



MEMORANDUM

TO: John Bassett
Marchant Schneider

CC: Sam Adamo
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FROM: Christopher M. Tacinelli
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VDOT
Loudoun County OTS

Loudoun County Public Schools
Loudoun County Public Schools

DATE: June 9, 2010

SUBJECT: Response to Comments for Loudoun County Public Schools
HS-7 Dulles South High School and Elementary School, Goshen Road Assemblage
(1st Submission) Loudoun County Plan Number ZMAP 2010-0001 and SPEX 2010-0003

This document addresses the comments received from VDOT for the traffic impact analysis prepared for Loudoun County Public Schools HS-7 Dulles South High School and Elementary School, Goshen Road Assemblage (1st Submission), Loudoun County Plan Number ZMAP 2010-0001 and SPEX 2010-0003 in Loudoun County, Virginia. Each comment is presented in *italics* with the response in **bold** immediately following.

COMMENTS:

- 1) *Please provide Level of Service (LOS) by lane group in both tables and figures.*

Comment acknowledged. The revised report dated June 9, 2010 provides Level of Service (LOS) by lane group in both tables and figures.

- 2) *Page 63, Figure 27; site generated traffic volume (in and out of the site) does not match with the trip generated (e.g. AM traffic out of the site is $128+30+37+0+17 = 212$, but trip generated is only 158) Even though the number used is more than trips generated but please verify and justify. Also, provide an example how the Figures 28-31 (page 64-67) were generated. The example should involve data as well as referenced table/figure #s.*

There were two separate trip generation scenarios analyzed under future conditions (2015) with the proposed elementary school and high school in place. One scenario

reflected the High School Peak Hour and the second scenario reflected the Elementary School Peak Hour. However, there will be an overlap between the two proposed schools under each scenario.

The trips generation mentioned in the comment above by the elementary school (outbound AM) is 158, however there is an overlap with the High School traffic, wherein 25% of High School traffic will also exit within that Elementary School peak hour (60 vph). Hence, the total outbound trip generation in the AM will be 218 vph during the Elementary School Peak Hour.

An example showing the how future conditions with development (2015): Elementary School Peak Hour (Alternative 1: Mixed Feed) volumes were generated is shown in Appendix A in the following sequence:

1. Existing Volumes
2. Existing Volumes + Inherent Growth (2015)
3. Background developments traffic
4. High School Trips – During Elementary School Peak Hour (Alternative 1: Mixed Feed)*
5. Elementary School Trips – During Elementary School Peak Hour*
6. Future Conditions with Development (2015): Elementary School Peak Hour (Alternative 1: Mixed Feed)

Hence, volumes in Figure # 6 = Figure 2+ Figure 3+ Figure 4+ Figure 5.

**Note: Please note that the elementary school site trips generated from Land Bays along Goshen Road (8% of Elementary School traffic) is not shown on the graphic as it will directly access the school site through Goshen Road and will not utilize the site entrances along Route 659 Relocated.*

The corresponding trip generation table for the Elementary School Peak Hour is provided below:

Table 9C: Trip Generation (Elementary School Peak Hour)

Land Use	ITE Code	Size	----- Week day -----						
			AM Peak Hour			PM Peak Hour			Daily Total
			In	Out	Total	In	Out	Total	
Elementary School	520	875 Students	194	158	352	107	130	237	1,129
High School	Overlap	25%/30% Students	129	60	189	52	105	157	2,784
OVERALL TOTAL			323	218	541	159	235	394	3,913

- 3) *Background developments; Background developments used in the report (page 21, page 43 etc) does not match as provided in the scoping documents. Also, background development # 13 on page # 21 does not match on page 22 (Figure 7) and an additional background development # 14 is shown on page 22 (Figure 7).*

After the scoping meeting was held, the exact locations and designations (names) of these developments were verified. In this process, the background development locations and names for a couple of developments were changed with the most updated information.

Background development #13 on page #21 was shown as background development #14 on page 22 (Figure 7). This was a typographical error and has been corrected in the revised traffic study.

Per Loudoun County staff's request, after the scoping meeting, an additional background development, Arcola Center, was added to the analysis. Traffic generated by the additional background development (Arcola Center) shown in Figure 7 was considered as part of the background traffic for the future without development conditions (2015) only. Two separate maps showing locations of the approved developments for both 2012 (Figure 7) and 2015 (Figure 21) are included in the revised traffic study.

- 4) *Page 23, Figure 8, intersection # 1; Westbound through AM peak volume is shown as 451 and 384 used in synchro analysis. Also, page 35, Figure 14, intersection # 7; Eastbound AM peak through volume is shown as 19 and used 19 in synchro. Should it not be 9? Please verify and correct accordingly.*

The westbound AM peak through volume at intersection #1 should be 384 trips and not 451. The previously submitted Synchro files and capacity analysis are correct. The typographical error in Figure 8 has been corrected in the revised traffic study.

The eastbound AM peak right turn volume at intersection #7 (Figure 14) should be 19 and not 9. The eastbound AM peak right turn volume at intersection #7 (Figure 12, page 33) should be 19 and not 9. This was a typographical error and has been corrected in the revised traffic study.

- 5) *Page 36; line 2, remove “and weekday afternoon commuter pear hours” from the text.*

Comment acknowledged.

- 6) *Page 43; Figure referenced as Figure 6 should be Figure 7.*

Comment acknowledged.

- 7) *Page 95, Figure 45, intersection # 5; color codes do not match as per legend for planned/recommended improvements.*

Comment acknowledged. Please see revised traffic study.

- 8) *Appendix B; please explain why graphical presentation of volumes shows ES **Intersection Peak Volumes** and HS **System Peak Volumes**?*

Comment acknowledged. Appendix B provides Elementary School and High School Peak Hour volumes. The typographical error has been rectified in Appendix B.

- 9) *As per report, GSA has collected actual field data for a significant number of schools for Loudoun County Public Schools regarding traffic for two schools that overlaps. Please provide the field date in the Appendix to support for using 25% AMPH and 30% PMPH in the report.*

Comment acknowledged. The field data from the existing High Schools in Loudoun County is attached in the Appendix section at the back of this memorandum. The calculations showing 25% and 30% of the High School peak hour traffic overlapping with the Elementary School peak hour traffic is shown in the field data calculations.

- 10) *This development is proposed to access North Star Boulevard by the horizon year of 2015 (with first phase to be completed by 2012). Loudoun County-wide Transportation Plan (CTP) has identified North Star Boulevard as the future alignment of VA 659 Relocated by 2030. A recent review of Loudoun County’s travel demand model revealed more than 60% of 2030 traffic on VA 659 Relocated would be “through” traffic (commuters with both origin and destination beyond the immediate area of this development). Therefore, safety at the accesses to the development may be compromised thus planning for measures such as traffic lights during peak hour (when schools are in session) is highly recommended for years beyond the horizon year of this study.*

Comment acknowledged. LCPS is willing to provide for future signal warrant analysis and fund future signals if warranted. This should be addressed as a part of the Special Exception.

11) This study has assumed 8% heavy truck on US 50 where VDOT's license plate survey (conducted in June 2008) showed 13% heavy truck for the same location on US 50. Please make the adjustment and re-evaluate the impact.

Comment acknowledged. The Synchro files were updated to reflect this change. The results are included in the revised report.

APPENDIX

Appendix A: Figures

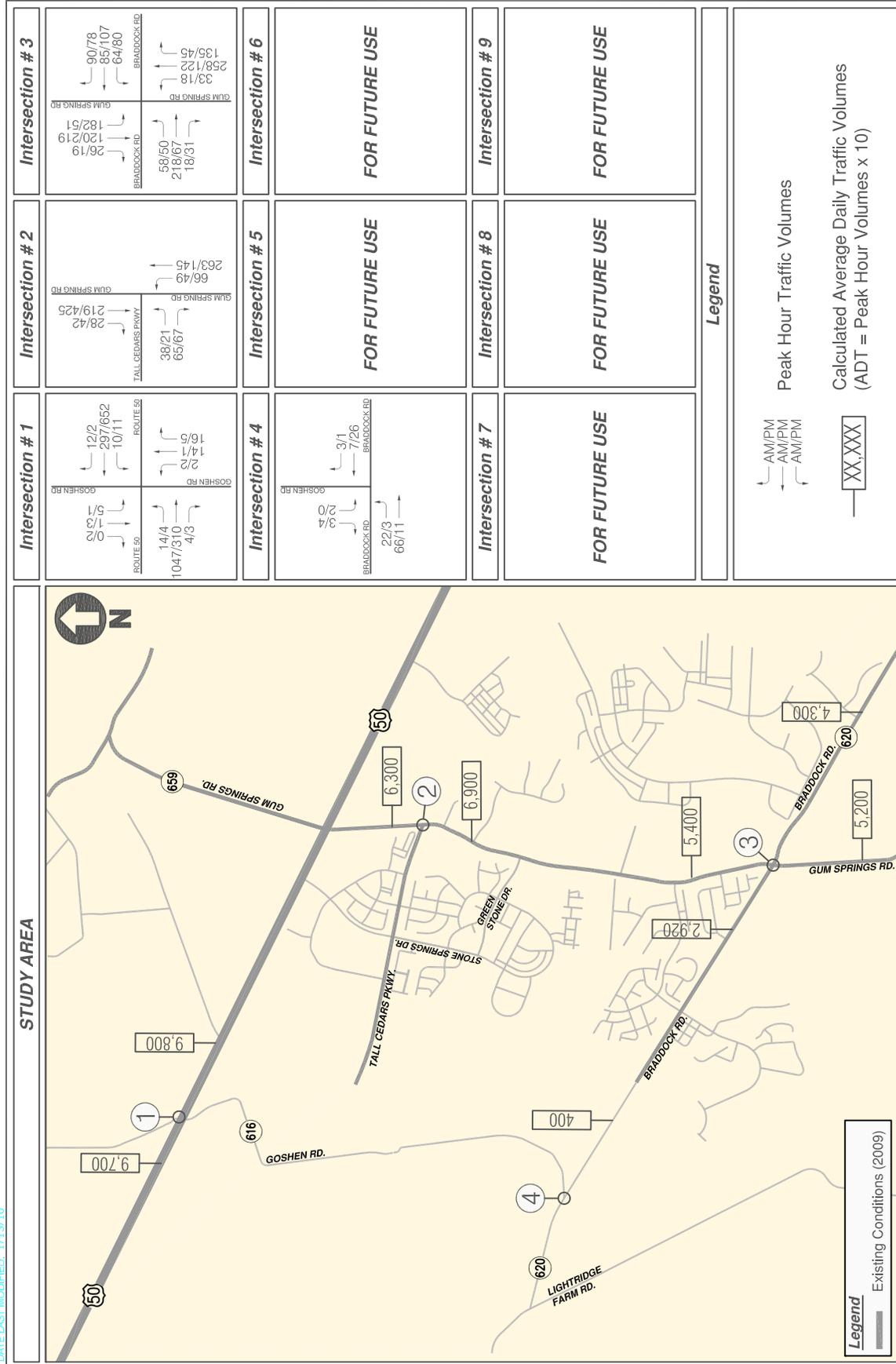


Figure 1
 Existing Traffic Volumes (2009)
 Elementary School Peak Hour
 (7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM)

FILE PATH: P:\2110\013\LCPSS Goshen HS7\CAO
 DATE LAST MODIFIED: 1/13/10

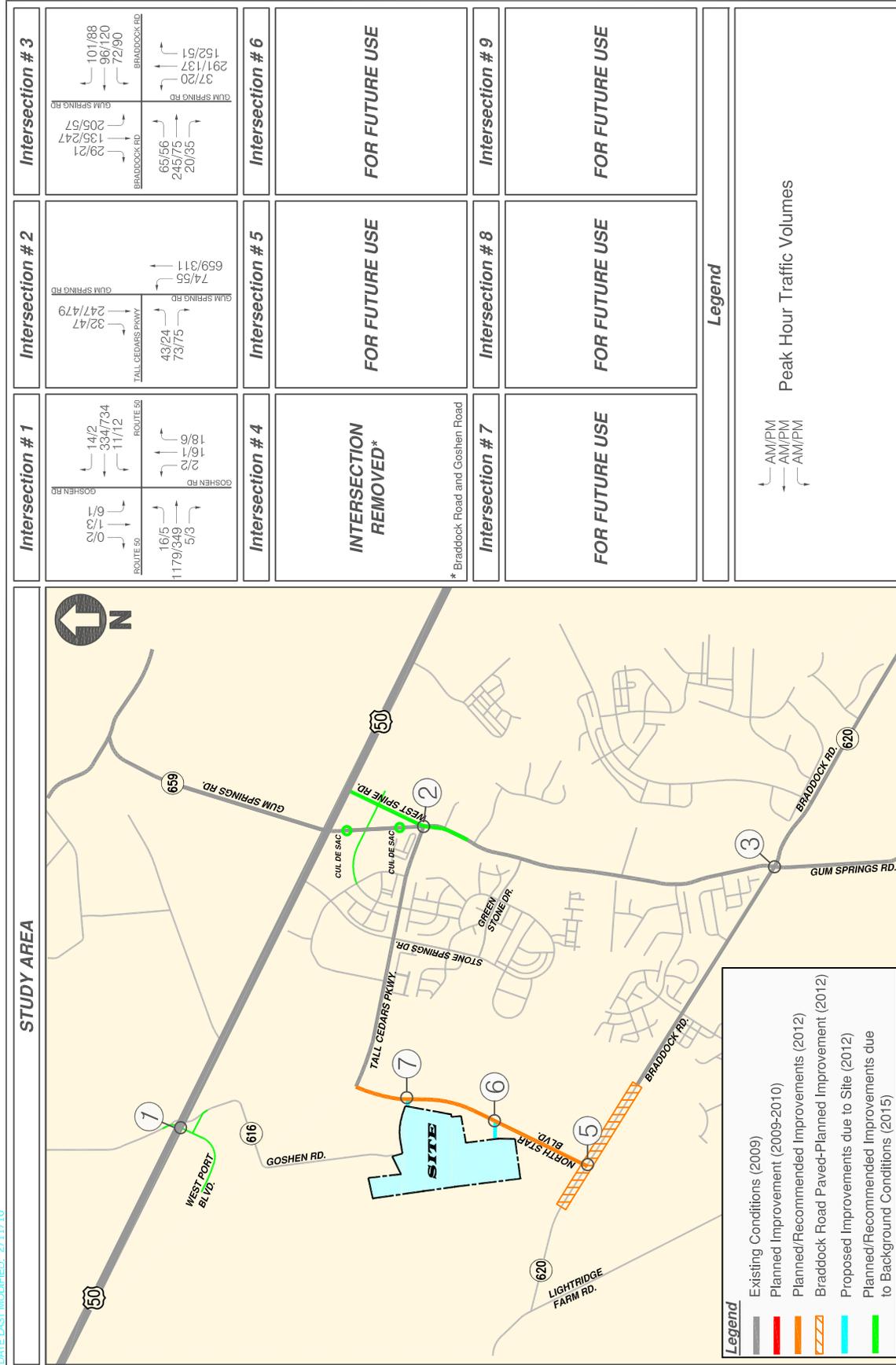


Figure 2
 Existing Traffic Volumes + Inherent Growth (2015)
 Elementary School Peak Hour (7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM)

FILE PATH: P:\21110\013\LOPS Goshen HS7\CAO
 DATE LAST MODIFIED: 2/11/10

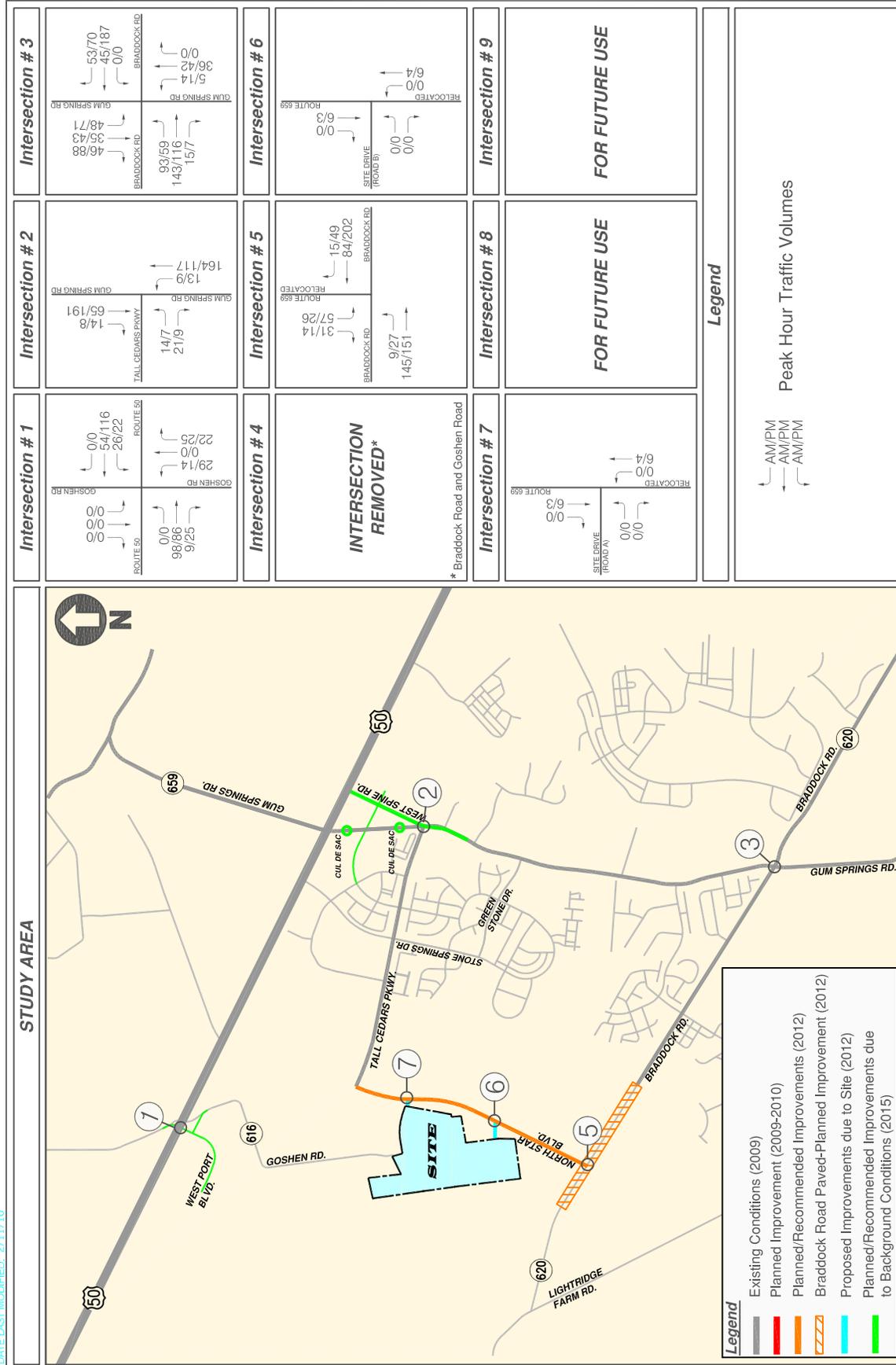


Figure 3
 Traffic Generated by Background Developments
 Elementary School Peak Hour (7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM)

FILE PATH: P:\21110\013\LOPS Goshen HS7\CAD
 DATE LAST MODIFIED: 2/11/10



FILE PATH: P:\21110\013\1\CPSS Goshen HS7\CAO
DATE LAST MODIFIED: 1/7/17/10

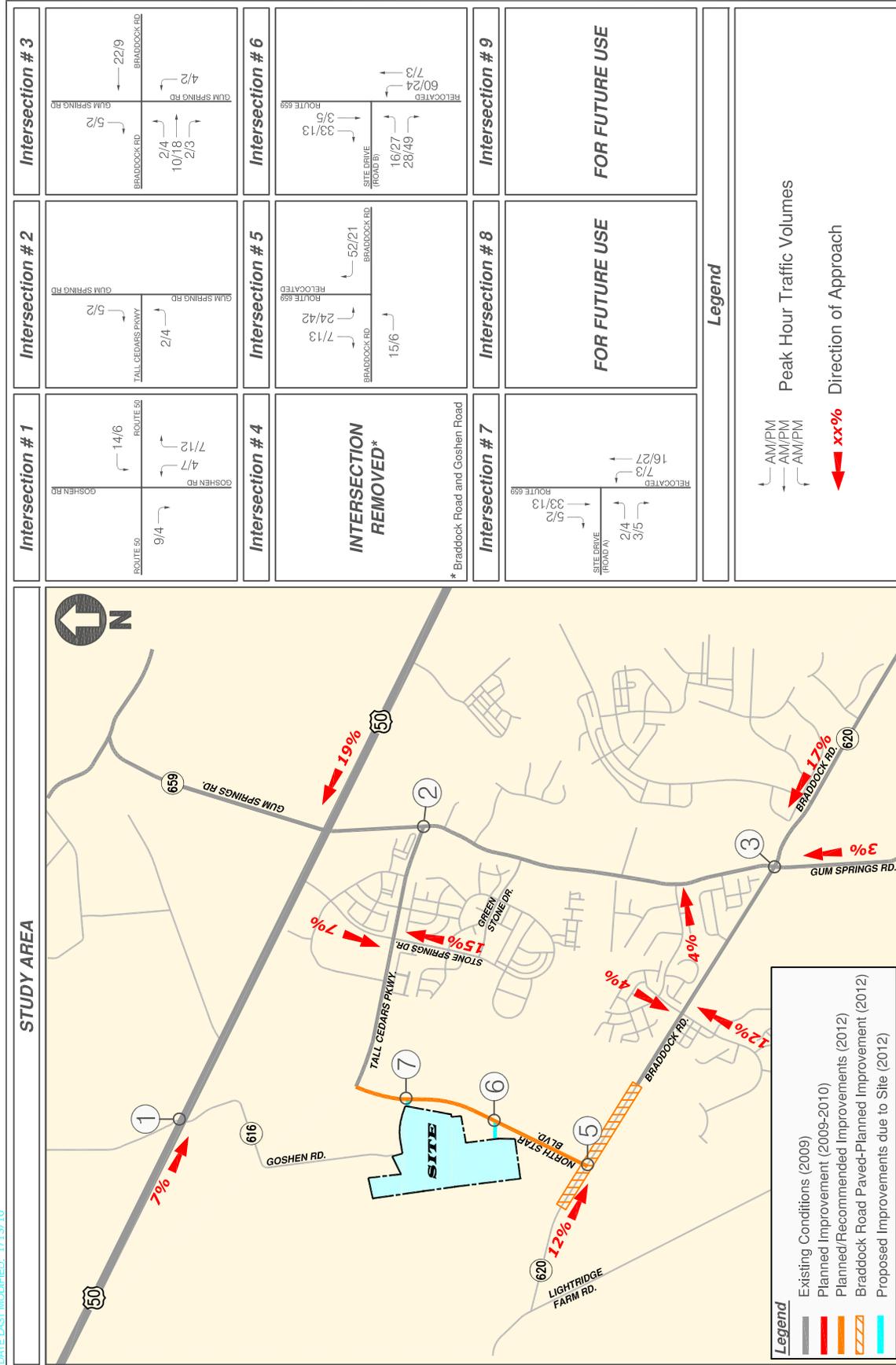


Figure 4
 Site Generated Traffic Volumes and Direction of Approach (2015)-High School Elementary School Peak Hour (7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM) Alternative 1: Mixed Feed



FILE PATH: P:\21110\013\LOPS Goshen HS7\CAO
DATE LAST MODIFIED: 2/11/10

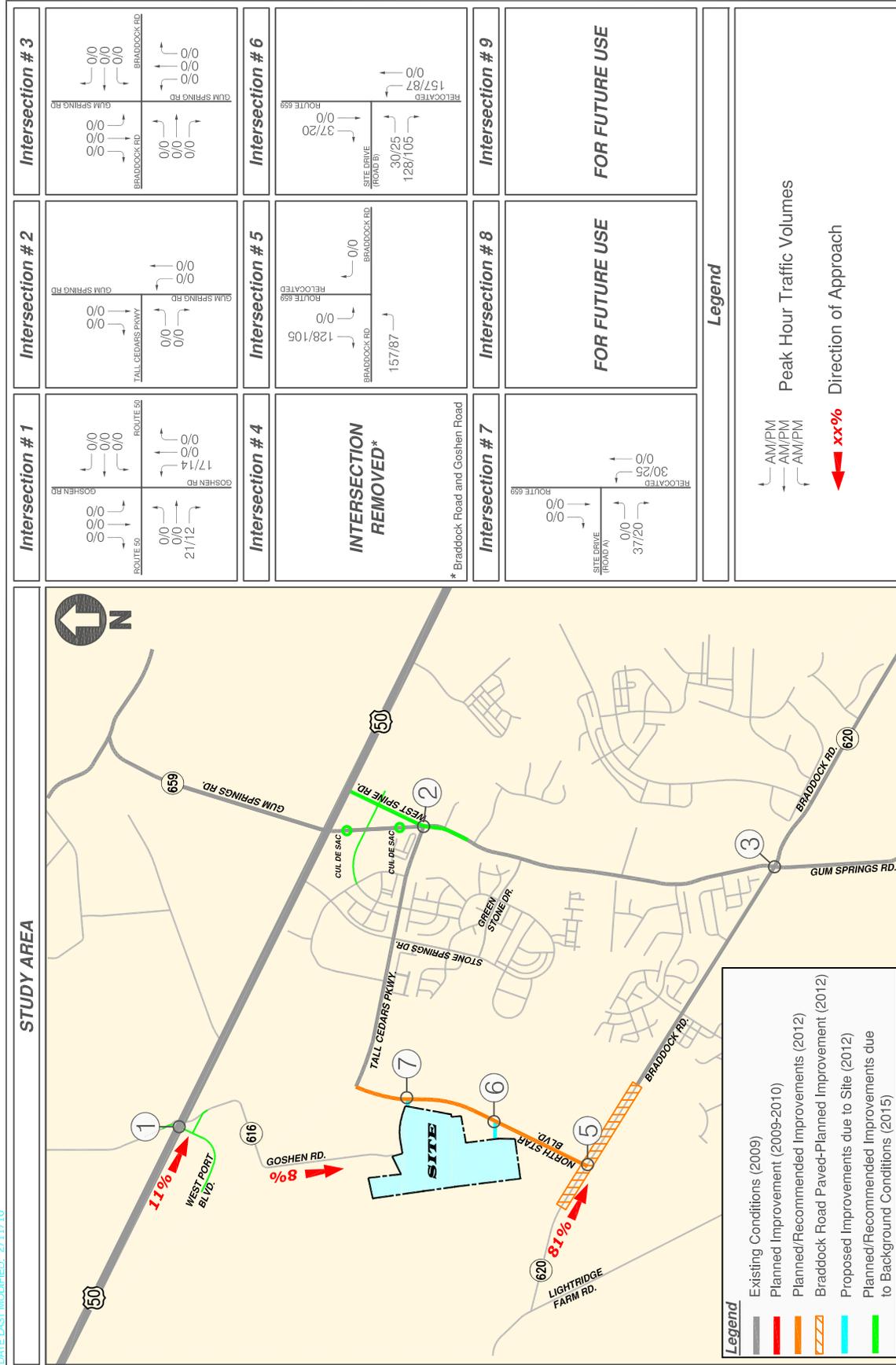


Figure 5
Site Generated Traffic Volumes and Direction of Approach (2015)-Elementary School
Elementary School Peak Hours
(7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM)



FILE PATH: P:\21110\013\LOPS Goshen HS7\CAD
DATE LAST MODIFIED: 2/11/10

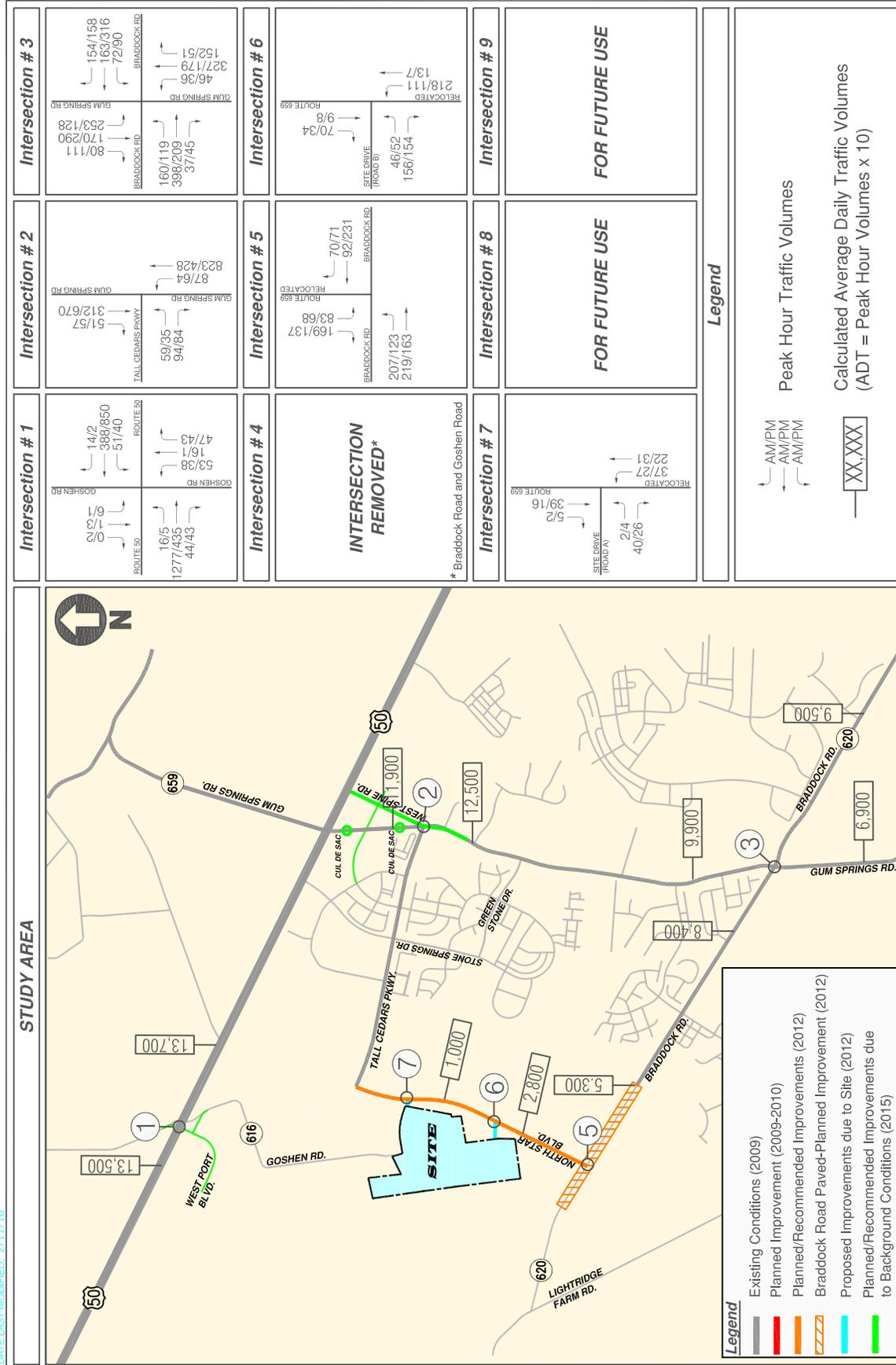


Figure 6
Future with Development Traffic Volumes (2015)
Elementary School Peak Hour (7:00 AM to 8:00 AM and 2:15 PM to 3:15 PM)
Alternative 1 : Mixed Feed

Appendix B: LCPS Field Data

Weekly Average	Daily Average	Time	Potomac Falls HS	Freedom HS	Loudoun County HS
1	4	12:00 AM	0	0	13
0	0	12:15 AM	0	0	0
0	0	12:30 AM	0	0	0
0	0	12:45 AM	0	0	0
1	0	01:00 AM	0	0	0
0	1	01:15 AM	0	3	0
0	0	01:30 AM	0	0	0
0	0	01:45 AM	0	0	0
0	0	02:00 AM	0	0	0
0	0	02:15 AM	0	0	0
0	0	02:30 AM	0	0	1
0	0	02:45 AM	0	0	0
0	0	03:00 AM	0	0	0
0	0	03:15 AM	0	0	0
0	0	03:30 AM	0	0	0
0	0	03:45 AM	0	0	0
0	0	04:00 AM	1	0	0
0	0	04:15 AM	1	0	0
1	2	04:30 AM	2	2	1
1	1	04:45 AM	3	1	0
2	1	05:00 AM	1	1	1
1	0	05:15 AM	0	0	0
2	2	05:30 AM	1	4	0
4	3	05:45 AM	6	2	0
5	3	06:00 AM	5	3	0
10	10	06:15 AM	5	14	12
10	13	06:30 AM	17	15	7
22	21	06:45 AM	22	29	13
28	38	07:00 AM	39	41	33
35	60	07:15 AM	35	51	94
41	63	07:30 AM	36	69	84
66	88	07:45 AM	91	90	84
101	140	08:00 AM	156	142	123
128	168	08:15 AM	181	183	141
220	276	08:30 AM	272	281	274
295	363	08:45 AM	367	325	397
64	77	09:00 AM	66	76	90
21	20	09:15 AM	19	13	28
16	17	09:30 AM	15	18	19
17	20	09:45 AM	26	16	17
13	13	10:00 AM	10	11	17
16	15	10:15 AM	16	13	17
23	25	10:30 AM	23	18	33
18	21	10:45 AM	15	16	31
18	23	11:00 AM	25	25	20
15	20	11:15 AM	10	16	33
17	20	11:30 AM	18	21	20
17	24	11:45 AM	19	17	35

Note: The Elementary School Peak Hours are from 7:00AM to 8:00 AM and are highlighted in yellow
The High School Peak Hours are from 8:00AM to 9:00 AM and are highlighted in green

Average Trips Generated by High School from 8:00AM to 9:00 AM = 745
Average Trips Generated by High School from 7:00AM to 8:00 AM = 171

Percentage of High School Traffic During Elementary School Peak Hours (AM) = 23%

Weekly Average	Daily Average	Time	Potomac Falls HS	Freedom HS	Loudoun County HS
19	27	12:00 PM	24	26	31
22	27	12:15 PM	20	25	37
19	26	12:30 PM	18	31	30
15	15	12:45 PM	7	15	23
15	14	01:00 PM	12	12	19
17	17	01:15 PM	15	13	24
22	23	01:30 PM	15	26	29
35	37	01:45 PM	53	35	22
30	30	02:00 PM	37	33	20
66	72	02:15 PM	77	92	46
21	19	02:30 PM	28	11	18
20	28	02:45 PM	25	25	35
26	32	03:00 PM	30	27	38
33	40	03:15 PM	21	48	52
52	59	03:30 PM	53	63	61
166	200	03:45 PM	190	201	208
150	169	04:00 PM	216	156	136
59	74	04:15 PM	102	70	50
42	47	04:30 PM	61	53	27
54	42	04:45 PM	58	49	18
60	57	05:00 PM	65	68	37
54	58	05:15 PM	84	38	53
58	56	05:30 PM	78	49	42
72	82	05:45 PM	114	58	74
81	106	06:00 PM	133	130	56
78	98	06:15 PM	100	135	58
64	65	06:30 PM	89	57	50
57	51	06:45 PM	61	49	42
56	47	07:00 PM	48	48	44
61	56	07:15 PM	95	34	40
51	51	07:30 PM	61	72	20
43	45	07:45 PM	59	68	7
38	48	08:00 PM	60	77	6
34	38	08:15 PM	63	41	9
28	29	08:30 PM	59	10	18
35	53	08:45 PM	94	3	61
36	42	09:00 PM	112	8	5
34	28	09:15 PM	24	58	3
27	22	09:30 PM	2	64	1
36	16	09:45 PM	23	21	3
34	12	10:00 PM	19	15	3
10	3	10:15 PM	9	0	0
3	1	10:30 PM	0	0	2

Note: The Elementary School Peak Hours are from 2:15 PM to 3:15 PM and are highlighted in yellow
The High School Peak Hours are from 3:30 PM to 4:30 PM and are highlighted in green

Average Trips Generated by High School from 3:30 PM to 4:30 PM =	428
Average Trips Generated by High School from 2:15AM to 3:15 AM =	133

Percentage of High School Traffic During Elementary School Peak Hours (PM) = 31%

* Information based on ATR Counts collected at Potomac High School, Loudoun County High School and Freedom High School from April 20th-29th, 2009