudoun County, Virginia



<p>LEGEND</p> <ul style="list-style-type: none"> 1.5' - 3' CONC. CURB 3' - 6' CONC. CURB 6' - 12' CONC. CURB 12' - 18' CONC. CURB 18' - 24' CONC. CURB 24' - 30' CONC. CURB 30' - 36' CONC. CURB 36' - 42' CONC. CURB 42' - 48' CONC. CURB 48' - 54' CONC. CURB 54' - 60' CONC. CURB 60' - 66' CONC. CURB 66' - 72' CONC. CURB 72' - 78' CONC. CURB 78' - 84' CONC. CURB 84' - 90' CONC. CURB 90' - 96' CONC. CURB 96' - 102' CONC. CURB 102' - 108' CONC. CURB 108' - 114' CONC. CURB 114' - 120' CONC. CURB 120' - 126' CONC. CURB 126' - 132' CONC. CURB 132' - 138' CONC. CURB 138' - 144' CONC. CURB 144' - 150' CONC. CURB 150' - 156' CONC. CURB 156' - 162' CONC. CURB 162' - 168' CONC. CURB 168' - 174' CONC. CURB 174' - 180' CONC. CURB 180' - 186' CONC. CURB 186' - 192' CONC. CURB 192' - 198' CONC. CURB 198' - 204' CONC. CURB 204' - 210' CONC. CURB 210' - 216' CONC. CURB 216' - 222' CONC. CURB 222' - 228' CONC. CURB 228' - 234' CONC. CURB 234' - 240' CONC. CURB 240' - 246' CONC. CURB 246' - 252' CONC. 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FRONT SETBACK: 10 FT.</p> <p>MIN. SIDE SETBACK: 5 FT.</p> <p>MIN. REAR SETBACK: 5 FT.</p>	<p>ACTIVE RECREATION SPACE: LANDREY 6</p> <p>(R-2) 20' WIDE 2' HIGH, PER 2.0. SECTION 7-422(E)</p> <p>TOTAL UNITS = 93</p> <p>UNITS PER LOT = 1</p> <p>UNITS PER ACRE = 1</p> <p>LANDREY 6: 10 MARKET RATE</p>
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Table 1
 Stone Ridge Commercial
 Land Use Summary (1)(2)(3)

Land Use	Existing		Proposed		Total	
	Totals	Units	Totals	Units	Change	Units
Single-Family Detached	853	D.U.	853	D.U.	-	D.U.
Townhouse/Condominium	1,741	D.U.	1,741	D.U.	-	D.U.
Multi-Family	671	D.U.	671	D.U.	-	D.U.
Total Residential	3,265	D.U.	3,265	D.U.	-	D.U.
Retail	316,378	S.F.	316,378	S.F.	-	S.F.
Office (PD-OP/CLI)	282,563	S.F.	390,872	S.F.	108,309	S.F.
Light Industrial (PD-IP)	570,250	S.F.	462,074	S.F.	(108,176)	S.F.
Total Commercial/Employment	1,169,191	S.F.	1,169,324	S.F.	133	S.F.

Notes: (1) Total Change based on densites provided by Urban Engineering, dated June 4, 2009.

(2) Proposed and Existing Totals based on the overall Approved Stone Ridge Development

(3) CLI was assumed as office for purpose of comparison and trip generation analysis.

Existing Traffic Counts and Levels of Service

AM and PM peak hour traffic turning movement counts were conducted by Wells + Associates in 2008 from 6:00 to 9:00 AM and from 4:00 PM to 7:00 PM at the following intersections:

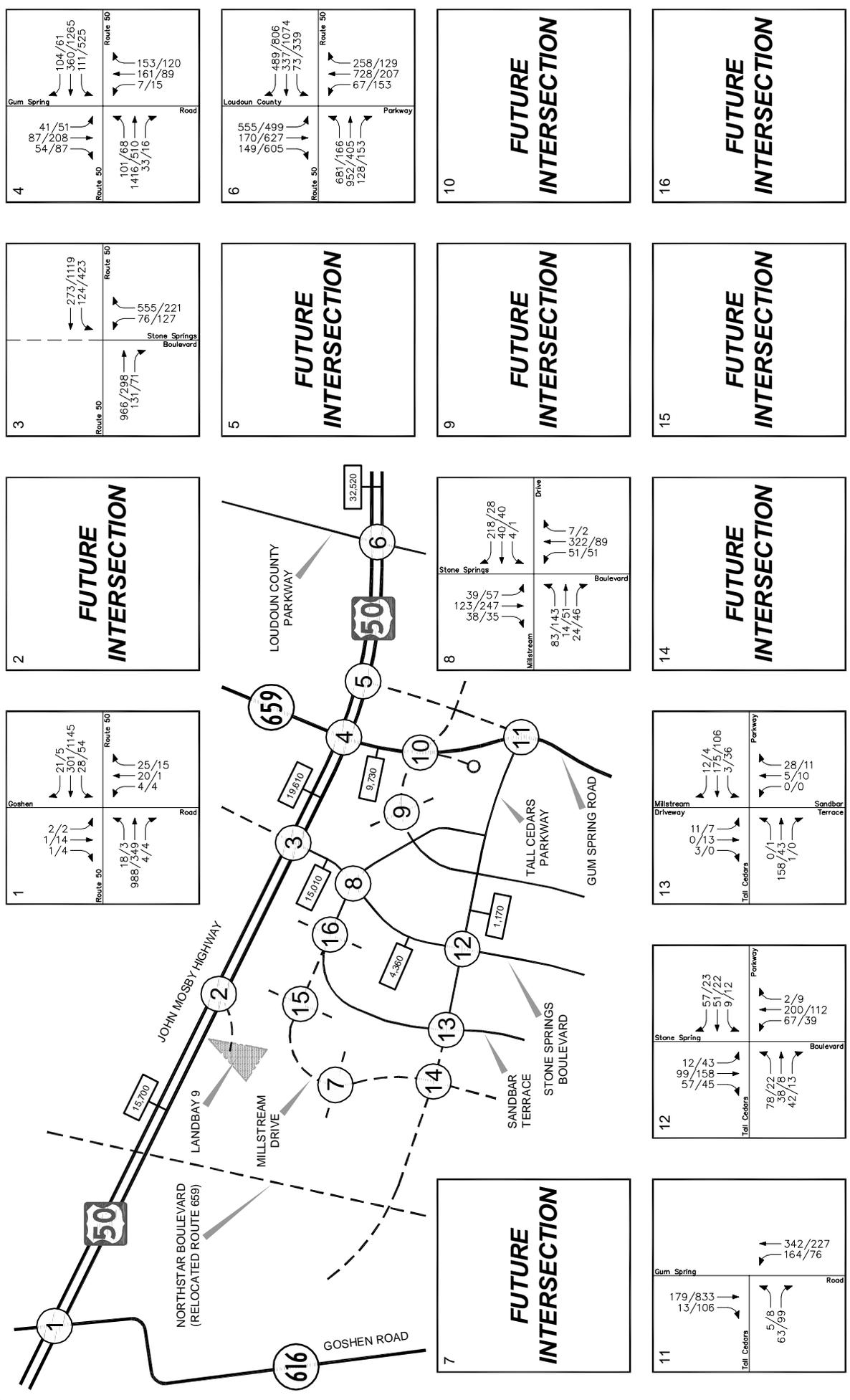
1. U.S. Route 50/Goshen Road.
2. U.S. Route 50/Stone Springs Boulevard.
3. U.S. Route 50/Gum Spring Road (VA Route 659).
4. U.S. Route 50/VA Route 606.
5. Millstream Drive (west)/Tall Cedars Parkway.
6. Stone Springs Boulevard/Tall Cedars Parkway.
7. Gum Spring Road/Tall Cedars Parkway.
8. Stone Springs Boulevard/Millstream Drive.
9. Tall Cedars Parkway/Sandbar Terrace.

The peak hour and Average Daily Traffic volumes are summarized on Figure 3 and presented in Appendix B. The existing lane use and traffic control in the site vicinity is shown on Figure 4.

Existing Levels of Service

Existing intersection levels of service for 2008 were calculated based on: (1) the existing traffic volumes shown on Figure 3, (2) the existing lane use and traffic control shown on Figure 4 and (3) the Highway Capacity Manual methodology. It is noted that separate turn lanes exist at some locations but are not currently in use. The results are summarized in Table 2 and presented in Appendix C, and indicate the following:

1. The side-street turning movements from southbound Goshen Road (Route 616) onto Route 50 currently operate at LOS "E" or "F" during both the AM and PM peak hours.
2. The Route 50/Stone Springs Boulevard signalized intersection operates at LOS "E" during the AM peak hour and LOS "C" during the PM peak hour.
3. The U.S. Route 50/Route 659 signalized intersection currently operate at LOS "E" during the AM peak hour and LOS "D" during the PM peak hour.
4. The U.S. Route 50/Route 606 (Loudoun County Parkway) intersection currently operates at LOS "F" during the AM peak hour and LOS "E" during the PM peak hour.
5. All of the turning movements at the stop controlled Stone Springs Boulevard/Millstream Drive intersection currently operate at acceptable levels of service during both the AM and PM peak hours.
6. The remaining unsignalized intersections on Tall Cedars Parkway at Route 659, Stone Springs Boulevard, and Millstream Drive currently operate at acceptable levels of service.



▲ North

AM PEAK HOUR

000/000

ADT Average Daily Trips

Figure 3 Existing Peak Hour Traffic Volumes

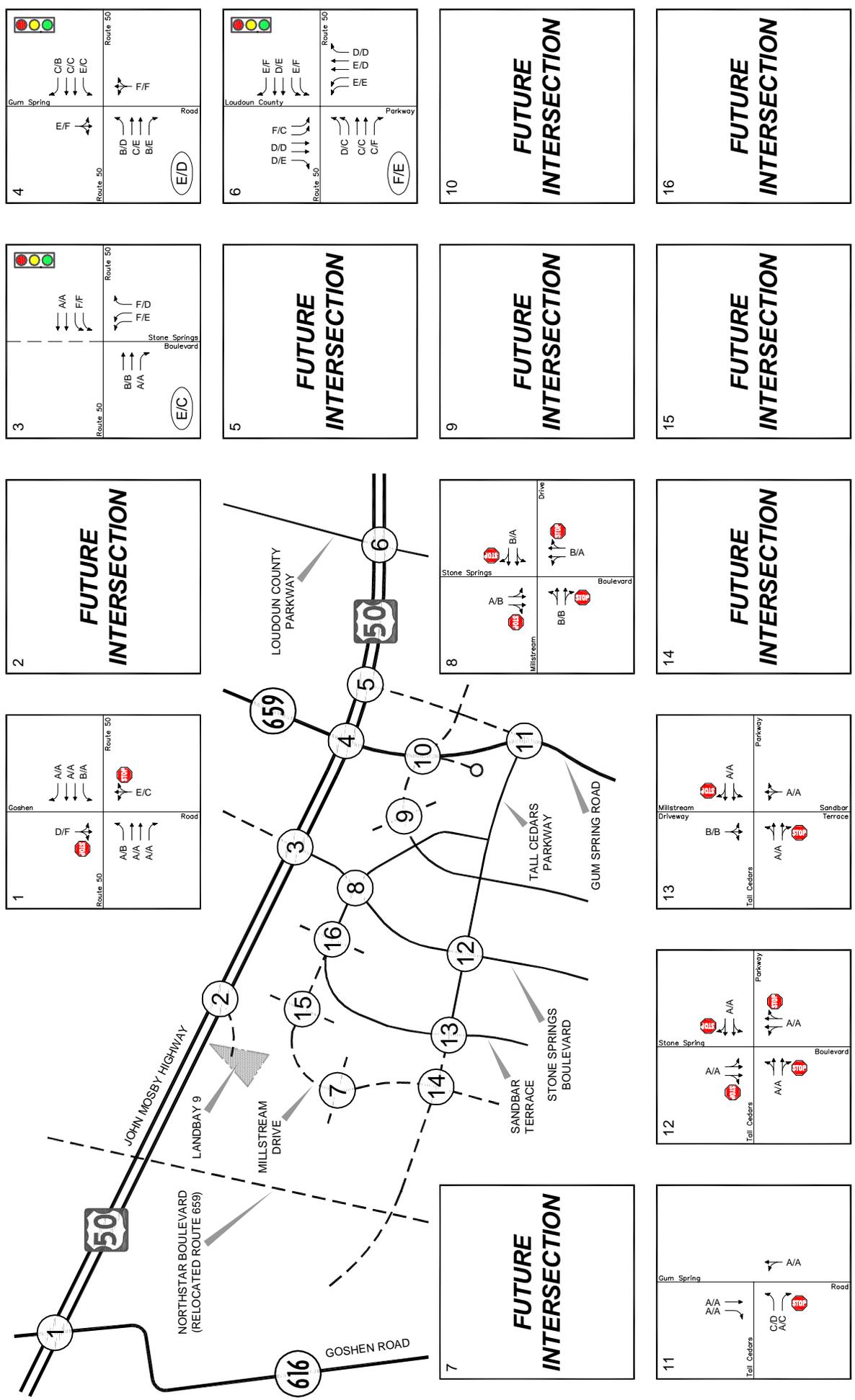


Figure 4
Existing Lane Use and Traffic Control and
Peak Hour Levels of Service

- xx Levels of Service
- xx Overall Levels of Service
- Represents One Travel Lane
- Signalized Intersection
- Stop Sign
- North

Table 2-1
 Stone Ridge Commercial
 Intersection Level of Service Summary (1) (2) (3)

Intersection	Intersection Control	Critical Movement	2008		2015			
			Existing		Currently Approved Program		Proposed Program	
			AM	PM	AM	PM	AM	PM
(1) U.S. Route 50/ Goshen Road	Stop Sign	EBL WBL NBLTR SBLTR	A [8.1] B [11.0] E [35.2] D [27.8]	B [11.7] A [8.3] C [17.6] F [58.9]	N/A		N/A	
	Signal Background Improvement: Install Signal, Add NBR, Optimize Timings (by others)	EBL EBT EBR WBL WBT WBR NBLT NBR SBLTR Overall	N/A	N/A	B (11.3) C (24.6) B (12.5) C (20.9) B (11.4) A (9.3) D (48.6) C (29.6) D (35.9) C (23.5)	B (16.3) B (14.3) B (11.1) A (7.9) B (18.9) A (6.9) D (41.8) C (26.7) D (38.5) B (18.7)	B (11.3) C (24.7) B (12.4) C (21.2) B (11.4) A (9.3) D (49.0) C (29.9) D (36.2) C (23.6)	B (16.3) B (14.2) B (11.1) A (7.8) B (18.8) A (6.9) D (42.2) C (26.9) D (38.7) B (18.7)
(2) U.S. Route 50/ Racefield Ln/ INOVA Driveway	Signal	EBL EBT WBT WBR SBL SBR Overall	N/A	N/A	A (4.5) A (8.3) B (11.1) B (10.2) C (26.7) B (18.7) A (10.0)	B (15.8) A (8.2) B (19.6) B (11.2) D (53.5) C (32.1) B (19.6)	A (4.1) A (7.4) A (9.9) A (9.1) C (32.1) C (23.3) A (9.4)	B (15.8) A (8.2) B (19.7) B (11.2) D (53.6) C (32.1) B (19.6)
	Signal Background Improvement: Add SB Leg, Optimize Timings, Add NB Lanes, Add Through Lanes On Rt. 50.	EBT EBR WBL WBT NBL NBR Overall	B (11.7) A (8.5) F (93.3) A (0.2) F (80.5) F (210.1) E (69.1)	B (10.1) A (9.4) F (92.7) A (0.5) E (64.7) D (42.1) C (27.0)	N/A	N/A	C (21.5) E (75.3)	E (75.3)
(3) U.S. Route 50/ Stone Spings Blvd	Signal	EBT EBR WBL WBT NBL NBR Overall	B (11.7) A (8.5) F (93.3) A (0.2) F (80.5) F (210.1) E (69.1)	B (10.1) A (9.4) F (92.7) A (0.5) E (64.7) D (42.1) C (27.0)	N/A	N/A	C (21.5) E (75.3)	E (75.3)
	Signal Background Improvement: Add SB Leg, Optimize Timings, Add NB Lanes, Add Through Lanes On Rt. 50.	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Overall	N/A	N/A	C (23.2) D (35.1) C (27.5) E (63.9) C (22.4) C (20.7) D (41.5) D (53.3) E (59.6) E (73.2) E (65.0) D (51.7) D (43.0)	E (74.9) D (45.5) D (39.4) E (58.9) D (42.9) C (26.9) E (72.1) E (57.4) D (47.3) E (71.7) F (85.5) D (51.9) D (52.6)	C (21.5) E (75.3) C (33.0) D (44.8) C (26.2) E (60.3) C (23.1) D (44.5) C (21.2) D (41.9) E (56.0) E (58.9) D (45.8) E (73.2) E (66.6) D (51.3) D (41.8)	D (44.8) D (38.8) E (60.3) D (44.5) C (27.6) E (67.4) E (56.0) D (45.8) E (73.2) F (84.7) D (51.8) D (52.8)
(4) U.S. Route 50/ Gum Spring Rd (VA 659)/	Signal	EBL EBT EBR WBL WBT WBR NBLTR SBLTR Overall	B (12.0) C (29.8) B (13.3) E (57.0) C (22.6) C (20.8) F (247.4) E (78.2) E (58.7)	D (42.8) E (74.8) E (71.7) C (24.5) C (31.4) B (11.2) F (130.1) F (108.5) D (54.0)	N/A	N/A	N/A	N/A
	Signal Background Improvement: Remove Signal, Remove NB Leg, RIRO Only (by others)	SBR	N/A	N/A	B (10.3)	A [9.7]	B [10.9]	A [9.7]
(5) U.S. Route 50/ West Spine Road	Signal	EBT EBR WBL WBT NBL NBR Overall	N/A	N/A	D (51.3) A (8.9) D (54.5) A (8.4) D (43.7) D (40.4) D (38.3)	D (54.6) C (22.5) D (53.0) A (8.6) D (48.2) C (23.1) C (32.3)	D (47.1) B (10.4) D (53.7) A (6.7) D (47.2) D (47.1) D (38.0)	D (54.9) C (23.2) D (53.7) A (9.0) D (47.2) C (27.9) C (33.0)
	Signal Background Improvement: Add Through Lane on Rt. 50, Optimize Timings (by others)	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Overall	D (54.4) C (32.8) C (22.9) E (65.8) D (46.9) F (98.6) E (65.8) E (62.3) D (45.6) F (528.2) D (41.9) D (40.8) F (110.7)	C (30.0) C (25.8) F (103.0) F (80.7) E (58.7) F (87.3) E (64.1) D (41.7) D (40.0) C (30.9) D (47.6) E (74.8) E (59.3)	F (171.8) D (37.1) C (26.3) F (85.9) E (68.1) F (295.0) F (86.7) F (266.6) F (82.3) F (353.2) D (46.6) D (50.5) F (150.0)	F (335.0) D (41.0) C (31.6) E (74.5) E (65.1) F (277.7) E (65.9) E (70.7) D (54.2) E (74.7) F (174.3) F (924.5) F (235.3)	F (171.8) D (37.2) C (26.3) F (85.9) E (68.8) F (277.7) F (86.7) F (266.6) D (54.2) E (74.7) F (174.3) D (50.5) F (149.9)	F (337.6) D (41.2) C (31.7) E (74.5) E (65.1) F (277.7) E (65.9) E (70.7) D (54.2) E (74.7) F (174.3) F (924.5) F (235.3)
(6) U.S. Route 50/ Loudoun County Pkwy (Old Ox Road)	Signal	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Overall	D (54.4) C (32.8) C (22.9) E (65.8) D (46.9) F (98.6) E (65.8) E (62.3) D (45.6) F (528.2) D (41.9) D (40.8) F (110.7)	C (30.0) C (25.8) F (103.0) F (80.7) E (58.7) F (87.3) E (64.1) D (41.7) D (40.0) C (30.9) D (47.6) E (74.8) E (59.3)	F (171.8) D (37.1) C (26.3) F (85.9) E (68.1) F (295.0) F (86.7) F (266.6) F (82.3) F (353.2) D (46.6) D (50.5) F (150.0)	F (335.0) D (41.0) C (31.6) E (74.5) E (65.1) F (277.7) E (65.9) E (70.7) D (54.2) E (74.7) F (174.3) F (924.5) F (235.3)	F (171.8) D (37.2) C (26.3) F (85.9) E (68.8) F (277.7) F (86.7) F (266.6) D (54.2) E (74.7) F (174.3) D (50.5) F (149.9)	F (337.6) D (41.2) C (31.7) E (74.5) E (65.1) F (277.7) E (65.9) E (70.7) D (54.2) E (74.7) F (174.3) F (924.5) F (235.3)
	Signal Background Improvement: Add Through Lane on Rt. 50, Optimize Timings (by others)	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Overall	D (54.4) C (32.8) C (22.9) E (65.8) D (46.9) F (98.6) E (65.8) E (62.3) D (45.6) F (528.2) D (41.9) D (40.8) F (110.7)	C (30.0) C (25.8) F (103.0) F (80.7) E (58.7) F (87.3) E (64.1) D (41.7) D (40.0) C (30.9) D (47.6) E (74.8) E (59.3)	F (171.8) D (37.1) C (26.3) F (85.9) E (68.1) F (295.0) F (86.7) F (266.6) F (82.3) F (353.2) D (46.6) D (50.5) F (150.0)	F (335.0) D (41.0) C (31.6) E (74.5) E (65.1) F (277.7) E (65.9) E (70.7) D (54.2) E (74.7) F (174.3) F (924.5) F (235.3)	F (171.8) D (37.2) C (26.3) F (85.9) E (68.8) F (277.7) F (86.7) F (266.6) D (54.2) E (74.7) F (174.3) D (50.5) F (149.9)	F (337.6) D (41.2) C (31.7) E (74.5) E (65.1) F (277.7) E (65.9) E (70.7) D (54.2) E (74.7) F (174.3) F (924.5) F (235.3)
(7) Millstream Dr/ Land Bay 7 Driveway	Stop Sign	EBLR WBLR NBLT SBLT	N/A	N/A	B [12.6] N/A A [7.5] N/A	F [65.1] N/A A [5.8] N/A	N/A B [13.5] N/A A [6.9]	N/A C [20.0] N/A A [6.6]
	Signal	EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR Overall	N/A	N/A	N/A	N/A	N/A	N/A

Notes: (1) Analyses based on Synchro 7.
 (2) Numbers in parentheses indicate average delay in seconds per vehicle for signalized intersections.
 (3) Numbers in brackets indicate average delay in seconds per vehicle for stop sign controlled intersections.

Table 2-2
 Stone Ridge Commercial
 Intersection Level of Service Summary (1) (2) (3)

Intersection	Intersection Control	Critical Movement	2008		2015			
			Existing		Currently Approved Program		Proposed Program	
			AM	PM	AM	PM	AM	PM
(8) Stone Springs Blvd/ Millstream Drive Background Improvement: Site Improvement: Install Signal	Stop Sign 4-way	EB	B [10.1]	B [10.5]	C [19.6]	F [175.7]	C [20.6]	F [141.0]
		WB	B [11.6]	A [8.3]	F [57.4]	F [98.2]	F [55.9]	F [61.7]
		NB	B [11.5]	A [9.1]	E [37.8]	E [37.1]	E [37.4]	C [22.8]
		SB	A [9.7]	B [10.0]	D [31.6]	F [80.7]	D [33.5]	F [59.6]
	Signal	EBLTR			C (23.5)	D (38.5)	C (24.3)	C (30.0)
		WBLTR			C (21.8)	B (15.8)	C (21.9)	B (14.8)
		NBL			B (13.1)	C (34.1)	B (13.8)	C (26.6)
		NBT			C (20.2)	C (31.2)	C (21.0)	C (30.0)
		NBR	N/A		B (15.8)	C (28.5)	B (16.5)	C (27.4)
		SBL			B (10.6)	C (24.7)	B (11.1)	C (20.7)
SBT			B (12.0)	D (42.7)	B (12.5)	C (34.2)		
SBR			<u>B (11.9)</u>	<u>C (29.4)</u>	<u>B (12.2)</u>	<u>C (25.8)</u>		
Overall			B (17.4)	C (32.5)	B (18.1)	C (27.1)		
(9) Southpoint Dr/ Site Office/Residential	Stop Sign	EBLTR			B [12.2]	B [11.2]	A [6.6]	A [4.3]
		WBLTR			N/A	N/A	A [0.2]	A [1.8]
		NBLTR	N/A		A [6.8]	A [6.6]	C [20.0]	C [21.8]
		SBTR			A [0.0]	A [0.0]	B [10.2]	B [12.4]
(10) Gum Spring Rd/ Southpoint Dr.	Stop Sign	EBT					A [0.0]	A [0.0]
		WBT	N/A		N/A		A [0.0]	A [0.0]
(11) Gum Spring Rd/West Spine Road/ Tall Cedars Pkwy Background Improvement: Install Signal Realign with West Spine Road Add NB/SB Through Lane	Stop Sign	EBL	C [19.6]	D [31.3]				
		EBR	A [9.7]	C [21.6]				
		NBTL	A [3.6]	A [4.1]				
	Signal	EBL			C (25.1)	D (40.5)	C (25.9)	D (38.1)
		EBR			A (8.1)	D (51.5)	A (8.0)	D (50.3)
		NBL			A (6.8)	D (42.4)	A (6.4)	D (43.0)
		NBT	N/A		A (5.1)	A (6.8)	A (4.8)	A (7.2)
		SBT			C (23.8)	D (35.9)	C (24.7)	D (38.1)
		SBR			<u>B (13.5)</u>	<u>A (7.3)</u>	<u>B (14.5)</u>	<u>A (7.1)</u>
		Overall			B (10.8)	C (31.1)	B (10.7)	C (32.0)
(12) Stone Springs Blvd/ Tall Cedars Pkwy Background Improvement: Open existing turn lanes on Tall Cedars.	Stop Sign 4-way	EB	A [9.0]	A [7.7]	C [15.2]	B [12.5]	B [14.6]	B [12.2]
		WB	A [8.3]	A [7.5]	C [15.8]	B [13.7]	C [15.2]	B [13.6]
		NB	A [9.5]	A [7.8]	E [47.2]	C [19.0]	E [42.2]	C [18.7]
		SB	A [8.3]	A [7.9]	C [16.9]	F [61.5]	C [16.4]	F [60.2]
(13) Tall Cedars Pkwy/ Millstream Drive/Sandbar Terrace	Stop Sign	EBL	A [0.0]	A [0.3]	A [8.5]	A [7.9]	A [8.4]	A [7.8]
		WBL	A [0.3]	A [3.1]	A [8.1]	A [7.6]	A [8.1]	A [7.8]
		NBLTR	A [9.4]	A [9.6]	C [20.7]	B [11.5]	C [19.3]	B [11.5]
		SBLTR	B [10.9]	B [10.8]	D [25.7]	C [19.4]	C [22.8]	C [15.2]
(14) Tall Cedars Pkwy/ Millstream Extended	Stop Sign	EBL					A [7.5]	A [0.0]
		WBL					A [7.4]	A [7.3]
		NBLTR	N/A		N/A		A [9.4]	A [9.7]
		SBLTR					B [10.1]	B [12.6]
(15) Millstream Extended/ Industrial Drive A	Stop Sign	EBLTR					A [1.4]	A [0.6]
		WBLTR					A [0.1]	A [1.5]
		NBLTR	N/A		N/A		A [9.5]	B [10.7]
		SBLTR					B [10.4]	B [11.4]
(16) Millstream Extended/ Industrial Drive B	Stop Sign	EBLTR					A [0.2]	A [0.1]
		WBLTR					A [0.4]	A [1.8]
		NBLTR	N/A		N/A		A [9.0]	A [9.3]
		SBLTR					B [11.1]	B [13.1]

Notes: (1) Analyses based on Synchro 7.
 (2) Numbers in parentheses indicate average delay in seconds per vehicle for signalized intersections.
 (3) Numbers in brackets indicate average delay in seconds per vehicle for stop sign controlled intersections.

Other Approved Developments

Overview. This traffic study includes traffic generated by 17 other approved development projects in the region, exclusive of the currently approved development program for the site. The following projects were considered in this traffic study and have been revised based on VDOT comments:

1. Brambleton.
2. Kirkpatrick Farms.
3. Hutchinson Farm (Arcola Center).
4. Pinebrook Village.
5. Braddock Corner.
6. Providence Glen.
7. Gum Spring Village Center.
8. South Riding Station.
9. Kirkpatrick Farms West.
10. CD Smith.
11. Glascock Field at Stone Ridge.
12. Marrwood Property.
13. Westport By-Right Property.
14. West Spine Plaza (proposed zoning).
15. Winsbury Homes.
16. Boyd School (formerly Arcola School).
17. INOVA Property.

The level of development within each of the other approved projects listed above was estimated based on the ultimate approved development program, the projected pace of development in the study area as estimated in previous studies and updated information researched by Wells + Associates. The location of these other developments is shown on Figure 5. Trip generation estimates for background developments are contained in Appendix D.

Trip Assignments

The traffic anticipated to be generated by the other developments were assigned to the study network according to distributions from previous studies, existing travel patterns and traffic counts, and local knowledge. These assignments are contained in Appendix E.

Growth Rate

Based on recent conversations with VDOT, a regional growth rate of 2.0 percent per year, compounded annually, was applied to all turning movements at the surrounding intersections for 2015 conditions.

Proposed Modifications to Regional Roads

Modifications to the regional road network were assumed as part of the Stone Ridge Commercial project development. These include:

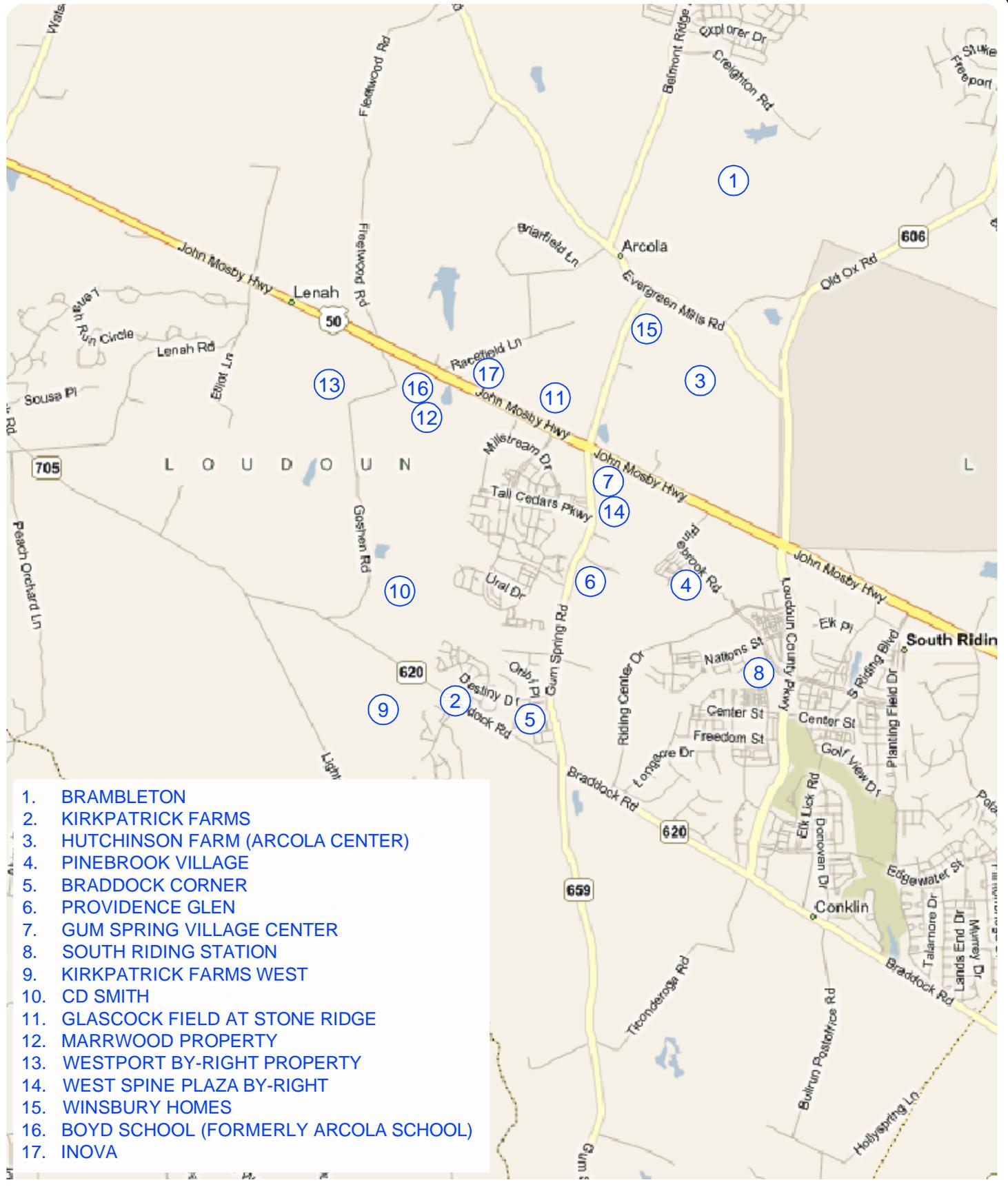
1. Extension of Southpoint Drive (formerly Canary Grass Court) from Millstream Drive to existing Gum Spring Road (VA Route 659) and the future West Spine Road (by Stone Ridge Commercial). Provide auxiliary turn lanes at the Gum Spring Road intersection if this improvement is in place prior to the full construction and opening of the West Spine Road, in accordance with VDOT and Loudoun County standards.
2. Realign Millstream Drive west of Stone Springs Boulevard to access Land Bay 7 and connect to Tall Cedars Parkway west of the residential areas.
3. Intersection improvements to include a new traffic signal and turn lanes at the West Spine Road/U.S. Route 50 intersection and Gum Spring Road/Tall Cedars Parkway through existing Stone Ridge proffers.
4. Access to existing Gum Spring Road may include an interim condition that allows for right-in/right-out only access from U.S. Route 50, pending review and approval by VDOT and Loudoun County. (This condition was not assumed in this study).

Additional modifications to the internal road network are also contemplated as discussed later in this report.

The lane use and traffic control at the study area intersections for approved and proposed conditions are shown on Figures 6 and 7.

2030 Road Network

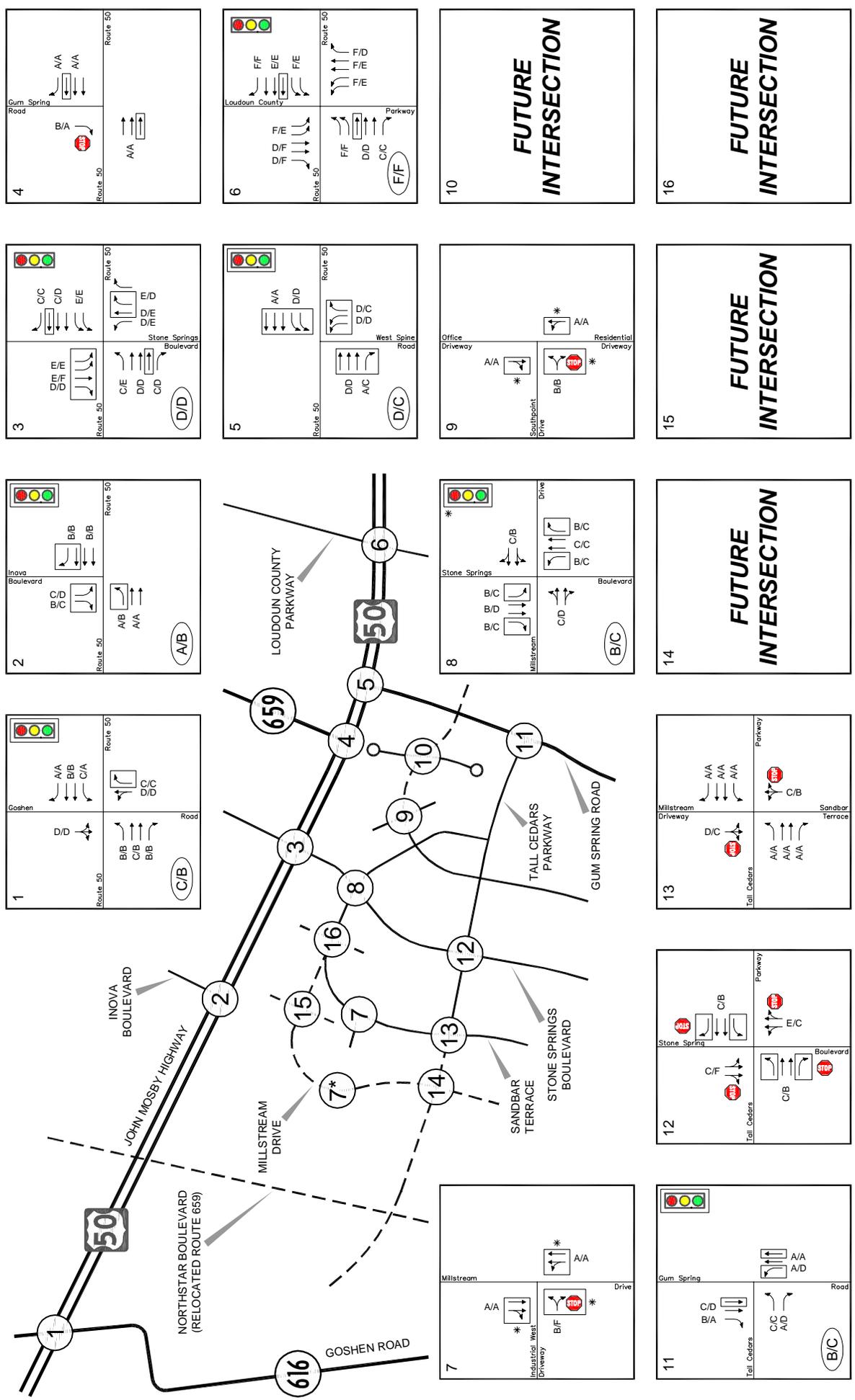
The 2030 road network associated with the Loudoun County long-range travel demand model assumes that the majority of roadways depicted in the Countywide Transportation Plan (CTP) are constructed.



1. BRAMBLETON
2. KIRKPATRICK FARMS
3. HUTCHINSON FARM (ARCOLA CENTER)
4. PINEBROOK VILLAGE
5. BRADDOCK CORNER
6. PROVIDENCE GLEN
7. GUM SPRING VILLAGE CENTER
8. SOUTH RIDING STATION
9. KIRKPATRICK FARMS WEST
10. CD SMITH
11. GLASCOCK FIELD AT STONE RIDGE
12. MARRWOOD PROPERTY
13. WESTPORT BY-RIGHT PROPERTY
14. WEST SPINE PLAZA BY-RIGHT
15. WINSBURY HOMES
16. BOYD SCHOOL (FORMERLY ARCOLA SCHOOL)
17. INOVA

Figure 5
Location of Other Developments





- xx Levels of Service
- (xx) Overall Levels of Service
- Preferred Improvement
- Site Improvement
- * - Location of Future Intersection

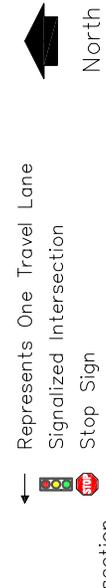
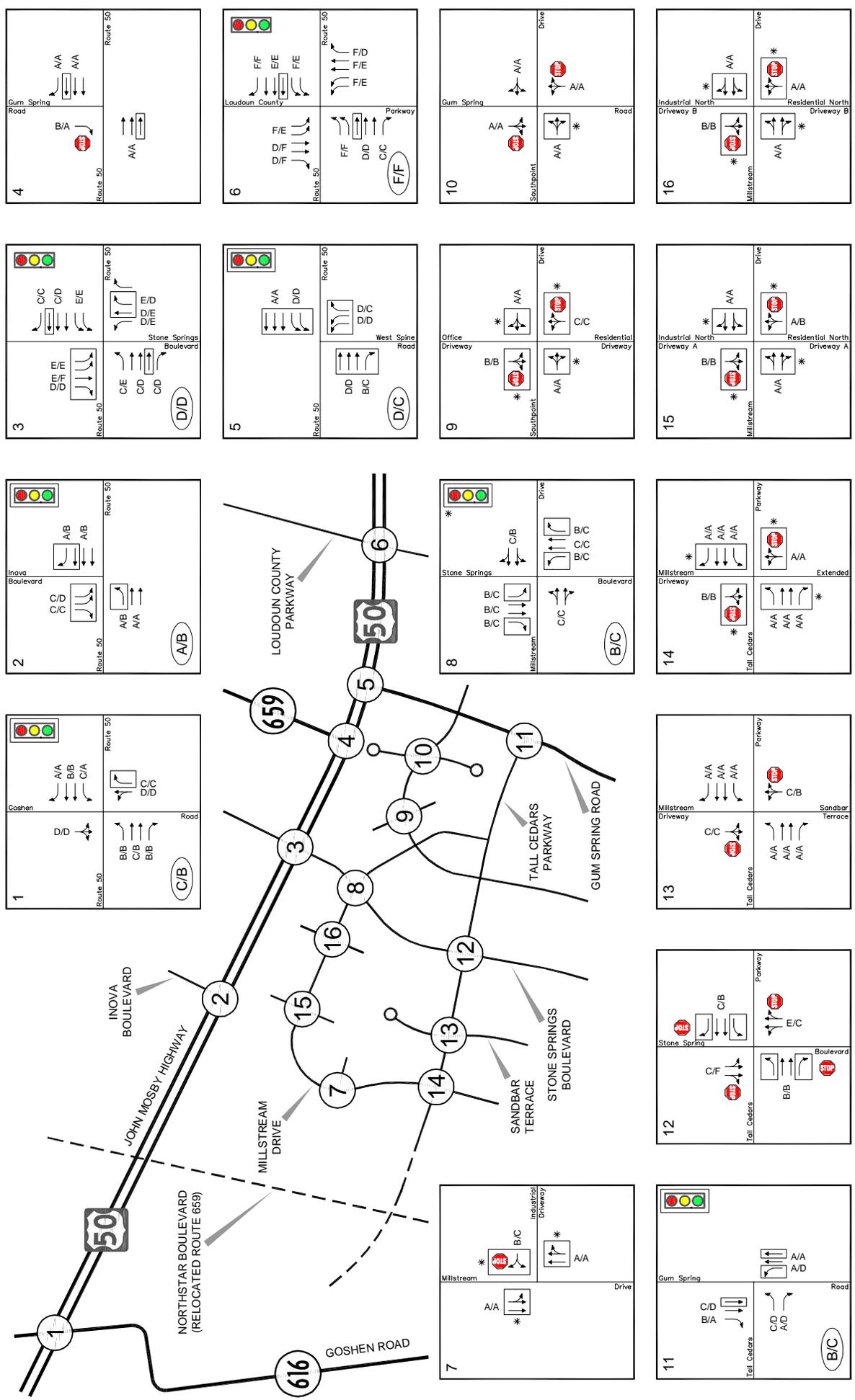


Figure 6
Future Approved Lane Use and Traffic Control and
Peak Hour Levels of Service



- xx Levels of Service
- (xx) Overall Levels of Service
- Profpered Improvement
- Site Improvement
- * - Location of Future Intersection

- ← Represents One Travel Lane
- ← Signalized Intersection
- ← Stop Sign

Figure 7
 Future Proposed Lane Use and Traffic Control and
 Peak Hour Levels of Service

Site Trip Generation Analysis and Comparison

Stone Ridge Commercial would modify, rezone, or expand land parcels within the property that would result in a net nominal increase of 133 S.F. of commercial space. This would be achieved by increasing general office space by 108,309 S.F. and reducing light industrial space by 108,176 S.F. The total number of approved residential units (3,265) would remain as currently approved.

The number of net new vehicle trips that would be generated by the proposed development program changes was calculated by comparing the existing and proposed programs for Stone Ridge using the standard rates and equations published by the Institute of Transportation Engineers (ITE) Seventh Edition Manual.

Adjustments were made for internal trips, transportation demand management measures, and passby trips, based on previously approved studies for Stone Ridge.

As shown in Table 3, the approved development program for Stone Ridge uses would generate 2,598 trips (1,286 in and 1,312 out) during the AM peak hour, 2,957 trips, (1,419 in and 1,538 out) during the PM peak hour, and 39,817 daily (24-trips).

The proposed development program would generate 2,661 trips (1,344 in and 1,317 out) during the AM peak hour, 2,991 trips, (1,422 in and 1,569 out) during the PM peak hour, and 40,092 daily (24-trips), as shown on Table 4. The proposed program has minimal impact on peak hour, peak direction trips since the shift in development density is proposed to be employment uses. The proposed development program would add only four (4) more outbound vehicle trips during the morning peak hour and only three (3) more inbound vehicle trips during the evening peak hour. The largest increase in peak hour vehicles (58 vehicles) would be realized for inbound traffic during the morning peak and outbound vehicles (31 vehicles) during the evening peak that is counter to peak commuter traffic flows.

A comparison of the approved and proposed development programs is summarized on Table 5 and the attached chart, and indicate that the proposed program would generate 63 (or 2.0 percent) *more* trips during the AM peak hour, and 34 (or 1.0 percent) *more* trips during the PM peak hour. A total of 275 (or 1.0 percent) *more* trips would be generated on a 24-hour basis.

Table 3
Stone Ridge Commercial
Stone Ridge Trip Generation Summary-Approved Program (1, 2)

Land Use	ITE Land Use Code	Amount	Units	AM Peak Hour			PM Peak Hour			Average Daily Traffic (3)
				IN	OUT	TOTAL	IN	OUT	TOTAL	
Residential										
Single-Family Detached	210	853	DU	152	455	607	465	273	738	8,530
Townhouse/Condominium	230	1,741	DU	86	422	508	419	207	626	15,147
Multi-Family	220	671	DU	67	266	333	251	135	387	4,183
Residential Subtotal		3,265	DU	305	1,142	1,447	1,135	615	1,750	27,860
Reduction for TDM (AM/PM) (4)	10%	10%		-	114	114	114	-	114	228
Internal to Office (AM/PM)	4%	8%		12	46	58	91	49	140	2,229
Internal to Retail (AM/PM)	1%	11%		6	10	16	104	96	201	2,154
Internal to Middle School	12%	3%		81	99	180	22	24	45	486
Internal to Elementary School	9%	0%		58	70	128	-	-	-	452
Internal to Library	0.2%	1%		1	2	2	6	6	12	95
Internal to Rec Center (North)	1%	0%		3	5	8	6	2	8	114
Internal to Rec Center (South)	0%	0%		1	2	3	2	1	3	46
Internal to Church	0%	0%		1	1	2	1	1	2	23
Internal to Day Care	2%	2%		12	14	26	14	12	26	159
Net New Residential Trips				130	781	911	776	424	1,200	21,876
Employment										
General Office	710	282,563	S.F.	379	52	431	67	328	395	2,968
General Industrial (Industrial Park)	130	109,250	S.F.							
General Industrial (Industrial Park)	130	461,000	S.F.							
General Industrial (Industrial Park) Total		570,250	S.F.	323	71	394	101	380	481	3,576
Employment Subtotal		852,813	S.F.	702	123	825	168	708	876	6,544
Reduction for TDM (AM/PM) (4)	10%	10%		70	-	70	-	71	71	141
Internal to Residential (AM/PM)	7%	16%		46	12	58	49	91	140	1,046
Internal to Retail (AM/PM)	1%	6%		6	10	16	70	64	134	393
Internal to Day Care (AM/PM)	3%	3%		12	14	26	14	12	26	159
Net New Employment Trips				568	87	655	35	470	505	4,806
Retail										
Retail	820	316,378	G.S.F.	191	122	312	643	696	1,339	14,357
New Trips	80%	75%		143	91	234	386	418	803	8,614
Pass-by (AM/PM) (5)	15%	15%		29	18	47	96	104	201	2,154
Internal to Residential (AM/PM) (6)	5%	15%		10	6	16	96	104	201	2,154
Internal to Office (AM/PM) (6)	5%	10%		10	6	16	64	70	134	1,436
School										
Middle School	522	1,200	Students	396	324	720	94	86	180	1,944
Internal from Residential (AM/PM) (7)	25%	25%		99	81	180	24	22	45	486
Net New Middle School Trips				297	243	540	71	65	135	1,458
Elementary School	520	700	Students	140	115	255	-	-	-	903
Internal from Residential (AM/PM)	50%	50%		70	58	128	-	-	-	452
Net New Elementary School Trips				70	58	128	-	-	-	452
Ancillary Uses										
Library	590	40,000	S.F.	34	13	47	115	125	240	1,898
Internal from Residential (AM/PM)	5%	5%		2	1	2	6	6	12	95
Net New Library Trips				32	12	45	109	119	228	1,803
Recreation Center (North)	495	5,000	S.F.	5	3	8	2	6	8	114
Internal from Residential (AM/PM) (8)	100%	100%		5	3	8	2	6	8	114
Net New Rec Center Trips				-	-	-	-	-	-	-
Recreation Center (South)	495	2,000	S.F.	2	1	3	1	2	3	46
Internal from Residential (AM/PM) (8)	100%	100%		2	1	3	1	2	3	46
Net New Rec Center Trips				-	-	-	-	-	-	-
Church	560	50,000	S.F.	19	17	36	17	16	33	456
Internal from Residential (AM/PM) (8)	5%	5%		1	1	2	1	1	2	23
Net New Church Trips				18	16	34	16	15	31	433
Day Care	565	8,000	S.F.	54	48	102	50	56	105	634
Internal from Residential (AM/PM) (8)	25%	25%		14	12	26	12	14	26	159
Internal from Office (AM/PM) (8)	25%	25%		14	12	26	12	14	26	159
Net New Day Care Trips				27	24	51	25	28	53	317
County Park	412	25	Acres	-	0	0	1	1	2	58
Internal from Residential (AM/PM) (8)	0%	0%		-	-	-	-	-	-	-
Net New Rec Center Trips				-	0	0	1	1	2	58
Total Approved Site Trip Generation				1,286	1,312	2,598	1,419	1,538	2,957	39,817

Notes: (1) Trip generation based on Institute of Transportation Engineers Trip Generation, 7th Edition, consistent with previous studies.
(2) Development densities based on site plans provided by Urban Engineering.
(3) Average Daily Traffic for SFDU 10/D.U. and SFA of 8.7/D.U. based on County rate.
(4) Transportation Systems Management (TSM) reduction applied to peak hour, peak direction trips as assumed in original 1995 and August 2005 traffic studies.
(5) Pass-by rate utilized by VDOT and assumed in original 1995 and August 2005 traffic studies.
(6) Rate based on original June 1995 traffic study.
(7) Rate based on information provided by Loudoun County Public Schools.
(8) Rate based on information provided by Van Metre Companies.

Table 4
Stone Ridge Commercial
Stone Ridge Trip Generation Summary-Proposed Program (1, 2)

Land Use	ITE Land Use Code	Amount	Units	AM Peak Hour			PM Peak Hour			Average Daily Traffic (3)
				IN	OUT	TOTAL	IN	OUT	TOTAL	
Residential										
Single-Family Detached	210	853	DU	152	455	607	465	273	738	8,530
Townhouse/Condominium	230	1,741	DU	86	422	508	419	207	626	15,147
Multi-Family	220	671	DU	67	266	333	251	135	387	4,183
Residential Subtotal		3,265	DU	305	1,142	1,447	1,135	615	1,750	27,860
Reduction for TDM (AM/PM) (4)	10%	10%		-	114	114	114	-	114	228
Internal to Office (AM/PM)	4%	8%		12	46	58	91	49	140	2,229
Internal to Retail (AM/PM)	1%	11%		6	10	16	104	96	201	2,154
Internal to Middle School	12%	3%		81	99	180	22	24	45	486
Internal to Elementary School	9%	0%		58	70	128	-	-	-	452
Internal to Library	0.2%	1%		1	2	2	6	6	12	95
Internal to Rec Center (North)	1%	0%		3	5	8	6	2	8	114
Internal to Rec Center (South)	0%	0%		1	2	3	2	1	3	46
Internal to Church	0%	0%		1	1	2	1	1	2	23
Internal to Day Care	2%	2%		12	14	26	14	12	26	159
Net New Residential Trips				130	781	911	776	424	1,200	21,876
Employment										
General Office	710	390,872	S.F.	491	67	558	88	429	517	3,811
General Industrial (Industrial Park)	130	142,904	S.F.							
General Industrial (Industrial Park)	130	319,170	S.F.							
General Industrial (Industrial Park) Total		462,074	S.F.	275	60	335	84	314	398	3,040
Employment Subtotal		852,946	S.F.	766	127	893	172	743	914	6,851
Reduction for TDM (AM/PM) (4)	10%	10%		77	-	77	-	74	74	151
Internal to Residential (AM/PM)	6%	15%		46	12	58	49	91	140	1,049
Internal to Retail (AM/PM)	1%	6%		6	10	16	70	64	134	411
Internal to Day Care (AM/PM)	3%	3%		12	14	26	14	12	26	159
Net New Employment Trips				626	92	718	39	501	540	5,081
Retail										
Retail	820	316,378	G.S.F.	191	122	312	643	696	1,339	14,357
New Trips	80%	75%		143	91	234	386	418	803	8,614
Pass-by (AM/PM) (5)	15%	15%		29	18	47	96	104	201	2,154
Internal to Residential (AM/PM) (6)	5%	15%		10	6	16	96	104	201	2,154
Internal to Office (AM/PM) (6)	5%	10%		10	6	16	64	70	134	1,436
School										
Middle School	522	1,200	Students	396	324	720	94	86	180	1,944
Internal from Residential (AM/PM) (7)	25%	25%		99	81	180	24	22	45	486
Net New Middle School Trips				297	243	540	71	65	135	1,458
Elementary School	520	700	Students	140	115	255	-	-	-	903
Internal from Residential (AM/PM)	50%	50%		70	58	128	-	-	-	452
Net New Elementary School Trips				70	58	128	-	-	-	452
Ancillary Uses										
Library	590	40,000	S.F.	34	13	47	115	125	240	1,898
Internal from Residential (AM/PM)	5%	5%		2	1	2	6	6	12	95
Net New Library Trips				32	12	45	109	119	228	1,803
Recreation Center (North)	495	5,000	S.F.	5	3	8	2	6	8	114
Internal from Residential (AM/PM) (8)	100%	100%		5	3	8	2	6	8	114
Net New Rec Center Trips				-	-	-	-	-	-	-
Recreation Center (South)	495	2,000	S.F.	2	1	3	1	2	3	46
Internal from Residential (AM/PM) (8)	100%	100%		2	1	3	1	2	3	46
Net New Rec Center Trips				-	-	-	-	-	-	-
Church	560	50,000	S.F.	19	17	36	17	16	33	456
Internal from Residential (AM/PM) (8)	5%	5%		1	1	2	1	1	2	23
Net New Church Trips				18	16	34	16	15	31	433
Day Care	565	8,000	S.F.	54	48	102	50	56	105	634
Internal from Residential (AM/PM) (8)	25%	25%		14	12	26	12	14	26	159
Internal from Office (AM/PM) (8)	25%	25%		14	12	26	12	14	26	159
Net New Day Care Trips				27	24	51	25	28	53	317
County Park	412	25	Acres	-	0	0	1	1	2	58
Internal from Residential (AM/PM) (8)	0%	0%		-	0	0	-	-	-	-
Net New Rec Center Trips				-	0	0	1	1	2	58
Total Approved Site Trip Generation				1,344	1,317	2,661	1,422	1,569	2,991	40,092

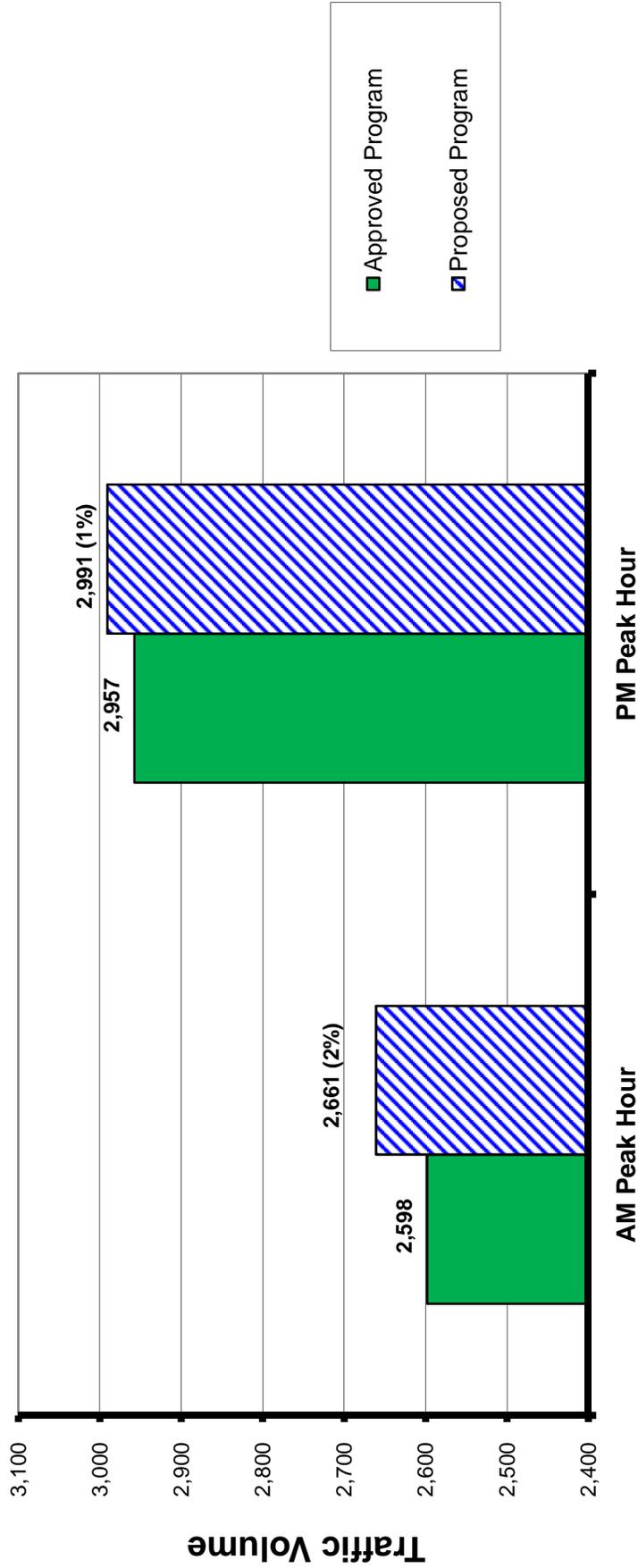
Notes: (1) Trip generation based on Institute of Transportation Engineers' Trip Generation, 7th Edition.
(2) Development densities based on site plans provided by Urban Engineering.
(3) Average Daily Traffic for SFDU 10/D.U. and SFA of 8.7/D.U. based on County rate.
(4) Transportation Systems Management (TSM) reduction applied to peak hour, peak direction trips as assumed in original 1995 and August 2005 traffic studies.
(5) Pass-by rate utilized by VDOT and assumed in original 1995 and August 2005 traffic studies.
(6) Rate based on original June 1995 traffic study.
(7) Rate based on information provided by Loudoun County Public Schools.
(8) Rate based on information provided by Van Metre Companies.

Table 5
 Stone Ridge Commercial
 Trip Generation Comparison

Program	AM Peak Hour			PM Peak Hour			Average Daily Traffic
	In	Out	Total	In	Out	Total	
Approved Program	1,286	1,312	2,598	1,419	1,538	2,957	39,817
Proposed Program	<u>1,344</u>	<u>1,317</u>	<u>2,661</u>	<u>1,422</u>	<u>1,569</u>	<u>2,991</u>	<u>40,092</u>
Difference	58	4	63	3	31	34	275
Percentage	5%	0%	2%	0%	2%	1%	1%

Notes: (1) Trip generation based on Institute of Transportation Engineers Trip Generation, 7th Edition.

Stone Ridge Commercial Trip Generation Comparison



Trip Distribution Analysis

The distribution of external peak hour trips generated by Stone Ridge Commercial was determined based on previous traffic studies. Separate distributions were developed for the residential, employment, retail, and civic uses, consistent with previously approved studies. Further, these distributions were verified through a review of the existing traffic counts at the site driveways and key intersections, and were used to apply the site-generated trips to the planned road network. The external and internal trip assignments between the various land bays within Stone Ridge are contained in Appendices F through I.

Future Traffic Forecasts

Overview. Future forecasts for 2015 were developed to reflect the currently approved and proposed development programs for Stone Ridge. These volumes are based on a composite of existing volumes; traffic generated by the 17 other area developments and regional growth factors. The resultant traffic volume forecasts and daily traffic volume estimates are shown on Figures 8 and 9.

Future Levels of Service

Overview. Future peak hour levels of service with the approved and proposed development programs of Stone Ridge were estimated at the key intersections in the study area for 2015 buildout conditions. The calculations were based on the future lane usage and traffic controls shown on Figures 6 and 7 that include planned improvements and current and proposed proffers and the Highway Capacity Manual methodology, in accordance with the FSM guidelines. The results are summarized on Table 2 and presented in Appendices J and K.

The results indicate the following:

Approved Program

1. Assuming the improvements currently planned by others are installed, the U.S. Route 50 intersections at Goshen Road and Racefield Lane would operate acceptable levels of service in 2015 during both the AM and PM peak hour.
2. Based on the planned improvements, the U.S. Route 50/Stone Springs Boulevard intersection is projected to operate at overall acceptable levels of service (at LOS “D”) during both the AM and PM peak hours, with some individual movements operating at LOS “E”. This assumes the extension of Stone Springs Boulevard to the north and the modification of the northbound approach.

3. The right turning movements at the converted U.S. Route 50/Route 659 intersection to right-in/right-out only are forecasted to operate at acceptable levels of service during both the AM and PM peak hours.
4. The relocated signalized U.S. Route 50/West Spine Road intersection would operate at acceptable levels of service during the AM and PM peak hours.
5. The U.S. Route 50/Loudoun County Parkway (Route 606) intersection would operate beyond capacity during both peak periods.
6. All of the turning movements at the access to Land Bay 7 on Millstream Drive would operate at acceptable levels of service under stop sign control, with the exception of the exiting movement during the evening peak hour. However, this assumes that all access would be provided from a single driveway. It is anticipated that multiple driveways would ultimately be provided that would better distribute traffic at the driveways and reduce delays.
7. Nearly all movements at the Stone Springs Boulevard/Millstream Drive intersection are expected to operate near (at LOS "E") or beyond (at LOS "F") capacity during the AM and PM peak hours, under the existing all-way stop control. A new traffic signal would be necessary to restore this intersection to acceptable levels of service, assuming warrants for signalization are met.
8. All of the approaches at the currently all-way stop controlled Stone Springs Boulevard/Tall Cedars Parkway intersection are anticipated to operate at acceptable levels of service with the exception of the northbound approach during the AM peak hour and the southbound approach during the PM peak hour. Since these forecasts assume the existing road network and do not include future connections to North Star Boulevard (Relocated Route 659) and the extension of Tall Cedars Parkway that may be fully or partially constructed as the buildout of Stone Ridge is realized, no additional improvements, other than opening up currently striped turn lanes, are recommended.
9. The anticipated traffic signal at the Route 659 (West Spine Road)/Tall Cedars Parkway intersection would operate at acceptable levels of service during both the AM and PM peak hours.
10. All of the turning movements at the Southpoint Drive access to the office and residential Land Bays FF1A and FF2B would operate at acceptable levels of service under stop sign control.
11. All of the turning movements at the Millstream Drive/Sandbar Terrace/Tall Cedars Parkway intersection would operate at acceptable levels of service under stop sign control.

Proposed Program

Future peak hour intersection levels of service with the proposed Stone Ridge Commercial development program were estimated at the key intersections in the study area based on the future lane usage and traffic control shown on Figure 7 and the Highway Capacity Manual methodology. The results are presented in Appendix J and summarized in Table 2.

The results for future conditions, with the Stone Ridge Commercial program, are consistent with those realized under approved conditions since the number of additional peak hour trips that would be added to the road network is minimal. The proposed development program would result in minor decreases in delay at some intersections, primarily due to the extension of Southpoint Drive (formerly Canary Grass Court). Other intersections would realize minimal increases in peak hour delay with the proposed program. It is noted that the fluctuations in delay at these signalized intersections are within approximately three (3.0) seconds that is not perceivable by motorists.

The recommendations at the key internal intersections of Stone Springs Boulevard at Millstream Drive and Tall Cedars Parkway as identified under approved conditions would continue to apply with the Stone Ridge Commercial program. All of the minor intersections would operate adequately under stop sign control.

The proposed internal road network changes within Stone Ridge, including the extension of Southpoint Drive and Millstream Drive would better serve the planned employment uses, reduce commercial and heavy vehicle traffic along Tall Cedars Parkway, provide a future connection to the West Spine Road and allow residents of the community to access commercial uses without traveling on U.S. Route 50.

Stone Ridge has made a number of roadway improvements in order to accommodate the currently approved development program that includes new traffic signals, lane improvements, and Transportation Demand Management (TDM) measures to mitigate the impacts of the development and improve mobility in the Dulles South area. The additional transportation proffers associated with this change in development program would more than adequately offset the minimal increase in peak hour trips associated with the zoning change.

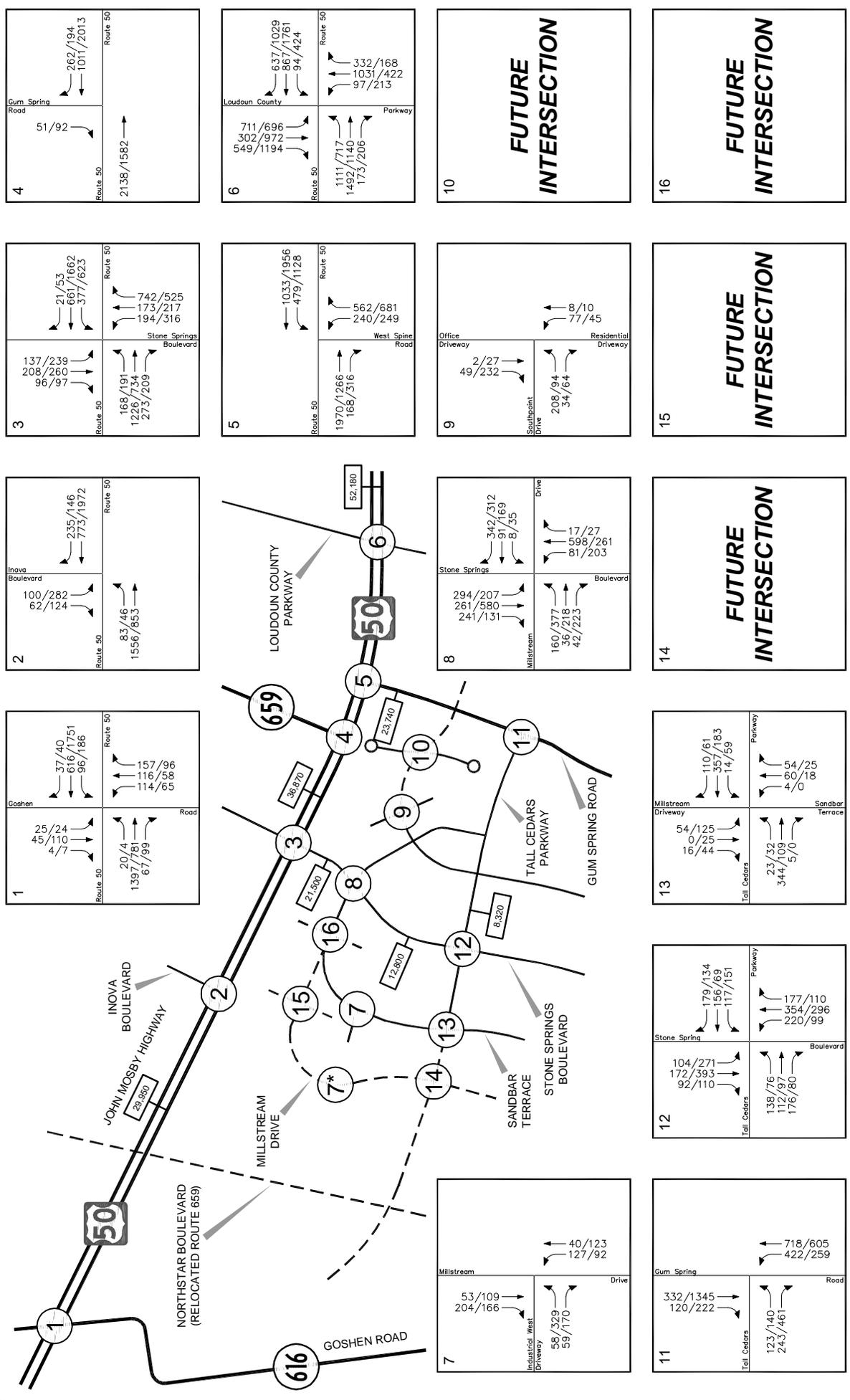


Figure 8
2015 Future Approved Traffic Forecasts

AM PEAK HOUR
 PM PEAK HOUR
 North

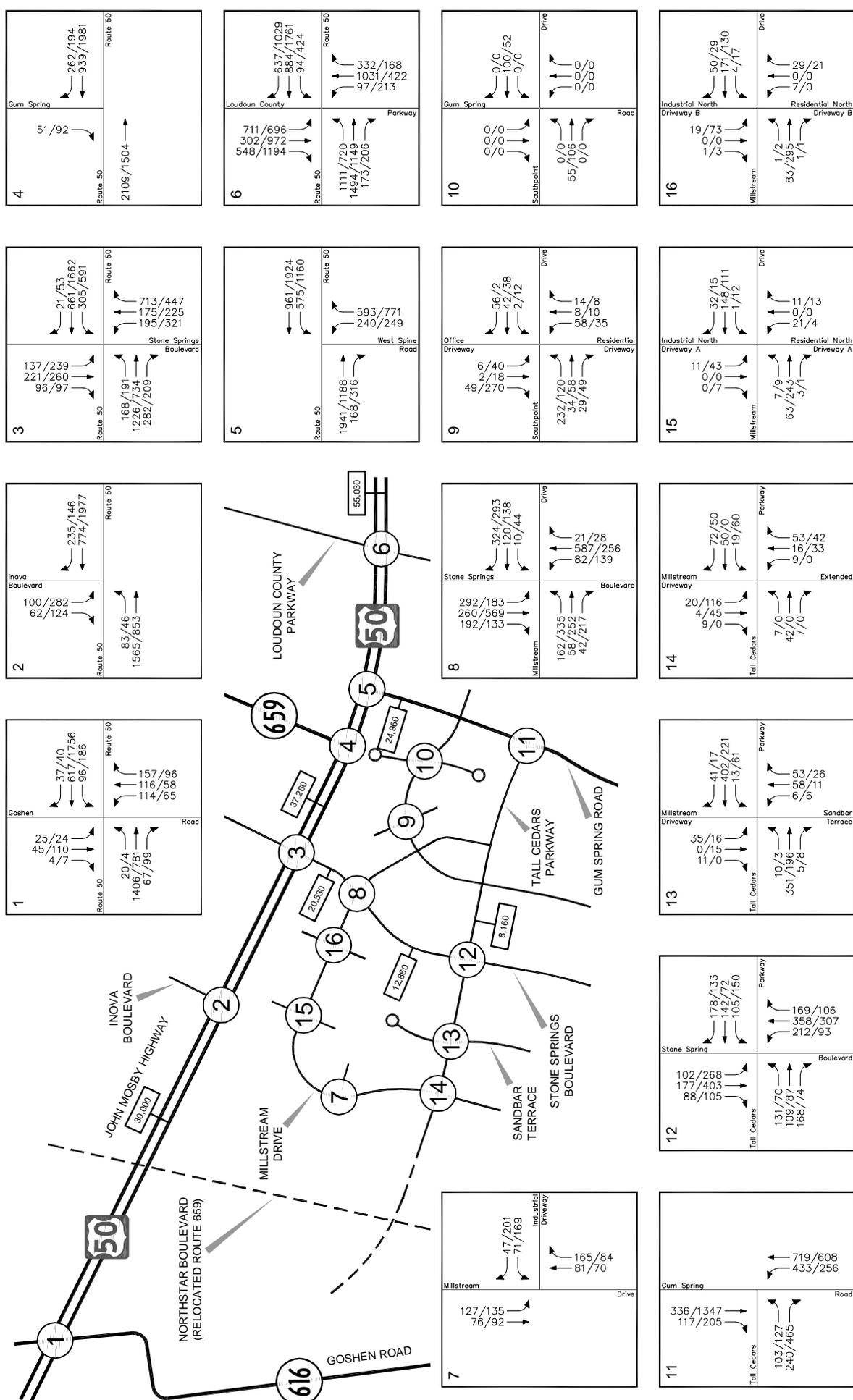


Figure 9
2015 Future Proposed Traffic Forecasts

AM PEAK HOUR
000/000
North

2030 Loudoun County Model Analysis

As recently adopted by Loudoun County, a review of the traffic forecasts contained in the 2030 traffic volume model was prepared as part of the long-range analysis procedure to assess buildout plus 10-year conditions. The Viper model information was provided by OTS staff for the roadway links adjacent to Stone Ridge and reflect the 2030 average daily (24-hour) volume forecasts for these facilities. The model volumes reflect the Round 7.0 Land Use data and the currently adopted Countywide Transportation Plan (CTP). A summary of the volumes is shown on Figure 10.

The traffic model is being used on a macro basis to update and evaluate the current CTP and as a tool to assess development proposals under long-range conditions. The traffic model includes several planned roadway connections, and compares the volume forecasts to general roadway cross sections for capacity purposes. It is noted and recognized that modification and refinement of this model is ongoing, and that subsequent changes will likely occur as identified in the VDOT comments. This data is provided for informational purposes only as specified in the original traffic scoping agreement for this project. A buildout plus 10-year analysis of these forecasts was not required since long-range conditions were studied as part of the original approval and the proposed site modifications would result in an increase of fewer than 100 peak hour trips.

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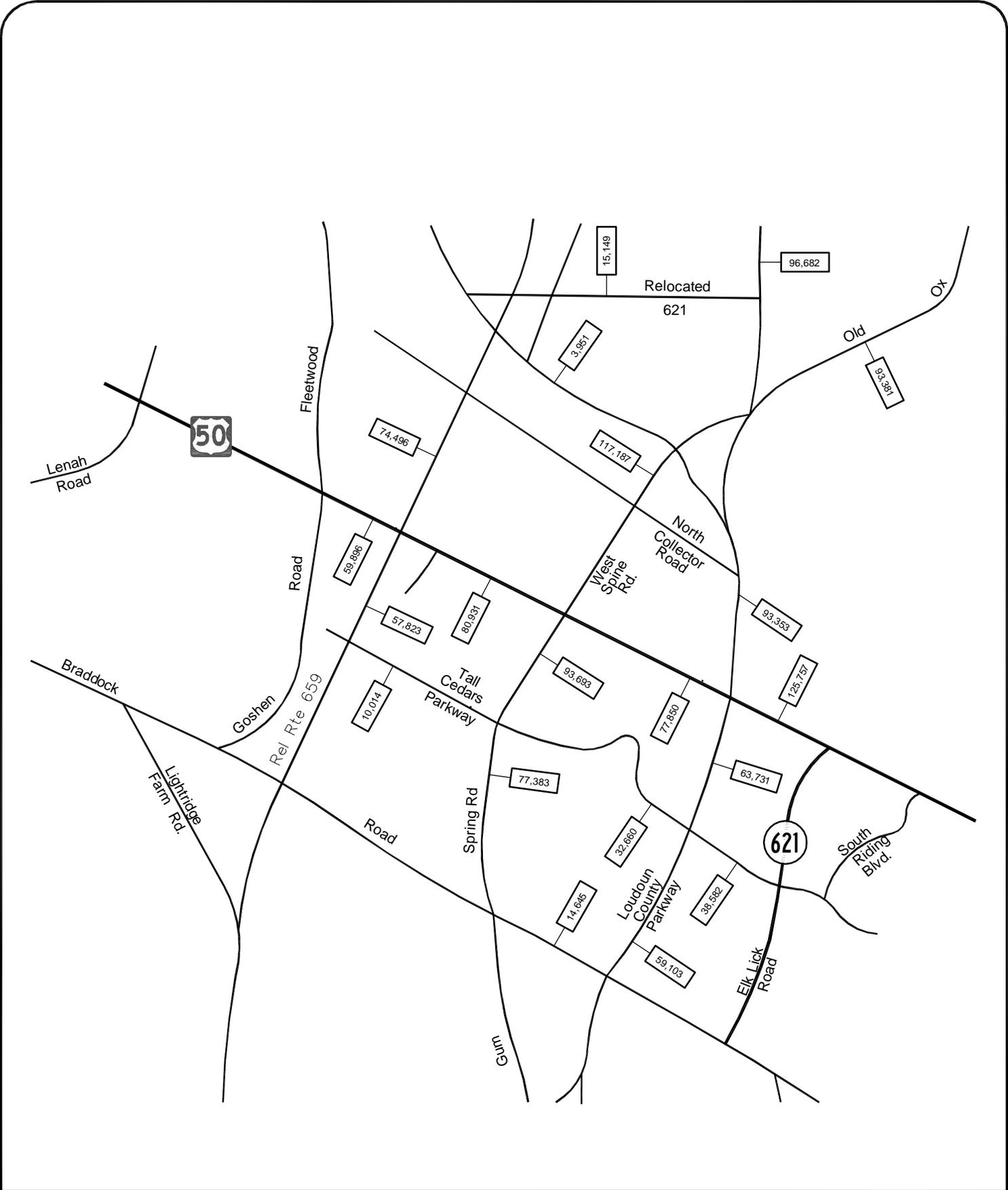


Figure 10
2030 Average Daily Traffic Forecasts
From Loudoun County Model



JCP

Proffer Comparison

As requested by OTS staff, a comparison of the existing and proposed transportation proffers is outlined below:

Approved Proffers (October 2005)	Proposed Proffers (June 2009)	Difference
<p><u>ROW Dedication and Construction</u> ROW and easements provided at the request of the County</p>	ROW and easements provided at the request of the County	No Change
<p><u>Tall Cedars Parkway</u> Design and construct a four-lane divided roadway with turn lanes in two phases from west terminus to Route 659 Relocated within 120-foot ROW in three phases.</p>	No changes proposed	No Change
<p><u>Route 50</u> Construct third eastbound lane from 500 feet east of the Route 50/existing 659 intersection to the West Spine Road intersection.</p>	No changes proposed	No Change
<p>Submit plans and profiles for the construction of the third eastbound lane, within the existing median, from the West Spine Road to Loudoun County Parkway prior to the first residential zoning permit for Land Bays 1,2,3,4 or 5.</p>	No changes proposed- Plans and profiles have been submitted and are approved.	No Change
<p><u>Route 50 Intersections</u> Route 50/West Spine Road. Construct auxiliary turn lanes on all approaches.</p>	No changes proposed	No Change
<p>Route 50/Gum Spring Road.</p>	Pending other road connections, the applicant shall not object to the removal of the existing traffic signal at Route 50/Gum Spring Road and closure of the median break and modification of the existing Gum Spring Road entrance on the south side of Route 50 to a right-in/right-out only entrance by VDOT or others.	New proffer.
<p><u>Millstream Drive Extended</u> Extend Millstream westward to Route 659 Relocated in two phases and provide four-lanes within a 90-foot ROW</p>	Extend Millstream west and south to Tall Cedars Parkway with a ROW from 52' to 64'. The roadway will be constructed and open to traffic within 12 months if necessary for access to Public Use Site #3 if requested by the County.	Modified ROW and timing of construction.

Approved Proffers (October 2005)	Proposed Proffers (June 2009)	Difference
<p><u>Phasing Plan</u></p> <p>No more than 300 residential zoning permits within combined Land Bays 1,2,3,4 and 5 may be issued within a two-year period following approval of this Application</p>	Designation changed to reflect "Land Bay 5R"	No Change
<p><u>Western Bypass/Route 659 Relocated</u></p> <p><u>Western Transportation Corridor.</u> If requested, reserve ROW for Western Transportation Corridor associated with Land Bays 4, 5 and 7.</p> <p><u>Route 659 Relocated.</u> Dedicate 120' ROW from Tall Cedars Parkway to the southern site boundary. Construct four-lane undivided section in lieu of Route 50 improvements. Provide 120' ROW from Tall Cedars Parkway to northern boundary with no obligation to construct.</p>	<p>Deleted</p> <p><u>North Star Boulevard (Route 659 Relocated).</u> Dedicate 120' ROW from Tall Cedars Parkway to the southern site boundary. Construct the eastern two-lanes of North Star Boulevard between TCP and the southern boundary, prior to the issuance of the 301st residential zoning permit in Land Bays 1,2,3,4 or 5R.</p>	<p>Deleted proffer</p> <p>Modified for construction of two eastern lanes between TCP and southern boundary.</p>
<p><u>Signalization</u></p> <p>Provide new traffic signals at: (1) Route 50/Stone Springs Blvd, (2) Route 50/Existing 659, (3) Tall Cedars Parkway/Route 659, (4) West Spine Road/Greenstone Drive, (5) Future West Spine Road/Route 50. Bonds for these signals are required at the time of record plat. Also, provide signalized of on-site roads with studies required when submitting preliminary subdivision applications.</p>	Submit a traffic signal warrant study for the Stone Springs Boulevard/Millstream Drive intersection during the site plan review process for Land Bay EE2A. If warranted, contribute \$250,000 to the County for the design, construction, and installation of the signal.	Modified for signal warrant study and contribution.
<p><u>Park and Ride Lot</u></p> <p>Provide bus shelter at existing park and ride lot</p>	Shelter exists.	No Change
Public Use Site #4	Provide 100 commuter parking spaces and convey them to the County upon request.	New Proffer
<p><u>Cash Contribution for Regional Roads</u></p> <p>Contribute \$0.50 per gross square foot areas zoned for industrial (PD-IP), office (PD-OP), and retail commercial (PD-CC(SC)).</p>	No changes proposed	No Change
<p><u>Goshen Road</u></p> <p>Dedicate frontage on Goshen Road, if required. No vehicular access allowed with no obligation to construct improvements.</p>	No changes proposed	No Change
<p><u>Cash Contribution for Capital Facilities</u></p> <p>Contribute \$37,660 per SFDU, \$22,291 per SFA, and \$12,611 per MF unit</p>	No changes proposed	No Change

Recommendations

The following recommendations are made based on the revised traffic impact analysis for Stone Ridge Commercial:

1. Since the proposed land use changes for Stone Ridge Commercial have minimal impact on peak hour trips (63 AM/34 PM), no additional improvements at the regional roadway intersections are recommended with this application. The majority of major intersections on U.S. Route 50 would operate at acceptable levels of service with or without the development program changes proposed within Stone Ridge.
2. Construct the following road network improvements in conjunction with the Stone Ridge Commercial development program as outlined in the revised proffers:
 - Extend Southpoint Drive from Millstream Drive to existing Gum Spring Road (VA Route 659). Provide separate turn lanes at the Gum Spring Road intersection if the connection is made prior to the construction and opening of the West spine Road, in accordance with VDOT and Loudoun County standards.
 - Provide intersection improvements to include a new traffic signal and turn lanes at the West Spine Road/U.S. Route 50 intersection and at the Gum Spring Road/Tall Cedars Parkway intersection through existing Stone Ridge proffers.
 - Include provisions for a traffic signal warrant study and potential signalization at the Stone Springs Boulevard/Millstream Drive intersection.
 - Realign Millstream Drive west of Stone Springs Boulevard to access Land Bay 7 and connect to Tall Cedars Parkway west of the residential areas.
 - Construct the two eastern lanes of North Star Boulevard (Relocated Route 659) within the Stone Ridge property from Tall Cedars Parkway to the south site boundary. Reserve adequate right-of-way (120') for the ultimate six-lane section.

These proposed network changes and proffered improvements will effectively mitigate the additional vehicle trips associated with the Stone Ridge Commercial program

Questions regarding this document should be directed to Wells + Associates.