Appendix A

Agency Comments and Responses

VDOT Chapter 527 and Loudoun County OTS Traffic Study Scoping Form

WELLS + ASSOCIATES

MEMORANDUM

TO: Packie E. Crown
Bowman Consulting Group

FROM: Michael J. Workosky, PTP, TOPS
Michael J. Buelow, E.I.T.
Wells + Associates, Inc

DATE: October 26, 2009

SUBJECT: Catholic Diocese of Arlington Loudoun Property (Corpus Christi Parish)
Response to OTS and VDOT Comments;
Loudoun County, Virginia

Introduction

This memorandum summarizes the responses to the Loudoun County Office of Transportation Services (OTS) and Virginia Department of Transportation (VDOT) comments related to the Catholic Diocese of Arlington (CDA) Loudoun Property (Corpus Christi Parish). The property is located on the east side of Goshen Road (VA Route 616) and south of John Mosby Highway (U.S. Route 50) in the Dulles South region of Loudoun County, Virginia.

The comments provided by OTS and VDOT are related to the Catholic Diocese of Arlington Loudoun Property Traffic Impact Analysis, dated February 24, 2009 and are summarized below:

OTS Comments and Responses (July 6, 2009):

Transportation Comments

1. Regarding the February 24, 2009 traffic study:

a. Weekday daily (ADT) trip generation figures should be provided for the church and school uses.

Response a: The ADT's are provided in the updated traffic study.

b. Further explanation/clarification is necessary regarding the rationale for excluding existing Sunday daily (ADT) volumes from the report. The study (pg. 19) states that calculating these volumes would be "difficult".

Response b: The accepted method for calculating the Average Daily Traffic (ADT) for weekday conditions applies a 10 percent "k" factor to the two-way, PM peak hour volume. Since existing ADT information for Sundays is not available, it is unknown if 10 percent would be the

appropriate k factor for the Sunday ADT calculation. Therefore, these volumes were excluded in the updated traffic report. Further explanation is provided in the updated traffic study.

c. Further explanation/clarification is necessary regarding the methodology used to factor/convert the weekday PM peak hour for school trips to weekday PM peak hour for commuter trips. The traffic impact of the school during the PM peak hour should be indicated.

Response c: The ITE Trip Generation Manual does not provide rates for trips generated by a K-8 school during the weekday PM commuter peak hour. Therefore, Wells + Associates derived a rate by comparing similar uses and data collected by W+A, and is indicated in the traffic study for PM peak hour conditions. Further clarification and derivation of this rate is included as an appendix in the updated traffic study.

d. The study (pg. 13) indicates that a traffic signal warrant study is currently under VDOT review for a new signal at the intersection of Route 50 and the future Westport Boulevard. OTS is not in receipt of this study and it should be provided for review under separate cover. It is noted that the signal warrant analysis included in the traffic study (Appendix V, provided as Attachment 24) is a summary table based on Figure 2-10 of the Manual of Traffic Control Devices (MUTCD) warrant study that is required by VDOT for installation of traffic signal on existing roads.

Response d: Since submission and review of the traffic signal warrant study referenced above could not be verified, this reference has been deleted from the traffic report.

e. The traffic study assumes that all off-site road improvements between the site and Route 50 will be constructed "by others" as part of the adjacent Westport and Marrwood subdivisions. OTS staff notes that both of these developments have only received preliminary subdivision approvals and therefore it is not assured that these sites will be developed as assumed.

Response e: The phase one improvements assumed the extension of Marrwood Drive to Goshen Ridge Drive to serve the property. The updated traffic study continues to assume that Phase 2 of the project will move forward only after the planned roadway improvements by Westport and others made.

f. Further explanation/clarification is necessary regarding the methodology used to determine the distribution of site-generated trips, particularly with respect to the differences assumed between Sunday and weekday trips.

Response f: Trip distributions for the church were determined in conjunction with the CDA based on the anticipated parish boundaries. The current boundaries are as follows:

> ***Including the Southwestern portion of Loudoun County beginning at New Rd. (Route 600) and Bull Run, then follow along Loudoun County Line Southeast toward the Fairfax County line. Then north along Fairfax County Line, West along John S. Mosby Highway (U.S. Route 50), Southwest on Lenah Road (Route 600), West on New Road (Route 600), returning to the Loudoun County Line and Bull Run junction.***

Subsequent to a review of these boundaries, W+A used engineering judgment and knowledge of the area to determine the distributions of church based site generated traffic. The weekday distributions reflect those presented in the approved Arcola (Boyd) School traffic report since they are needed to analyze the AM and PM peak hours.

g. The traffic study references the future extension of Marrwood Place as connecting with the Stone Ridge development. This is true only as far east as Route 659 Relocated (Northstar Boulevard) as the pending Stone Ridge rezoning application (ZMAP 2006-0011) proposes to relocate the roadway on the east side of Northstar Boulevard (Millstream Drive) to turn south and connect with Tall Cedars Parkway (in order to avoid a major floodplain crossing). The traffic study (and the vicinity map on the cover sheet of the plan set) should be revised to reflect this scenario.

Response g: Acknowledged. The previously prepared and updated traffic study does not assume the future extension of Marrwood Drive to Northstar Boulevard. The text of the report has been modified to reflect and clarify this comment. Plan set revisions will be addressed by the applicant.

2. OTS recommends that the traffic signal and associated turn lanes at the intersection of Route 50 and Westport Boulevard (Intersection 1) are installed and operational prior to occupancy of the church (the Applicant should be responsible for the traffic signal warrant study referenced in Comment #ld above should the study not be previously completed by others). Such intersection improvements would serve to benefit the safe and orderly operation of the road network, including traffic generated by the church use, and would be more consistent with driver expectations on a four-lane divided roadway such as Route 50 than would the presence of traffic control personnel. Signalization and related road improvements would also allow for consistent traffic control during all church events, including services at times other than on Sundays, which may generate comparable traffic volumes as Sunday services."

Response 2: The applicant proposes to reduce the phase one (2012) development size of the church from 1,200 seats to 335 seats. This reduction dramatically reduces the impact to the U.S. Route 50/Goshen Road/Fleetwood Drive intersection, and can be adequately accommodated by the existing road network. The future Phase 2 development provides for the expansion of the church to 1,200 seats including a parish center and the construction of a 200-student school and convent/rectory by 2015. The buildout of the site will occur subsequent to improvements made by others that include the realignment of the intersection and installation of turn lanes and a new traffic signal. The construction of Phase 2 is also dependant on the financial ability of the parish (CDA) to move forward with the construction.

3. Should it be determined that traffic control personnel be utilized at the intersection of Route 50 and existing Goshen Road (Intersection 1) on an interim basis until ultimate road improvements including a traffic signal are in place, OTS recommends that only sworn law enforcement personnel be utilized to provide such traffic control functions. If this option is pursued, discussions with the Loudoun County Sherriff's Office should be initiated to determine its position on this issue, including the extent/duration to which traffic control functions should be provided.

Response 3: The reduction in the phase one (2012) development size of the church from 1,200 seats to 335 seats reduces the impact to the U.S. Route 50/Goshen Road/Fleetwood Drive intersection and can be adequately accommodated by the existing road network. Thus, temporary traffic control personnel are no longer suggested or required.

4. The Applicant should coordinate with other parties in the area (i.e., the developers of the Westport and Marrwood subdivisions) to effect, to the extent possible, the construction of the ultimate planned road network (i.e., Westport Boulevard and realigned Goshen Road (Marrwood Place)) between Route 50 and the site prior to the time the church opens for use.

Regardless of the scope of implementation of these ultimate improvements, the traffic signal referenced in Comment #2 above (at Intersection 1) should be configured to accommodate the ultimate alignment of the road network (i.e., Westport Boulevard) with minimal modifications.

Response 4: Coordination with other developers in the area is ongoing to insure appropriate configuration and phasing of road improvements. Notwithstanding as indicated above, the applicant has revised the traffic analysis to determine the level of traffic that can be accommodated by the existing road network. The applicant is willing to limit Phase 1 development accordingly.

5. The existing construction plan approval for Marrwood Place (CPAP 2008-0106) extends south to the proposed northern site entrance (opposite future Goshen Ridge Place). Construction of Marrwood Place to the eastern property line, to include a paved temporary cul-de-sac, is necessary to be in place and open to traffic prior to occupancy of the church uses.

Response 5: See applicant's response letter.

6. A sidewalk along the site frontage should be depicted on the SPEX plat and provided at the time of construction of Marrwood Place and/or site development. The sidewalk should be consistent with the five (5)-foot sidewalk depicted along the west side of Marrwood Place in CPAP 2008-01 06 as well as the sidewalk/sidewalk reservation area conditioned as part of the approved development for The Boyd School (SPEX 2008-0021/STPL 2008- 0051).

Response 6: The applicant has revised the SPEX Plat to show the location of the sidewalk along their property frontage. See applicant's response letter.

7. Marked crosswalks across both site entrances and Marrwood Place should be provided at the time of construction of Marrwood Place and/or site development.

Response 7: As requested, the SPEX Plat has been revised to show marked crosswalks. See applicant's response letter.

8. Discussions regarding a fair-share contribution toward the future extension of Marrwood Drive to Northstar Boulevard and/or other transportation improvements are necessary. OTS staff is available to meet with the Applicant regarding this matter.

Response 8: See applicant's response letter.

9. OTS staff requests to be included in any meetings between VDOT and the Applicant regarding these applications.

Response 9: Acknowledged.

<u>VDOT Comments (John Bassett, June 18, 2009)</u>

10. At a minimum, (Future) Marwood Drive should be constructed to the easterly property line.

Response 10: See applicant's response letter.

11. Related to comment # 3: Prefer that (Future) Marrwood Drive have right of way dedicated and be designed and constructed (or equivalent monetary contribution provided) to Future Route 659 Relocated.

Response 11: See applicant's response letter.

12. This applicant's Traffic Impact Analysis (TIA) assumes that improvements at Route 50 (turn lanes and traffic signalization) to be in place "by others". Should these improvements not be in-place by the opening of the church then this applicant should be responsible for design/installation/construction of same, specifically,:

    (a) Intersection of Route 50 and Goshen Road - Traffic signalization. This is to include warrant analysis.
    (b) Intersection of Route 50 and Goshen Road – Add westbound left turn lane
    (c) Intersection of Route 50 and Goshen Road – Add eastbound right turn lane.

Response 12: Construction of Phase 2 of the site development is not proposed to be occupied prior to the improvements proffered by Westport and/or other adjacent development projects.

13. Sufficient on-site parking should be provided to prevent overflow parking problems on (Future) Marrwood Drive.

Response 13: The site has been designed to provide parking that meets or exceeds the County's zoning ordinance requirements. See applicant's response letter.

14. Proposed Emergency Access entrance should be properly signed and controlled with bollards & chain or gated, etc.

Response 14: The applicant will work with fire and rescue to provide traffic controls for the emergency access. See applicant's response letter.

15. Is (Future) Marrwood Drive of sufficient capacity (typical section) to support the projected site generated trip volume?

Response 15: The projected weekday ADT is expected to be approximately 350 vehicles. This volume of daily traffic can be adequately accommodated by the proposed typical road section that matches the existing Goshen Road section to the west.

16. For illustrative/informational purposes, please draw and clearly label the (approximate) alignment of Future Route 659 Relocated onto plan sheets 2 and/or 3 of 3.

Response 16: See attachment to the applicant's response letter.

17. Depending upon the resolution to some of the above noted comments, we recommend the County consider pursuing a monetary contribution from this applicant to be applied to area transportation improvements, especially if the Route 50 improvements are done "by others" and/or to be applied towards extending (Future) Marrwood Drive to Future Relocated Route 659 and/or the improvements (turn lanes and possibly traffic signalization) that will/may be required at that street connection.

Response 17: See applicant's response letter.

18. We have concerns regarding the applicant's proposal to use traffic control personnel on Route 50 in the interim period until the intersection improvements/traffic signalization are in place at the Route 50/Goshen Road intersection. Given the nature of Route 50 in this area, i.e., high traffic volumes including fairly high percentage of trucks, relatively high operation speeds and violation of driver expectancy we do not endorse this concept. Also, a field review revealed there to be a potential vertical sight distance problem looking to the west at oncoming eastbound Route 50 traffic. Given these factors, we reiterate comment # 5 (#12 in this document) above due to safety as well as operational aspects.

Response 18: The reduction in the phase one (2012) development size of the church from 1,200 seats to 335 seats reduces the impact to the U.S. Route 50/Goshen Road/Fleetwood Drive intersection and can be adequately accommodated by the existing road network. Thus, temporary traffic control personnel are no longer suggested or required.

<u>Additional VDOT Comments (Cina Dabestani)</u>

19. The Missing Legends on figures 2-2, 2-4, and 2-5."

Response 19: The legends associated with the above figures are part of larger Loudoun County adopted maps and are provided in the updated traffic report.

20. This study does not appear to take into consideration that US 50 is a heavy vehicle route and recent data shows that 15% of traffic is made up of heavy trucks.

Response 20: The weekday analyses reflect the recommended 15 percent heavy vehicle factor for through traffic on U.S. Route 50.

21. Assuming 2% regional growth until 2015 is not documented as how this study has arrived at such number. Missing supporting documentation.

Response 21: The 2 percent regional growth rate has been utilized in the recently approved Arcola School (Boyd School) study and is in addition to 20 other background developments. The 2 percent growth rate is also illustrated on the VDOT Chapter 527 Scoping form included in the appendix of the updated traffic study.

It is noted that a review of the traffic forecasts indicates that the aggregate growth rate for U.S. Route 50, when accounting for both regional growth and background development, is approximately 8.0 percent per year.

<u>Additional VDOT Comments (Alex Faghri)</u>

22. Please verify that the southernmost access point to the site has sufficient sight distance. Include a discussion in the TIA regarding sight distance at access points.

Response 22: The updated TIA includes discussion on site distance as it relates to the site entrances. In addition, sight distance of the access points has been addressed on the revised SPEX Plat.

23. Trip distribution at the two access points can be viewed differently than what has been indicated in the study. Majority of vehicles may use the northern most access point to get to the site. In

this case a left turn lane is warranted. Please provide left turn lane warrant assuming majority of the vehicles accessing the site would use the first access point.

Response 23: The updated study distributes traffic to the site entrances based on the parking layout. It appears that the majority of traffic would utilize the northern most entrance, and is reflected in the updated report. A review of the left turn lane warrant does not indicate the need for a separate turn lane, as documented in the updated traffic study.

24. Synchro analysis show 95th percentile queue lengths in 2015 Total Future Sunday operates beyond capacity for the westbound left turn from Rt. 50 onto southbound Goshen Road. The left turn lane and taper should be long enough to accommodate traffic generated by the site. Please recommend Rt. 50 WBL expansion as part of your recommended improvements.

Response 24: The conceptual design plan indicates that the westbound left turn lane is planned to be extended to provide approximately 300 feet of storage as part of the realignment of Route 50/Westport Boulevard /Goshen Road intersection by the Westport development. The revised TIA indicates that this length of turn lane would adequately accommodate the anticipated queue with the buildout of the parish and school uses.

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

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PRE-SCOPE OF WORK MEETING FORM

Information on the Project
Traffic Impact Analysis Base Assumptions

The locality will need to send this form to the project applicant at least two (2) weeks prior to the scheduled scope of work meeting on the proposed project. The applicant is responsible for having this form completed and returned to VDOT and the locality no less than three (3) business days prior to the Meeting. If a completed form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information	
Consultant Name: Tele: E-mail:	**Wells & Associates** Michael J Workosky – mjworkosky@mjwells.com Phone: (703) 917-6620
Developer/Owner Name: Tele: E-mail:	**Catholic Diocese of Arlington** J. Reid Herlihy – j.herlihy@arlingtondiocese.com **Bowman Consulting Group** Packie E. Crown - pcrown@bowmanconsulting.com

Project Information				
Project Name:	Catholic Diocese of Arlington (CDA) Property			
Project Location: (Attach regional and site specific location map)	The subject site is to be located west of future Route 659 Relocated. Access is proposed to be provided via the planned extension of Marrwood Drive east of existing Goshen Road. Specific driveway locations will provided as the site plan is further developed.			
Project Description: Including type of application (rezoning, subdivision, and site plan), acreage, business square ft, number of dwelling units, access location, etc. Attach additional sheet if necessary)	The Applicant, Catholic Diocese of Arlington, is submitting a Special Exception Application to Loudoun County for the development of the 17.9-acre site. The (approximate) 17.9-acre (779,727 Square Feet) site is currently vacant. The site is currently zoned TR-1. The Applicant proposes a special exception to allow for a 1,200-seat parish and 200-student Kindergarten through grade 8 elementary school. This pre-scope is provided in order to adhere to the 250 peak hour trip threshold on Sunday. The site is estimated to generate 744 peak hour trips on Sunday. This document does not act as an agreement to adhere to VDOT Chapter 527 requirements of weekday conditions, as the site is estimated to generate 191 AM net peak hour trips and 143 PM net new peak hour trips as shown on the attached table.			
Locality/County:	Loudoun County, Virginia			
Proposed Use: (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ■	Mixed Use ☐	Other ☐
See Trip Generation Comparison,	Residential # of Units: _____ **Commercial Use**: Church		OTHER:	

Attachment I.	Private School K-8 ITE LU Code(s): 560 & 534	

Traffic Impact Analysis Assumptions			
Study Period	Existing Year: 2008	Build-out Year: 2015	Design Year: N/A

Study Area Boundaries **(Attachment II)**	**North**: John Mosby Highway (U.S. Route 50)	**South**: Braddock Road (Route 620)
	West: Goshen Road (Future Westport Boulevard)	**East:** Gum Springs Road (Route 659 Relocated)
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	The background developments assumed to be considered in the report will be consistent with previously approved studies in the area. Wells + Associates will review the approved developments in the area and a pace at which they will be developed.	
Consistency With Comprehensive Plan	The proposed development program is in accordance with the recommendations of the Comprehensive Plan.	
Available Traffic Data (Historical, forecasts)	VDOT 2007 Annual Average Daily Traffic Counts: **John Mosby Highway (U.S. Route 50)** – (Route 15 – Pinebrook Rd.) – 20,000 vehicles per day (vpd).	

Trip Distribution (Attach sketch)	Road Name: **Gum Springs Road (Route 659)**	**N 5%**	**S 8%**	E %	W %
SEE ATTACHMENT II	Road Name: **John Mosby Highway (U.S. Route 50)**	N %	S %	**E 60%**	**W 10%**
	Road Name: **Braddock Road**	N %	S 15%	**E 15%**	**W 2%**
	Road Name:	N %	S 5%	E %	W %

Annual Vehicle Trip Growth Rate:	2.0% Annual Growth	Peak Period for Study (circle all that apply)	**Sunday peak hour of generator based on traffic counts**

Study Intersections and/or Road Segments (Attach additional sheets as necessary)	Sunday Study Intersections 1. Route 50/Goshen Road 2. Route 50/Gum Springs Road 3. Route 50/Stone Springs Boulevard 4. Braddock Road/Gum Springs Road 5. Braddock Road/Goshen Road 6. Goshen Road (Westport Boulevard)/Relocated Goshen Road. 7. Goshen Road/Marrwood Drive (future). 8. Marrwood Drive/Site Entrances (future).	
Trip Adjustment Factors	Internal allowance: ☐ Yes ☐ No Reduction: _____% trips	Pass-by allowance: ☐ Yes ■ No Reduction: _____% trips
Software Methodology	■ **Synchro** ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☐ Other	
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Synchro, version 7 will be used for existing and future analyses.	
Improvement(s) Assumed or to be Considered	- Realignment of Goshen Road south of U.S. Route 50 (Westport Boulevard). Existing Goshen Road would be truncated and intersect with Westport Boulevard approximately 350 feet south of the U.S. Route 50 intersection. - Install new traffic signal at the Goshen Road/U.S. Route 50 intersection. (It is noted that a traffic signal warrant study was prepared by Wells + Associates in conjunction with the Westport property and was submitted to Virginia Department of Transportation for review). - A northbound right turn lane is proposed to be installed by Westport at Westport Boulevard and U.S. Route 50. - Additional improvements to Goshen Road are planned to be installed by Marrwood and assumed to be in place by 2015. These improvements include the following: o Realignment of Goshen Road to eliminate the existing severe curve at the southwest corner of the Arcola School site. o Realignment of the Arcola School's southern driveway to create a four-way intersection at Goshen Road/Marrwood Drive.	
Plan Submission	☐ Master Development Plan (MDP) ■ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type	
Additional Issues to be addressed	☐ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☐ Intersection(s) ☐ TDM Measures ☐ Other _____	

NOTES on ASSUMPTIONS: _This VDOT Scoping form proposes to study the above area based on the number of trips that the site generates during the Sunday peak hour. The proposed 1,200-seat parish is estimated to generate 744 Sunday peak hour trips. The traffic study that is produced will address AM and PM peak hour analyses for the John Mosby Highway (U.S. Route 50)/Goshen Road/Fleetwood Road intersection only as identified in the attached traffic scoping agreement with Loudoun County OTS. A section will be included that addresses 527 requirements for Sunday. A compliance package will be provided for weekday conditions, if necessary.

SIGNED: DATE: November 21, 2008

Applicant or Consultant

PRINT NAME: Michael J. Workosky
Applicant or Consultant

AGREED: _____ DATE: _____
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

SIGNED: _____ DATE: _____
Local Government Representative

PRINT NAME: _____
Local Government Representative

Attachement I
Catholic Diocese of Arlington - Loudoun Property
Site Trip Generation Analysis(1)

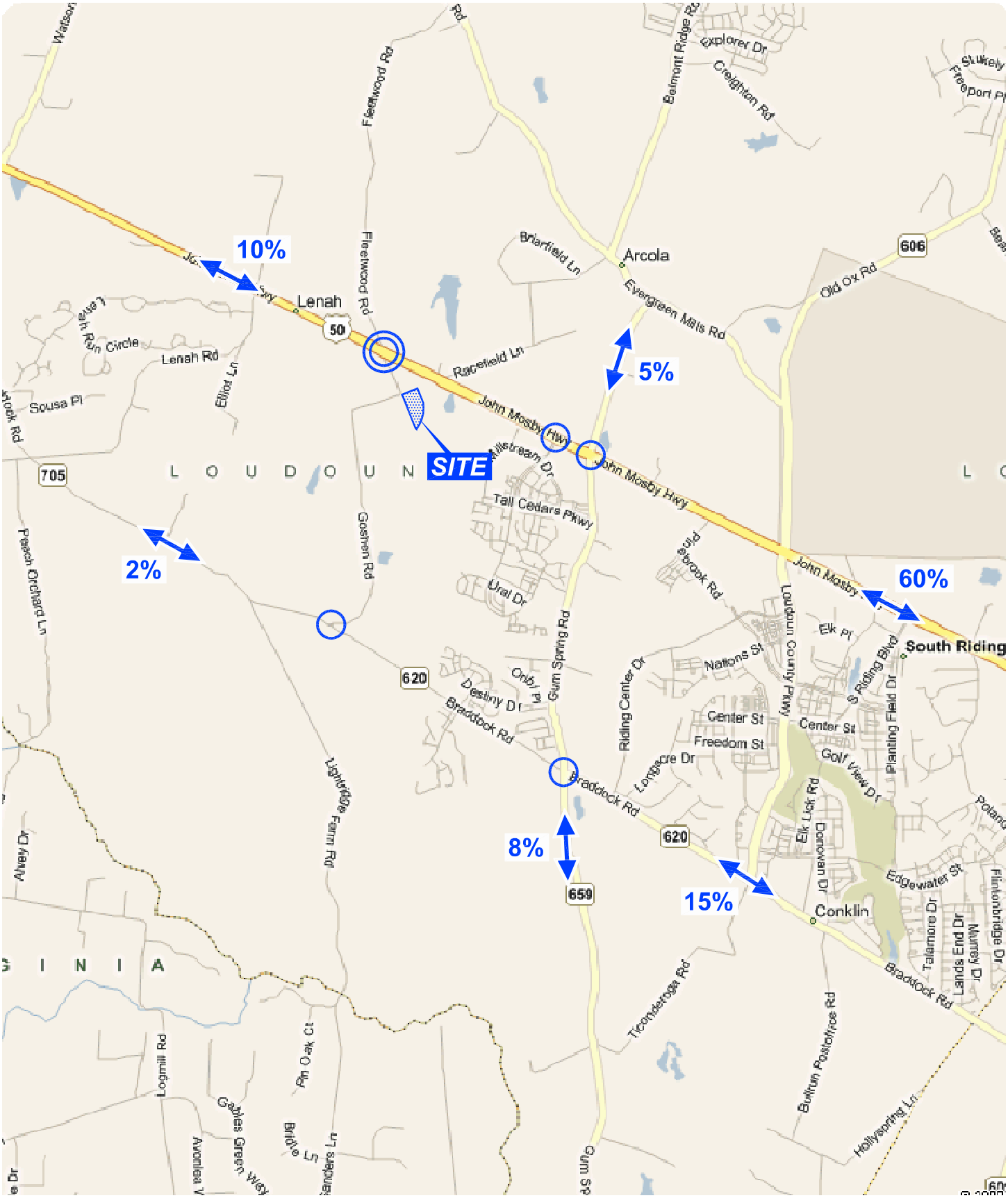
Land Use	ITE Land Use Code	Size	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Sunday Peak Hour In	Sunday Peak Hour Out	Sunday Peak Hour Total
Approved Development												
Single Family Detached(2)	210	19	D.U.	7	20	27	16	9	25	11	10	21
Proposed Development												
Church(3)	560	58,000	SF	23	19	42	20	18	38	387	357	744
Private School K-8	534	200	Students	97	79	176	61	69	130	-	-	-
Total				120	98	218	81	87	168	387	357	744
NET NEW TRIPS (Approved vs. Proposed)				**113**	**78**	**191**	**65**	**78**	**143**	**376**	**347**	**723**

Notes:

(1) Traffic estimates based on Institute of Transportation Engineers (ITE) Trip Generation, Seventh Edition.

(2) Peak Hour of Generator

(2) Based on Equivalent 1,200-seat Parish.



Attachment II
Site Locations and Study Intersections

○ Sunday Peak Study Intersections
◎ Sunday and Weekday Study Intersections

North

JCP

Catholic Diocese of Arlington
Loudoun County, Virginia

A-13
Wells + Associates, Inc.

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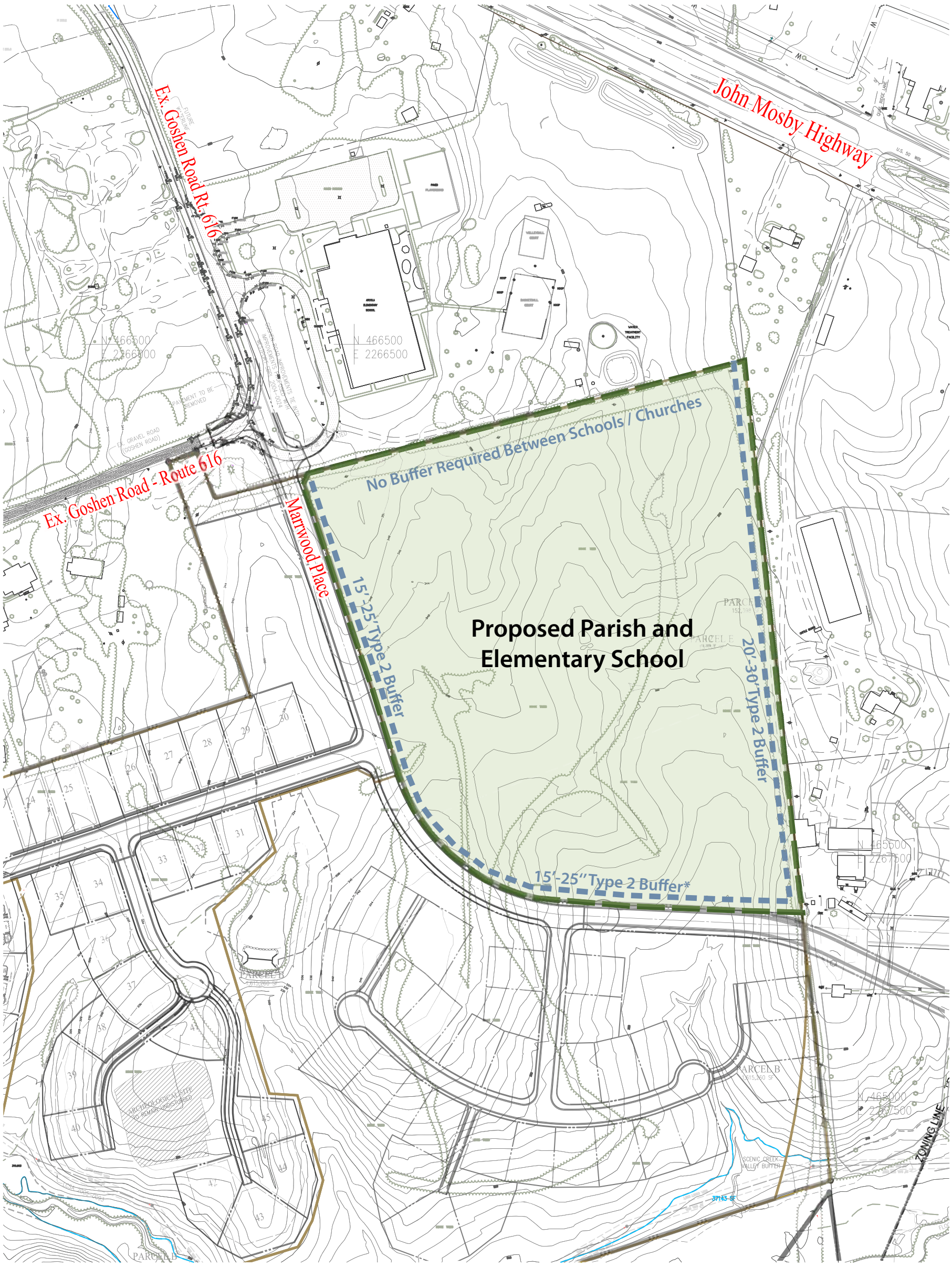


*Southern buffer, previously a 20'-30' Type 2 Buffer, increases in size due to the change in use south of Tall Cedars Parkway to residential.

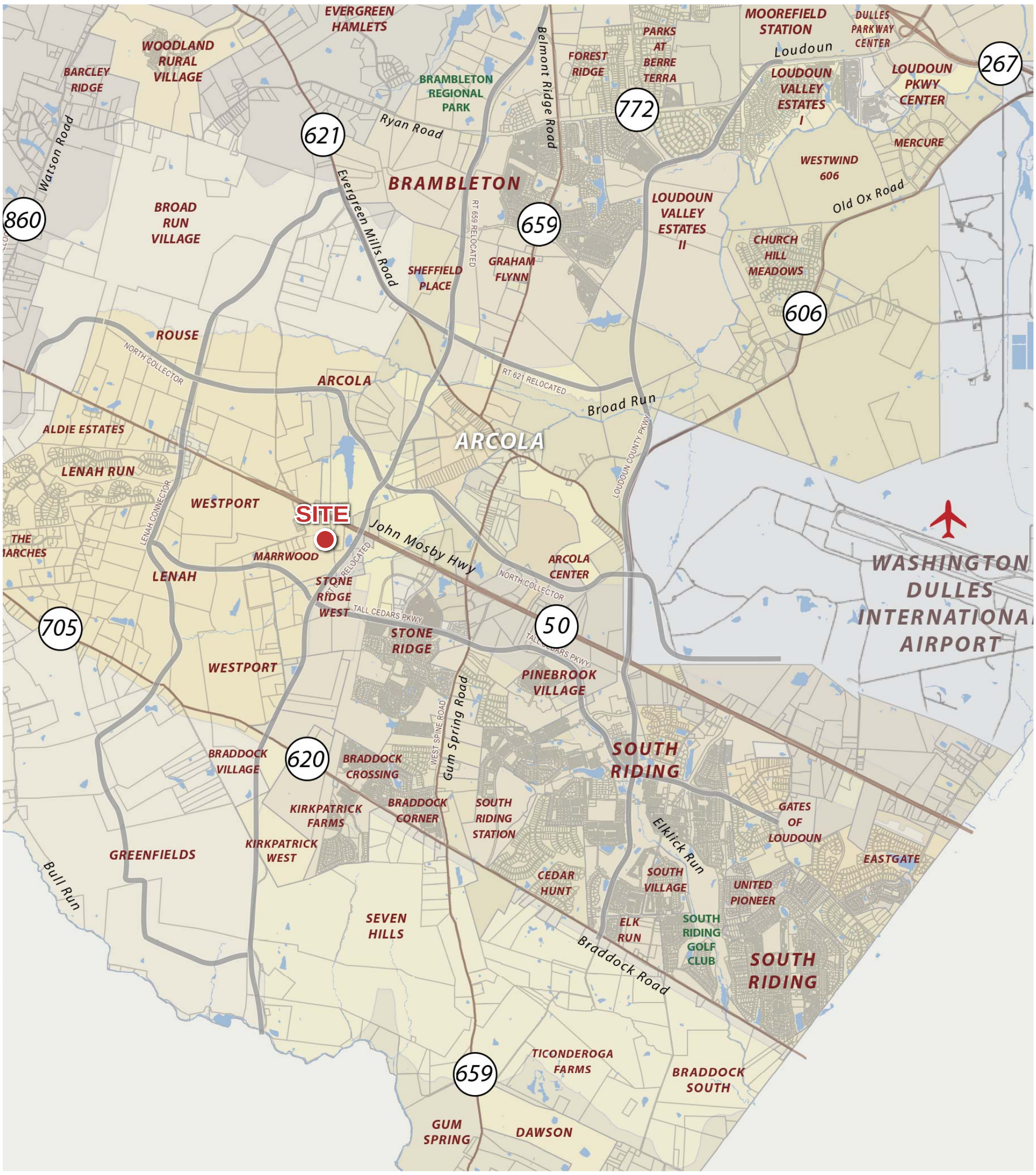
Area to Property Line and Right of Way: 17.9 Acres

Date: October, 2008
Scale: 1" = 200'

Proposed Catholic Parish and Elementary School Site

Exhibit

Bowman CONSULTING



Date: October, 2008
Scale: Not to scale

Proposed Catholic Parish and Elementary School Site

Bowman CONSULTING

Vicinity Map

Loudoun County Virginia
Office of Transportation Services

Application Name: Catholic Diocese of Arlington
Application Type: Special Exception
Attendees: George Phillips

Date: 10/30/08

Pauline Crowin
Mike Horkosky

(1) **Study Area**: Roadways internal or adjacent to the development site shall be included in the traffic study. The study area should be defined at the scoping meeting and as a guideline should include other external roads to the extent that the project's generated traffic is anticipated to exceed 10 percent of the road's current/existing traffic volumes (at the time of application).

Comments: Will provide South of Route 50, West of North Star Boulevard, accessed off of Goshen Road / Marrwood Place

See Arcola School Study by Wells dated May ~~20~~ 29, 2008

(2) **Traffic Count Locations**: Traffic counts are required on the adjacent roads, the adjacent intersections beyond the project's frontage on adjacent roads in the study area. The AM/PM peak period traffic counts shall not be more than twelve (12) months old at the time of the application submission. Twenty-four (24) hour weekday traffic counts are also required for roadway segments.

Comments: Will provide Include counts/analysis of all site intersections, Route 50 / Goshen Road, Goshen Road / Marrwood Place

(3) **Trip Generation**: As a general guide to vehicle trip generation, the latest edition of the Institute of Transportation Engineer's (I.T.E.). Trip Generation Report shall be used. These rates may be supplemented by additional information provided by the County. If the applicant chooses to use different rates, they shall be documented and agreed to at the scoping meeting prior to their use in the traffic analyses. Primary trip reductions associated with passby trips and methodologies for trip reductions associated with passby trips shall be discussed and agreed upon at the scoping meeting.

Comments: Will provide. Use ITE 7th Edition rates for appropriate Church and School facilities (K-8)
Include a trip generation comparison with the existing approved use. Based on the traffic volumes, ~~the~~ the 527 requirements are not required.

(4) **Traffic Volume Projections**: The traffic study shall include an agreed upon build out year and provide existing and projected traffic volumes, with and without the subject project, for Average Daily Traffic (ADT), as well as AM and PM peak hours. The peak hour of the project/individual land use(s) (as given in the ITE Trip Generation Report) should be added to the corresponding AM/PM existing peak hour of the adjacent roadway traffic volumes (to show the worst case scenario), if the peak hour of the project/individual land use(s) for the generator is greater than the peak hour of the adjacent roadway (per ITE Trip Generation Report). The existing peak hour of traffic on the roads adjacent to the subject project site shall be identified. These traffic volumes shall be provided at roadway intersections and commercial or private accessways/entrances.

Comments: Will provide. 2012 and 2015 phase conditions
2012 - Existing with Church
2015 - with Westport Reconstruction
Assume Church in 2012
Assume School in 2015

(5) **LOS Analysis**: Level of Service (LOS) calculations for existing and projected conditions, with and without the subject project, for highway segments, intersection legs, and entrances shall be provided. Calculations shall be in accordance with the Highway Capacity Manual (HCM) and/or the Highway Capacity Software (HCS), or as may be agreed at the scoping meeting. Traffic volumes and LOS information shall be provided for each phase of development, to include conditions at date of project completion. Projections shall also be made ~~for date of~~ completion plus ~~ten (10) years or to an agreed upon forecast year~~.

Comments: Will provide. No buildout plus 10 needed.
Doing 2012 and 2015 Scenarios

(6) **Minimum Roadway/Intersection LOS Standards**: Recommendations for phased improvements to the road network links in order to maintain an acceptable LOS (minimum LOS "D") shall be provided. For each phase up to and including buildout, a minimum approach and overall LOS "D" at intersections shall apply.

Comments: Will provide

(7) **Background Traffic Assumptions**: Assumptions which determine projected background traffic, including through traffic growth rate to be applied on roadway links, shall be confirmed at the scoping meeting. The sources for determining future traffic projections will include one or more of the following:

- The Loudoun County Growth Summary or similar documents from Loudoun County.
- The Loudoun County transportation model which incorporates COG's Cooperative Forecasts for Loudoun County.
- Approved developments in the vicinity of the proposed development.

Specific other approved development names and respective development square footage or residential units in the study shall be provided.

Comments: Will provide. See comment #4
Apply prorated growth from the Area's Study in light of the Loudoun Growth Summary
- existing network (2012)
- Phase 2 / 2015 Ultimate Conditions with Westport Blvd Construction, realignment of Goshen Post

(8) **Traffic/Trip Distribution**: Directional trip distribution information shall be provided for project entrances and collector and arterial intersections within the study area for the phases and categories (e.g., residential, office, retail, industrial and institutional) of development.

Comments: Will provide based on traffic count data / church service area / school area
See previous report

(9) **LOS Calculations Assumptions**: Traffic counts and LOS worksheets and projected traffic volume LOS analyses, using agreed upon analysis techniques, including existing AM/PM peak hour signal timing, shall be included as a part of the traffic study.

Comments: Will provide. Include disc with report text plus Synchro 7.

(10) **Mode Choice**: Modal split information shall be provided for the phases of the analysis, with sources of information identified (e.g., COG model).

Comments: N.A.

(11) **Safety Locations**: Road safety hazards, as identified by the ISTEA set-aside funding criteria and/or as identified by the County at the scoping meeting, within the study area shall be analyzed for all roadway links and intersections in the traffic study.

Comments: Will provide either way - Describe geometry / safety issues

(12) **Traffic Mitigation Measures**: If trip reduction factors are used in the study, measures necessary to implement the reduction must be specified, with supporting documentation.

Comments: N.A.

(13) **Bicycle & Pedestrian Accommodations**: When bicycle and pedestrian accommodations are used to reduce anticipated traffic volumes, a description of the physical and functional characteristics of the proposed bicycle and pedestrian accommodations shall be provided. If such separate bicycle accommodations (e.g., striped lanes or multi-purpose trails) are anticipated, they shall also be identified. A description of the functional characteristics shall be provided to identify the transportation options that these accommodations provide (e.g., pedestrian access to retail center, safe bicycle route to elementary school, inter-parcel connections to adjacent neighborhoods, access to W&OD trail, etc.)

Comments: N.A.

Staff Signature: George R. Phillips 10/30/08

Traffic Consultant Signature: 10.30.08

lmm/
G:\LCG\OTS\FSM Traffic Study Scoping Documents\FSM Study Guidelines Application (12-07 FSM Revisions).doc

Appendix B

10 Percent Rule

Table B-1
Catholic Diocese of Arlington Property
Sunday 10% Rule

Intersection		Sunday
Goshen Road/Fleetwood Road/Route 50	Existing	927
	Site	719
	%	**78%**
Goshen Road/Braddock Road	Existing	30
	Site	26
	%	**87%**
Gum Spring Road/Braddock Road	Existing	749
	Site	135
	%	**18%**
Gum Spring Road/Route 50	Existing	1902
	Site	621
	%	**33%**
Stone Springs Road/Route 50	Existing	1458
	Site	645
	%	**44%**

Appendix C

Existing Public Transit Services

SCHEDULE EFFECTIVE – September 2, 2008

Bus Service from Dulles South to Rosslyn, Crystal City, The Pentagon and Washington DC

Fare Structure

SmarTrip Card - $7.00 one-way
Cash -$8.00 one-way (exact amount)
IntraCounty: Cash only - $1.00 (exact amount)

For SmarTrip card issues call 1-888-762-7874. SmarTrip cards can be loaded at any Metro Station.

Passenger Information Regarding Service
Service is weekday only. Schedule varies for certain holidays.
Once doors close and bus begins departing each stop, the bus will not open the doors for late arriving passengers.
Posted times on this schedule indicate arrivals and departures and are subject to traffic conditions and can vary by 5 to 10 minutes.

Contact Information

8:30AM – 5:00PM
Local - **703-771-5665**
1-877-GO-LCBUS

Before 8:30AM and after 5:00PM (Emergencies)
Veolia Dispatch
703-256-4339

Loudoun County Office of Transportation Services
1 Harrison Street, SE
4th Floor, Mail Stop 69
Leesburg, VA 20175

Website:
www.loudoun.gov/bus

Email Address:
rideshare@loudoun.gov

How to read this schedule

- The first column on the left is the run number, which will be displayed on the passenger side of the bus above the dash board.
- The top row shows pick up points and the destinations of the buses.
- The timetable shows when the bus stops. Times are always approximate and depend upon traffic and weather conditions. It is recommended to be at the stop early.
- If no time is listed, the run will not serve that point.
- Park & Ride symbol indicates locations in Loudoun County where commuters can park or pick up the buses.
- Metro symbols indicate stops with access to Metro Rail Stations.

Service Alert Systems

If you use the Loudoun County Commuter Bus Service you need to sign up for both of the following:

BUS BIZ - To sign up to receive email messages called Bus Biz from the County regarding future service disruptions, send us an email at Rideshare@loudoun.gov

LC ALERT - To sign up to receive text messages regarding immediate service disruptions go to the website and look for **LC Alert.**

Guaranteed Ride Home Information:
1-800-745-RIDE
www.commuterconnections.org

SCHEDULE EFFECTIVE – September 2, 2008

Morning departures from Dulles South to Rosslyn, Crystal City, The Pentagon and Washington DC

C-2

Run Number	Dulles South -Stone Ridge (Millstream Dr & Village Ctr Pl)	Dulles North Transit Center	Rosslyn -19th & Moore Streets	Army/Navy Drive & Fern Street	Crystal Drive & 20th Street	Eads Street & Army/Navy Drive	Pentagon Transit Center Bus Bay L11	State Dept (21st & Virginia Ave-Metro Bus Stop)	18th & E Streets, NW (Metro Bus Stop)	18th & G Streets, NW	18th & K Streets, NW	K & 17th Streets, NW	K & 15th Streets, NW	K & 14th Streets, NW	14th & H Streets, NW	14th & F Streets, NW (National Press Bldg)	14th & Pennsylvania, NW (Willard Hotel)	14th & Constitution, NW (Ronald Reagan Bldg)	Independence & 12th St., SW	Independence & L'Enfant Promenade, SW	Independence & 7th St. SW (FAA Bldg)	Independence & 6th St. SW (NASA)	Navy Yard Metro Station	3rd & C Streets, NW (Courthouse Complex)	E & New Jersey Ave., NW (Metro Bus Stop)	N. Capitol and Mass. Ave, NE (Metro Shelter)	H & N. Capitol St., NW (GPO Metro Shelter)	H & 4th Streets, NW (Metro Bus Shelter)	Convention Ctr-L & 7th St, NW (Metro Bus Stop)
DS3E	5:20	5:37	6:15	6:24	--	--	6:25	--	--	--	--	--	--	--	--	--	--	--	6:34	6:35	6:39	6:40	--	6:44	6:49	6:50	6:53	6:56	--
DS4W	5:28	5:45	--	--	--	--	--	6:21	6:25	6:26	6:28	6:30	6:31	6:32	6:33	6:34	6:35	6:36	--	--	--	--	--	--	--	--	--	--	--
DS8E	5:50	6:10	6:50	6:59	--	--	7:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DS9E	5:55	6:15	--	--	6:55	--	--	--	--	--	--	--	--	--	--	--	--	--	7:07	7:08	7:12	7:13	--	7:17	7:22	7:23	7:26	7:29	7:33
DS13W**	6:20	--	7:10	--	--	--	--	7:16	7:20	7:22	7:24	7:26	7:27	7:28	7:29	7:30	7:31	7:32	7:34	7:35	7:39	7:40	7:47	--	--	--	--	--	--
DS24	6:58	7:20	8:00	--	--	--	--	8:06	8:10	8:12	8:14	8:16	8:17	8:18	8:19	8:20	8:21	8:22	8:24	8:25	8:29	8:30	--	8:34	8:39	8:40	8:43	8:46	--
DS29	7:26	7:55	--	--	--	--	--	8:36	8:40	8:42	8:44	8:46	8:48	8:49	8:50	8:51	8:52	8:53	8:55	8:56	9:00	9:01	--	9:05	9:10	9:11	9:14	9:17	--
DS30E	7:31	8:00	8:40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8:52	8:53	8:57	8:58	--	9:02	9:04	9:05	9:08	9:11	--
DS33W	8:05	8:30	--	--	--	--	--	9:11	9:15	9:17	9:19	9:21	9:22	9:23	9:24	9:25	9:26	9:27	--	--	--	--	--	--	--	--	--	--	--

** This bus bypasses the Dulles North Transit Center.

Schedule Effective – September 2, 2008

Afternoon departures from Washington DC, The Pentagon, Crystal City and Rosslyn to Dulles South

Run Number	Convention Ctr - L & 7th Sts., NW (Metro Bus Stop)	H & 4th Streets, NW (Metro Bus Stop)	H & N. Capitol Sts., NW (GPO Metro Shelter)	N. Capitol & Mass., NW (Metro Shelter)	E & New Jersey Ave., NW (Metro Bus Stop)	3rd & Pennsylvania Ave., NW (East Wing Gallery)	Independence & 6th St., SW (Air & Space Museum)	Independence & L'Enfant Promenade, SW (Haupt Grd)	Independence & 12th St., SW (Metro Bus Stop)	Independence & 14th St., SW (W. Arch)	Navy Yard Metro Station	14th & Constitution, NW (Ronald Reagan Bldg)	14th & F Streets, NW (National Press Bldg)	I & 15th Sts., NW (The McPherson Bldg)	I & Connecticut Ave., NW (Army/Navy Bldg - 1627 on doors)	1825 I St., NW (Metro Marker)	19th & H Sts., NW (down from green fire hydrant -near water fountain)	19th & E Sts., NW (NW Corner near Mitchell Hall)	Crystal Drive & 20th St	Eads St & Army/Navy Drive	Army/Navy Drive & Fern St	Pentagon Transit Center Bus Bay L11	Rosslyn (1801 Lynn Street-new silver building)	Dulles North Transit Center	Dulles South -Stone Ridge (Millstream Dr & Village Ctr Plaza)
			Metro								Metro			Metro		Metro						Metro	Metro	Park & Ride	Park & Ride
DS4	--	3:26	3:29	3:31	3:33	3:37	3:40	3:42	3:43	3:44	--	3:47	3:48	3:51	3:53	3:55	3:56	3:57	--	--	--	--	--	4:36	4:51
LC6*	--	3:35	3:38	3:40	3:42	3:46	3:49	3:51	3:52	3:53	--	3:56	3:57	4:00	4:02	4:04	4:05	4:06	--	--	--	--	4:18	4:53	--
LC8E*	--	3:46	3:49	3:51	3:53	3:57	4:00	4:02	4:03	--	--	--	--	--	--	--	--	--	4:14	--	--	--	--	4:54	--
DS9E	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4:15	--	4:18	4:26	5:01	5:16
LC12W*	--	--	--	--	--	--	--	--	--	--	4:08	4:23	4:24	4:27	4:29	4:31	4:32	4:33	--	--	--	--	--	5:13	--
DS14	--	4:10	4:13	4:15	4:17	4:21	4:24	4:26	4:27	4:28	--	4:31	4:32	4:35	4:37	4:39	4:40	4:41	--	--	--	--	4:53	5:28	5:43
LC15*	--	4:17	4:20	4:22	4:24	4:28	4:31	4:33	4:34	4:35	--	4:38	4:39	4:42	4:44	4:46	4:47	4:48	--	--	--	--	5:00	5:35	--
LC17E*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4:45	4:50	--	4:53	5:04	5:39	--
DS18	--	4:25	4:28	4:30	4:32	4:36	4:39	4:41	4:42	4:43	--	4:46	4:47	4:50	4:52	4:54	4:55	4:56	--	--	--	--	5:08	5:43	5:58
DS20	--	4:32	4:35	4:37	4:39	4:43	4:46	4:48	4:49	4:50	--	4:53	4:54	4:57	4:59	5:01	5:02	5:03	--	--	--	--	5:15	5:50	6:05
LC21*	--	4:37	4:40	4:42	4:44	4:48	4:51	4:53	4:54	4:55	--	4:58	4:59	5:02	5:04	5:06	5:07	5:08	--	--	--	--	5:20	5:55	--
LC23W*	--	--	--	--	--	--	--	--	--	--	4:53	5:08	5:09	5:12	5:14	5:16	5:17	5:18	--	--	--	--	--	6:00	--
LC24E*	4:40	4:45	4:48	4:50	4:52	4:56	4:49	5:01	5:02	--	--	--	--	--	--	--	--	--	--	--	5:13	5:17	5:27	6:02	--
DS25	4:45	4:50	4:53	4:55	4:57	5:01	5:04	5:06	5:07	5:08	--	5:11	5:12	5:15	5:17	5:19	5:20	5:21	--	--	--	--	5:33	6:08	6:23
LC27*	--	5:07	5:10	5:13	5:15	5:19	5:22	5:24	5:25	5:26	--	5:29	5:30	5:33	5:35	5:37	5:38	5:39	--	--	--	--	5:55	6:30	--
DS29	--	5:22	5:25	5:28	5:30	5:34	5:37	5:39	5:40	5:41	--	5:44	5:45	5:48	5:50	--	--	--	--	--	--	--	--	6:35	6:50
DS30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5:52	5:53	5:54	--	--	--	--	6:10	6:45	7:00

*Transfer Opportunities for Dulles South riders

LC6 passengers can transfer at the Dulles North Transit Center to the DS9E that serves Dulles South.
LC8E passengers can transfer at the Dulles North Transit Center to the DS9E that serves Dulles South.
LC12W passengers can transfer at the Dulles North Transit Center to the DS14 that serves Dulles South.
LC15 & LC17E passengers can transfer at the Dulles North Transit Center to the DS18 that serves Dulles South.
LC21, LC23W & LC24E passengers can transfer at the Dulles North Transit Center to the DS25 that serves Dulles South.
LC27 passengers can transfer at the Dulles North Transit Center to the DS29 that serves Dulles South.

Appendix D

Existing Peak Hour Traffic Counts – Sunday Conditions

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

PROJECT:	Catholic Diocese of Arlington	DATE:	11/23/2008	SOUTHBOUND ROAD:	Fleetwood Road
W & A JOB NO.:	4386	DAY:	Sunday	NORTHBOUND ROAD:	Goshen Road
INTERSECTION:	Route 50 & Fleetwood Rd.	WEATHER:	Clear	WESTBOUND ROAD:	John S. Mosby Highway
LOCATION:	Loudoun County,VA	COUNTED BY:	Majda & Salkic	EASTBOUND ROAD:	John S. Mosby Highway
		INPUTED BY:	agan		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound Fleetwood Road				Westbound John S. Mosby Highway				Northbound Goshen Road				Eastbound John S. Mosby Highway				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
7:00-7:15	0	0	0	0	0	23	0	23	0	0	0	0	0	16	0	16	0	39	39		7:00-7:15
7:15-7:30	0	0	0	0	0	27	0	27	1	0	0	1	0	27	0	27	1	54	55		7:15-7:30
7:30-7:45	1	0	0	1	0	39	0	39	0	0	0	0	0	29	0	29	1	68	69		7:30-7:45
7:45-8:00	0	0	0	0	0	32	1	33	0	0	0	0	0	25	0	25	0	58	58		7:45-8:00
8:00-8:15	0	0	0	0	0	26	0	26	0	0	0	0	0	26	0	26	0	52	52		8:00-8:15
8:15-8:30	0	0	0	0	0	45	1	46	0	1	0	1	0	46	0	46	1	92	93		8:15-8:30
8:30-8:45	0	0	0	0	1	47	0	48	0	0	0	0	0	53	0	53	0	101	101		8:30-8:45
8:45-9:00	1	0	0	1	1	56	1	58	1	1	0	2	0	64	0	64	3	122	125		8:45-9:00
9:00-9:15	0	0	0	0	0	59	0	59	0	0	0	0	0	60	0	60	0	119	119		9:00-9:15
9:15-9:30	0	0	0	0	0	66	1	67	1	0	0	1	0	60	1	61	1	128	129		9:15-9:30
9:30-9:45	2	0	0	2	0	59	0	59	0	0	0	0	0	61	0	61	2	120	122		9:30-9:45
9:45-10:00	1	0	0	1	0	53	1	54	1	0	0	1	1	64	0	65	2	119	121		9:45-10:00
10:00-10:15	0	0	1	1	0	58	2	60	1	0	0	1	0	83	0	83	2	143	145		10:00-10:15
10:15-10:30	0	0	1	1	0	82	0	82	2	0	0	2	0	88	0	88	3	170	173		10:15-10:30
10:30-10:45	0	0	0	0	0	69	0	69	2	0	0	2	1	80	0	81	2	150	152		10:30-10:45
10:45-11:00	0	0	0	0	1	109	1	111	5	0	0	5	0	83	1	84	5	195	200		10:45-11:00
11:00-11:15	0	0	0	0	0	87	0	87	1	0	0	1	0	69	0	69	1	156	157		11:00-11:15
11:15-11:30	0	0	0	0	0	87	0	87	1	0	1	2	0	71	0	71	2	158	160		11:15-11:30
11:30-11:45	1	0	0	1	0	99	0	99	0	0	0	0	1	125	1	127	1	226	227		11:30-11:45
11:45-12:00	0	1	2	3	0	105	3	108	1	0	0	1	0	83	0	83	4	191	195		11:45-12:00
12:00-12:15	0	0	0	0	1	95	0	96	1	0	0	1	0	116	0	116	1	212	213		12:00-12:15
12:15-12:30	0	0	0	0	0	86	1	87	2	0	1	3	2	99	0	101	3	188	191		12:15-12:30
12:30-12:45	0	0	0	0	0	110	1	111	0	0	0	0	0	113	0	113	0	224	224		12:30-12:45
12:45-1:00	1	0	0	1	0	113	0	113	0	0	1	1	0	120	0	120	2	233	235		12:45-1:00
1:00-1:15	4	0	0	4	0	117	0	117	2	0	0	2	1	112	1	114	6	231	237		1:00-1:15
1:15-1:30	1	0	0	1	0	119	1	120	1	0	0	1	0	110	0	110	2	230	232		1:15-1:30
1:30-1:45	1	0	0	1	0	91	0	91	3	0	0	3	1	109	0	110	4	201	205		1:30-1:45
1:45-2:00	0	0	0	0	0	118	0	118	2	1	0	3	0	99	0	99	3	217	220		1:45-2:00
2:00-2:15	0	1	0	1	2	115	1	118	0	0	0	0	0	127	1	128	1	246	247		2:00-2:15
2:15-2:30	1	0	2	3	1	95	3	99	0	0	0	0	0	106	0	106	3	205	208		2:15-2:30
2:30-2:45	1	0	0	1	1	115	1	117	0	0	0	0	0	92	2	94	1	211	212		2:30-2:45
2:45-3:00	0	0	1	1	2	95	3	100	2	0	0	2	1	103	0	104	3	204	207		2:45-3:00
3:00-3:15	0	0	1	1	0	105	1	106	2	0	1	3	0	124	0	124	4	230	234		3:00-3:15
3:15-3:30	1	0	1	2	0	112	0	112	2	0	0	2	0	107	0	107	4	219	223		3:15-3:30
3:30-3:45	0	0	0	0	1	95	2	98	0	0	0	0	0	119	1	120	0	218	218		3:30-3:45
3:45-4:00	0	0	0	0	0	87	0	87	0	0	0	0	0	114	0	114	0	201	201		3:45-4:00
4:00-4:15	0	0	1	1	0	90	1	91	1	0	0	1	0	100	0	100	2	191	193		4:00-4:15
4:15-4:30	0	0	0	0	2	98	0	100	1	0	0	1	1	128	0	129	1	229	230		4:15-4:30
4:30-4:45	0	0	0	0	1	85	1	87	0	0	0	0	0	110	0	110	0	197	197		4:30-4:45
4:45-5:00	0	0	0	0	0	92	1	93	1	0	0	1	0	115	0	115	1	208	209		4:45-5:00
5:00-5:15	0	0	1	1	0	88	3	91	3	0	0	3	0	122	0	122	4	213	217		5:00-5:15
5:15-5:30	0	0	1	1	0	76	0	76	0	0	1	1	0	106	0	106	2	182	184		5:15-5:30
5:30-5:45	0	0	1	1	1	55	1	57	0	0	0	0	0	60	1	61	1	118	119		5:30-5:45
5:45-6:00	1	0	0	1	0	56	1	57	0	0	0	0	0	80	0	80	1	137	138		5:45-6:00
6:00-6:15	0	0	0	0	0	56	1	57	0	0	0	0	0	63	0	63	0	120	120		6:00-6:15
6:15-6:30	0	0	0	0	0	66	2	68	0	0	0	0	0	74	0	74	0	142	142		6:15-6:30
6:30-6:45	0	0	0	0	0	43	1	44	0	0	0	0	0	45	0	45	0	89	89		6:30-6:45
6:45-7:00	0	0	0	0	1	55	1	57	1	0	0	1	0	47	0	47	1	104	105		6:45-7:00
7:00-7:15	0	0	0	0	0	60	0	60	0	0	0	0	0	38	0	38	0	98	98		7:00-7:15
7:15-7:30	0	0	0	0	2	44	0	46	1	0	0	1	0	53	0	53	1	99	100		7:15-7:30
7:30-7:45	1	0	0	1	0	52	0	52	1	0	0	1	0	41	0	41	2	93	95		7:30-7:45
7:45-8:00	1	0	0	1	0	44	3	47	1	0	0	1	1	38	0	39	2	86	88		7:45-8:00
13 Hour Totals	**19**	**2**	**13**	**34**	**18**	**3,956**	**41**	**4,015**	**44**	**3**	**5**	**52**	**10**	**4,203**	**9**	**4,222**	**86**	**8,237**	**8,323**		
1 Hour Totals																					
7:00-8:00	1	0	0	1	0	121	1	122	1	0	0	1	0	97	0	97	2	219	221	0.80	7:00-8:00
7:15-8:15	1	0	0	1	0	124	1	125	1	0	0	1	0	107	0	107	2	232	234	0.85	7:15-8:15
7:30-8:30	1	0	0	1	0	142	2	144	0	1	0	1	0	126	0	126	2	270	272	0.73	7:30-8:30
7:45-8:45	0	0	0	0	1	150	2	153	0	1	0	1	0	150	0	150	1	303	304	0.75	7:45-8:45
8:00-9:00	1	0	0	1	2	174	2	178	1	2	0	3	0	189	0	189	4	367	371	0.74	8:00-9:00
8:15-9:15	1	0	0	1	2	207	2	211	1	2	0	3	0	223	0	223	4	434	438	0.88	8:15-9:15
8:30-9:30	1	0	0	1	2	228	2	232	2	1	0	3	0	237	1	238	4	470	474	0.92	8:30-9:30
8:45-9:45	3	0	0	3	1	240	2	243	2	1	0	3	0	245	1	246	6	489	495	0.96	8:45-9:45
9:00-10:00	3	0	0	3	0	237	2	239	2	0	0	2	1	245	1	247	5	486	491	0.95	9:00-10:00
9:15-10:15	3	0	1	4	0	236	4	240	3	0	0	3	1	268	1	270	7	510	517	0.89	9:15-10:15
9:30-10:30	3	0	2	5	0	252	3	255	4	0	0	4	1	296	0	297	9	552	561	0.81	9:30-10:30
9:45-10:45	1	0	2	3	0	262	3	265	6	0	0	6	2	315	0	317	9	582	591	0.85	9:45-10:45
10:00-11:00	0	0	2	2	1	318	3	322	10	0	0	10	1	334	1	336	12	658	670	0.84	10:00-11:00
10:15-11:15	0	0	1	1	1	347	1	349	10	0	0	10	1	320	1	322	11	671	682	0.85	10:15-11:15
10:30-11:30	0	0	0	0	1	352	1	354	9	0	1	10	1	303	1	305	10	659	669	0.84	10:30-11:30
10:45-11:45	1	0	0	1	1	382	1	384	7	0	1	8	1	348	2	351	9	735	744	0.82	10:45-11:45
11:00-12:00	1	1	2	4	0	378	3	381	3	0	1	4	1	348	1	350	8	731	739	0.81	11:00-12:00
11:15-12:15	1	1	2	4	1	386	3	390	3	0	1	4	1	395	1	397	8	787	795	0.88	11:15-12:15
11:30-12:30	1	1	2	4	1	385	4	390	4	0	1	5	3	423	1	427	9	817	826	0.91	11:30-12:30
11:45-12:45	0	1	2	3	1	396	5	402	4	0	1	5	2	411	0	413	8	815	823	0.92	11:45-12:45
12:00-1:00	1	0	0	1	1	404	2	407	3	0	2	5	2	448	0	450	6	857	863	0.92	12:00-1:00
12:15-1:15	5	0	0	5	0	426	2	428	4	0	2	6	3	444	1	448	11	876	887	0.94	12:15-1:15
12:30-1:30	6	0	0	6	0	459	2	461	3	0	1	4	1	455	1	457	10	918	928	0.98	12:30-1:30
12:45-1:45	7	0	0	7	0	440	1	441	6	0	1	7	2	451	1	454	14	895	909	0.96	12:45-1:45
1:00-2:00	6	0	0	6	0	445	1	446	8	1	0	9	2	430	1	433	15	879	894	0.94	1:00-2:00
1:15-2:15	2	1	0	3	2	443	2	447	6	1	0	7	1	445	1	447	10	894	904	0.91	1:15-2:15
1:30-2:30	2	1	2	5	3	419	4	426	5	1	0	6	1	441	1	443	11	869	880	0.89	1:30-2:30
1:45-2:45	2	1	2	5	4	443	5	452	2	1	0	3	0	424	3	427	8	879	887	0.90	1:45-2:45
2:00-3:00	2	1	3	6	6	420	8	434	2	0	0	2	1	428	3	432	8	866	874	0.88	2:00-3:00
2:15-3:15	2	0	4	6	4	410	8	422	4	0	1	5	1	425	2	428	11	850	861	0.92	2:15-3:15
2:30-3:30	2	0	3	5	3	427	5	435	6	0	1	7	1	426	2	429	12	864	876	0.94	2:30-3:30
2:45-3:45	1	0	3	4	3	407	6	416	6	0	1	7	1	453	1	455	11	871	882	0.94	2:45-3:45
3:00-4:00	1	0	2	3	1	399	3	403	4	0	1	5	0	464	1	465	8	868	876	0.94	3:00-4:00
3:15-4:15	1	0	2	3	1	384	3	388	3	0	0	3	0	440	1	441	6	829	835	0.94	3:15-4:15
3:30-4:30	0	0	1	1	3	370	3	376	2	0	0	2	1	461	1	463	3	839	842	0.92	3:30-4:30
3:45-4:45	0	0	1	1	3	360	2	365	2	0	0	2	1	452	0	453	3	818	821	0.89	3:45-4:45
4:00-5:00	0	0	1	1	3	365	3	371	3	0	0	3	1	453	0	454	4	825	829	0.90	4:00-5:00
4:15-5:15	0	0	1	1	3	363	5	371	5	0	0	5	1	475	0	476	6	847	853	0.93	4:15-5:15
4:30-5:30	0	0	2	2	1	341	5	347	4	0	1	5	0	453	0	453	7	800	807	0.93	4:30-5:30
4:45-5:45	0	0	3	3	1	311	5	317	4	0	1	5	0	403	1	404	8	721	729	0.84	4:45-5:45
5:00-6:00	1	0	3	4	1	275	5	281	3	0	1	4	0	368	1	369	8	650	658	0.76	5:00-6:00
5:15-6:15	1	0	2	3	1	243	3	247	0	0	1	1	0	309	1	310	4	557	561	0.76	5:15-6:15
5:30-6:30	1	0	1	2	1	233	5	239	0	0	0	0	0	277	1	278	2	517	519	0.91	5:30-6:30
5:45-6:45	1	0	0	1	0	221	5	226	0	0	0	0	0	262	0	262	1	488	489	0.86	5:45-6:45
6:00-7:00	0	0	0	0	1	220	5	226	1	0	0	1	0	229	0	229	1	455	456	0.80	6:00-7:00
6:15-7:15	0	0	0	0	1	224	4	229	1	0	0	1	0	204	0	204	1	433	434	0.76	6:15-7:15
6:30-7:30	0	0	0	0	3	202	2	207	2	0	0	2	0	183	0	183	2	390	392	0.93	6:30-7:30
6:45-7:45	1	0	0	1	3	211	1	215	3	0	0	3	0	179	0	179	4	394	398	0.95	6:45-7:45
7:00-8:00	2	0	0	2	2	200	3	205	3	0	0	3	1	170	0	171	5	376	381	0.95	7:00-8:00
AM Peak 10:15-11:15	**0**	**0**	**1**	**1**	**1**	**347**	**1**	**349**	**10**	**0**	**0**	**10**	**1**	**320**	**1**	**322**	**11**	**671**	**682**	**0.85**	**AM Peak 10:15-11:15**
Mid-Day Peak 12:30-1:30	**6**	**0**	**0**	**6**	**0**	**459**	**2**	**461**	**3**	**0**	**1**	**4**	**1**	**455**	**1**	**457**	**10**	**918**	**928**	**0.98**	**Mid-Day Peak 12:30-1:30**
PM Peak 5:00-6:00	**1**	**0**	**3**	**4**	**1**	**275**	**5**	**281**	**3**	**0**	**1**	**4**	**0**	**368**	**1**	**369**	**8**	**650**	**658**	**0.76**	**PM Peak 5:00-6:00**

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

PROJECT:	Catholic Diocese of Arlington	DATE:	11/23/2008	SOUTHBOUND ROAD:	Gum Spring Road
W & A JOB NO.:	4386	DAY:	Sunday	NORTHBOUND ROAD:	Gum Spring Road
INTERSECTION:	Route 50 & Gum Spring Rd.	WEATHER:	Clear	WESTBOUND ROAD:	John S. Mosby Highway
LOCATION:	Loudoun County,VA	COUNTED BY:	Luz & Mario	EASTBOUND ROAD:	John S. Mosby Highway
		INPUTED BY:	agan		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound Gum Spring Road				Westbound John S. Mosby Highway				Northbound Gum Spring Road				Eastbound John S. Mosby Highway				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
7:00-7:15	5	2	1	8	0	18	5	23	6	5	0	11	0	19	3	22	19	45	64		7:00-7:15
7:15-7:30	2	5	0	7	1	23	5	29	7	10	3	20	2	26	7	35	27	64	91		7:15-7:30
7:30-7:45	7	6	0	13	4	38	4	46	16	11	2	29	0	33	6	39	42	85	127		7:30-7:45
7:45-8:00	5	2	2	9	5	22	8	35	11	9	3	23	1	31	6	38	32	73	105		7:45-8:00
8:00-8:15	3	5	0	8	1	24	11	36	11	7	2	20	1	34	0	35	28	71	99		8:00-8:15
8:15-8:30	12	6	3	21	5	41	8	54	11	12	3	26	2	44	7	53	47	107	154		8:15-8:30
8:30-8:45	10	6	6	22	2	47	6	55	16	14	4	34	5	60	10	75	56	130	186		8:30-8:45
8:45-9:00	3	3	0	6	1	60	7	68	24	16	2	42	1	66	14	81	48	149	197		8:45-9:00
9:00-9:15	15	8	3	26	5	49	8	62	29	13	1	43	2	71	10	83	69	145	214		9:00-9:15
9:15-9:30	15	11	5	31	3	72	14	89	31	26	5	62	2	94	10	106	93	195	288		9:15-9:30
9:30-9:45	14	10	4	28	9	63	13	85	31	14	3	48	4	71	11	86	76	171	247		9:30-9:45
9:45-10:00	12	9	4	25	7	58	11	76	39	15	4	58	7	73	17	97	83	173	256		9:45-10:00
10:00-10:15	10	14	9	33	6	70	14	90	40	24	2	66	2	107	14	123	99	213	312		10:00-10:15
10:15-10:30	16	11	3	30	3	87	17	107	27	23	4	54	7	107	27	141	84	248	332		10:15-10:30
10:30-10:45	14	14	6	34	2	81	29	112	45	17	2	64	6	100	26	132	98	244	342		10:30-10:45
10:45-11:00	18	14	8	40	11	96	40	147	43	16	6	65	0	94	14	108	105	255	360		10:45-11:00
11:00-11:15	8	11	3	22	10	108	30	148	33	12	3	48	6	114	5	125	70	273	343		11:00-11:15
11:15-11:30	19	21	10	50	5	93	30	128	29	20	1	50	7	87	13	107	100	235	335		11:15-11:30
11:30-11:45	11	15	5	31	9	130	34	173	39	12	2	53	2	132	12	146	84	319	403		11:30-11:45
11:45-12:00	16	9	7	32	4	77	42	123	48	17	12	77	4	100	11	115	109	238	347		11:45-12:00
12:00-12:15	21	21	6	48	7	110	57	174	27	15	4	46	4	109	13	126	94	300	394		12:00-12:15
12:15-12:30	10	13	9	32	7	112	39	158	33	18	3	54	8	124	12	144	86	302	388		12:15-12:30
12:30-12:45	23	20	6	49	9	123	61	193	43	16	7	66	5	113	20	138	115	331	446		12:30-12:45
12:45-1:00	20	22	4	46	9	130	50	189	35	16	3	54	9	129	21	159	100	348	448		12:45-1:00
1:00-1:15	22	23	6	51	9	165	65	239	33	23	7	63	6	129	17	152	114	391	505		1:00-1:15
1:15-1:30	17	39	4	60	6	140	53	199	36	18	6	60	3	112	12	127	120	326	446		1:15-1:30
1:30-1:45	27	17	4	48	9	116	65	190	48	15	6	69	3	124	19	146	117	336	453		1:30-1:45
1:45-2:00	25	22	9	56	10	148	57	215	38	27	5	70	5	132	20	157	126	372	498		1:45-2:00
2:00-2:15	20	11	5	36	16	127	54	197	38	16	7	61	3	124	23	150	97	347	444		2:00-2:15
2:15-2:30	19	19	10	48	6	131	52	189	32	16	4	52	5	132	21	158	100	347	447		2:15-2:30
2:30-2:45	21	19	7	47	8	139	44	191	27	17	7	51	4	129	17	150	98	341	439		2:30-2:45
2:45-3:00	17	16	8	41	11	122	56	189	39	17	5	61	2	114	22	138	102	327	429		2:45-3:00
8 Hour Totals	**457**	**424**	**157**	**1,038**	**200**	**2,820**	**989**	**4,009**	**965**	**507**	**128**	**1,600**	**118**	**2,934**	**440**	**3,492**	**2,638**	**7,501**	**10,139**		
1 Hour Totals																					
7:00-8:00	19	15	3	37	10	101	22	133	40	35	8	83	3	109	22	134	120	267	387	0.76	7:00-8:00
7:15-8:15	17	18	2	37	11	107	28	146	45	37	10	92	4	124	19	147	129	293	422	0.83	7:15-8:15
7:30-8:30	27	19	5	51	15	125	31	171	49	39	10	98	4	142	19	165	149	336	485	0.79	7:30-8:30
7:45-8:45	30	19	11	60	13	134	33	180	49	42	12	103	9	169	23	201	163	381	544	0.73	7:45-8:45
8:00-9:00	28	20	9	57	9	172	32	213	62	49	11	122	9	204	31	244	179	457	636	0.81	8:00-9:00
8:15-9:15	40	23	12	75	13	197	29	239	80	55	10	145	10	241	41	292	220	531	751	0.88	8:15-9:15
8:30-9:30	43	28	14	85	11	228	35	274	100	69	12	181	10	291	44	345	266	619	885	0.77	8:30-9:30
8:45-9:45	47	32	12	91	18	244	42	304	115	69	11	195	9	302	45	356	286	660	946	0.82	8:45-9:45
9:00-10:00	56	38	16	110	24	242	46	312	130	68	13	211	15	309	48	372	321	684	1,005	0.87	9:00-10:00
9:15-10:15	51	44	22	117	25	263	52	340	141	79	14	234	15	345	52	412	351	752	1,103	0.88	9:15-10:15
9:30-10:30	52	44	20	116	25	278	55	358	137	76	13	226	20	358	69	447	342	805	1,147	0.86	9:30-10:30
9:45-10:45	52	48	22	122	18	296	71	385	151	79	12	242	22	387	84	493	364	878	1,242	0.91	9:45-10:45
10:00-11:00	58	53	26	137	22	334	100	456	155	80	14	249	15	408	81	504	386	960	1,346	0.93	10:00-11:00
10:15-11:15	56	50	20	126	26	372	116	514	148	68	15	231	19	415	72	506	357	1,020	1,377	0.96	10:15-11:15
10:30-11:30	59	60	27	146	28	378	129	535	150	65	12	227	19	395	58	472	373	1,007	1,380	0.96	10:30-11:30
10:45-11:45	56	61	26	143	35	427	134	596	144	60	12	216	15	427	44	486	359	1,082	1,441	0.89	10:45-11:45
11:00-12:00	54	56	25	135	28	408	136	572	149	61	18	228	19	433	41	493	363	1,065	1,428	0.89	11:00-12:00
11:15-12:15	67	66	28	161	25	410	163	598	143	64	19	226	17	428	49	494	387	1,092	1,479	0.92	11:15-12:15
11:30-12:30	58	58	27	143	27	429	172	628	147	62	21	230	18	465	48	531	373	1,159	1,532	0.95	11:30-12:30
11:45-12:45	70	63	28	161	27	422	199	648	151	66	26	243	21	446	56	523	404	1,171	1,575	0.88	11:45-12:45
12:00-1:00	74	76	25	175	32	475	207	714	138	65	17	220	26	475	66	567	395	1,281	1,676	0.94	12:00-1:00
12:15-1:15	75	78	25	178	34	530	215	779	144	73	20	237	28	495	70	593	415	1,372	1,787	0.88	12:15-1:15
12:30-1:30	82	104	20	206	33	558	229	820	147	73	23	243	23	483	70	576	449	1,396	1,845	0.91	12:30-1:30
12:45-1:45	86	101	18	205	33	551	233	817	152	72	22	246	21	494	69	584	451	1,401	1,852	0.92	12:45-1:45
1:00-2:00	91	101	23	215	34	569	240	843	155	83	24	262	17	497	68	582	477	1,425	1,902	0.94	1:00-2:00
1:15-2:15	89	89	22	200	41	531	229	801	160	76	24	260	14	492	74	580	460	1,381	1,841	0.92	1:15-2:15
1:30-2:30	91	69	28	188	41	522	228	791	156	74	22	252	16	512	83	611	440	1,402	1,842	0.92	1:30-2:30
1:45-2:45	85	71	31	187	40	545	207	792	135	76	23	234	17	517	81	615	421	1,407	1,828	0.92	1:45-2:45
2:00-3:00	77	65	30	172	41	519	206	766	136	66	23	225	14	499	83	596	397	1,362	1,759	0.98	2:00-3:00
AM Peak 10:30-11:30	**59**	**60**	**27**	**146**	**28**	**378**	**129**	**535**	**150**	**65**	**12**	**227**	**19**	**395**	**58**	**472**	**373**	**1,007**	**1,380**	**0.96**	**AM Peak 10:30-11:30**
Mid-Day Peak 1:00-2:00	**91**	**101**	**23**	**215**	**34**	**569**	**240**	**843**	**155**	**83**	**24**	**262**	**17**	**497**	**68**	**582**	**477**	**1,425**	**1,902**	**0.94**	**Mid-Day Peak 1:00-2:00**

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

PROJECT:	Catholic Diocese of Arlington	DATE:	11/23/2008	SOUTHBOUND ROAD:	Gum Spring Road
W & A JOB NO.:	4386	DAY:	Sunday	NORTHBOUND ROAD:	Gum Spring Road
INTERSECTION:	Braddock Rd.& Gum Spring Rd.	WEATHER:	Clear	WESTBOUND ROAD:	Braddock Road
LOCATION:	Loudoun County,VA	COUNTED BY	Belmo & Jasenia	EASTBOUND ROAD:	Braddock Road
		INPUTED BY:	agan		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound Gum Spring Road				Westbound Braddock Road				Northbound Gum Spring Road				Eastbound Braddock Road				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
7:00-7:15	0	4	1	5	1	0	3	4	0	10	1	11	0	2	2	4	16	8	24		7:00-7:15
7:15-7:30	0	5	2	7	1	0	2	3	3	7	0	10	1	9	0	10	17	13	30		7:15-7:30
7:30-7:45	1	6	3	10	3	1	2	6	5	14	0	19	2	3	2	7	29	13	42		7:30-7:45
7:45-8:00	1	7	3	11	2	4	3	9	6	14	0	20	2	2	3	7	31	16	47		7:45-8:00
8:00-8:15	1	3	7	11	1	0	2	3	2	15	1	18	1	3	2	6	29	9	38		8:00-8:15
8:15-8:30	0	13	7	20	1	0	4	5	7	4	0	11	0	5	2	7	31	12	43		8:15-8:30
8:30-8:45	0	10	6	16	2	1	12	15	6	16	0	22	0	11	3	14	38	29	67		8:30-8:45
8:45-9:00	1	14	7	22	4	0	6	10	8	14	2	24	2	11	7	20	46	30	76		8:45-9:00
9:00-9:15	1	10	9	20	1	9	7	17	5	21	1	27	2	11	6	19	47	36	83		9:00-9:15
9:15-9:30	3	12	13	28	11	5	7	23	4	15	2	21	3	9	1	13	49	36	85		9:15-9:30
9:30-9:45	0	18	12	30	7	6	10	23	11	22	1	34	2	15	3	20	64	43	107		9:30-9:45
9:45-10:00	1	12	17	30	13	8	6	27	11	25	0	36	2	23	6	31	66	58	124		9:45-10:00
10:00-10:15	3	18	18	39	13	5	11	29	4	13	5	22	2	13	8	23	61	52	113		10:00-10:15
10:15-10:30	3	15	22	40	16	6	10	32	9	16	4	29	1	14	10	25	69	57	126		10:15-10:30
10:30-10:45	6	21	18	45	5	9	16	30	6	19	3	28	1	21	8	30	73	60	133		10:30-10:45
10:45-11:00	8	22	17	47	12	14	12	38	9	15	1	25	3	13	10	26	72	64	136		10:45-11:00
11:00-11:15	4	28	14	46	15	10	15	40	11	17	1	29	6	13	2	21	75	61	136		11:00-11:15
11:15-11:30	6	25	17	48	21	16	6	43	14	12	2	28	2	10	6	18	76	61	137		11:15-11:30
11:30-11:45	7	21	16	44	23	17	12	52	11	19	1	31	1	15	5	21	75	73	148		11:30-11:45
11:45-12:00	2	25	7	34	28	13	12	53	10	16	0	26	2	7	3	12	60	65	125		11:45-12:00
12:00-12:15	8	21	16	45	17	9	9	35	7	10	5	22	5	11	4	20	67	55	122		12:00-12:15
12:15-12:30	6	26	17	49	28	14	10	52	9	17	2	28	0	20	3	23	77	75	152		12:15-12:30
12:30-12:45	5	25	24	54	19	18	8	45	12	24	2	38	5	17	10	32	92	77	169		12:30-12:45
12:45-1:00	7	29	37	73	18	21	15	54	16	29	3	48	5	20	7	32	121	86	207		12:45-1:00
1:00-1:15	5	29	29	63	19	17	10	46	10	41	3	54	2	19	6	27	117	73	190		1:00-1:15
1:15-1:30	8	33	28	69	10	17	16	43	10	24	2	36	7	18	10	35	105	78	183		1:15-1:30
1:30-1:45	4	27	24	55	18	16	13	47	7	32	7	46	1	11	3	15	101	62	163		1:30-1:45
1:45-2:00	6	20	16	42	22	15	12	49	19	21	4	44	3	13	6	22	86	71	157		1:45-2:00
2:00-2:15	7	16	12	35	20	8	12	40	10	22	2	34	4	12	5	21	69	61	130		2:00-2:15
2:15-2:30	3	27	20	50	25	17	13	55	15	32	5	52	5	9	5	19	102	74	176		2:15-2:30
2:30-2:45	3	20	26	49	36	13	14	63	13	25	6	44	2	11	6	19	93	82	175		2:30-2:45
2:45-3:00	6	20	27	53	20	18	13	51	8	21	3	32	5	8	5	18	85	69	154		2:45-3:00
8 Hour Totals	**116**	**582**	**492**	**1,190**	**432**	**307**	**303**	**1,042**	**278**	**602**	**69**	**949**	**79**	**379**	**159**	**617**	**2,139**	**1,659**	**3,798**		
1 Hour Totals																					
7:00-8:00	2	22	9	33	7	5	10	22	14	45	1	60	5	16	7	28	93	50	143	0.76	7:00-8:00
7:15-8:15	3	21	15	39	7	5	9	21	16	50	1	67	6	17	7	30	106	51	157	0.84	7:15-8:15
7:30-8:30	3	29	20	52	7	5	11	23	20	47	1	68	5	13	9	27	120	50	170	0.90	7:30-8:30
7:45-8:45	2	33	23	58	6	5	21	32	21	49	1	71	3	21	10	34	129	66	195	0.73	7:45-8:45
8:00-9:00	2	40	27	69	8	1	24	33	23	49	3	75	3	30	14	47	144	80	224	0.74	8:00-9:00
8:15-9:15	2	47	29	78	8	10	29	47	26	55	3	84	4	38	18	60	162	107	269	0.81	8:15-9:15
8:30-9:30	5	46	35	86	18	15	32	65	23	66	5	94	7	42	17	66	180	131	311	0.91	8:30-9:30
8:45-9:45	5	54	41	100	23	20	30	73	28	72	6	106	9	46	17	72	206	145	351	0.82	8:45-9:45
9:00-10:00	5	52	51	108	32	28	30	90	31	83	4	118	9	58	16	83	226	173	399	0.80	9:00-10:00
9:15-10:15	7	60	60	127	44	24	34	102	30	75	8	113	9	60	18	87	240	189	429	0.86	9:15-10:15
9:30-10:30	7	63	69	139	49	25	37	111	35	76	10	121	7	65	27	99	260	210	470	0.93	9:30-10:30
9:45-10:45	13	66	75	154	47	28	43	118	30	73	12	115	6	71	32	109	269	227	496	0.93	9:45-10:45
10:00-11:00	20	76	75	171	46	34	49	129	28	63	13	104	7	61	36	104	275	233	508	0.93	10:00-11:00
10:15-11:15	21	86	71	178	48	39	53	140	35	67	9	111	11	61	30	102	289	242	531	0.98	10:15-11:15
10:30-11:30	24	96	66	186	53	49	49	151	40	63	7	110	12	57	26	95	296	246	542	0.99	10:30-11:30
10:45-11:45	25	96	64	185	71	57	45	173	45	63	5	113	12	51	23	86	298	259	557	0.94	10:45-11:45
11:00-12:00	19	99	54	172	87	56	45	188	46	64	4	114	11	45	16	72	286	260	546	0.92	11:00-12:00
11:15-12:15	23	92	56	171	89	55	39	183	42	57	8	107	10	43	18	71	278	254	532	0.90	11:15-12:15
11:30-12:30	23	93	56	172	96	53	43	192	37	62	8	107	8	53	15	76	279	268	547	0.90	11:30-12:30
11:45-12:45	21	97	64	182	92	54	39	185	38	67	9	114	12	55	20	87	296	272	568	0.84	11:45-12:45
12:00-1:00	26	101	94	221	82	62	42	186	44	80	12	136	15	68	24	107	357	293	650	0.79	12:00-1:00
12:15-1:15	23	109	107	239	84	70	43	197	47	111	10	168	12	76	26	114	407	311	718	0.87	12:15-1:15
12:30-1:30	25	116	118	259	66	73	49	188	48	118	10	176	19	74	33	126	435	314	749	0.90	12:30-1:30
12:45-1:45	24	118	118	260	65	71	54	190	43	126	15	184	15	68	26	109	444	299	743	0.90	12:45-1:45
1:00-2:00	23	109	97	229	69	65	51	185	46	118	16	180	13	61	25	99	409	284	693	0.91	1:00-2:00
1:15-2:15	25	96	80	201	70	56	53	179	46	99	15	160	15	54	24	93	361	272	633	0.86	1:15-2:15
1:30-2:30	20	90	72	182	85	56	50	191	51	107	18	176	13	45	19	77	358	268	626	0.89	1:30-2:30
1:45-2:45	19	83	74	176	103	53	51	207	57	100	17	174	14	45	22	81	350	288	638	0.91	1:45-2:45
2:00-3:00	19	83	85	187	101	56	52	209	46	100	16	162	16	40	21	77	349	286	635	0.90	2:00-3:00
AM Peak 10:30-11:30	**24**	**96**	**66**	**186**	**53**	**49**	**49**	**151**	**40**	**63**	**7**	**110**	**12**	**57**	**26**	**95**	**296**	**246**	**542**	**0.99**	**AM Peak 10:30-11:30**
Mid-Day Peak 12:30-1:30	**25**	**116**	**118**	**259**	**66**	**73**	**49**	**188**	**48**	**118**	**10**	**176**	**19**	**74**	**33**	**126**	**435**	**314**	**749**	**0.90**	**Mid-Day Peak 12:30-1:30**

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

PROJECT:	Catholic Diocese of Arlington	DATE:	11/23/2008	SOUTHBOUND ROAD:	Goshen Road
W & A JOB NO.:	4386	DAY:	Sunday	NORTHBOUND ROAD:	0
INTERSECTION:	Braddock Rd.& Goshen Rd.	WEATHER:	Clear	WESTBOUND ROAD:	Braddock Road
LOCATION:	Loudoun County,VA	COUNTED BY:	Camil	EASTBOUND ROAD:	Braddock Road
		INPUTED BY:	agan		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound Goshen Road				Westbound Braddock Road				Northbound 0				Eastbound Braddock Road				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
7:00-7:15	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1		7:00-7:15
7:15-7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7:15-7:30
7:30-7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7:30-7:45
7:45-8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7:45-8:00
8:00-8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1		8:00-8:15
8:15-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1		8:15-8:30
8:30-8:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1		8:30-8:45
8:45-9:00	0	0	0	0	0	1	0	1	0	0	0	0	0	2	2	4	0	5	5		8:45-9:00
9:00-9:15	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	3	3		9:00-9:15
9:15-9:30	1	0	0	1	0	2	0	2	0	0	0	0	0	0	0	0	1	2	3		9:15-9:30
9:30-9:45	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	0	5	5		9:30-9:45
9:45-10:00	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	2	2		9:45-10:00
10:00-10:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1		10:00-10:15
10:15-10:30	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	0	3	3		10:15-10:30
10:30-10:45	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2	0	3	3		10:30-10:45
10:45-11:00	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1		10:45-11:00
11:00-11:15	0	0	1	1	0	1	0	1	0	0	0	0	0	1	2	3	1	4	5		11:00-11:15
11:15-11:30	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	3	3		11:15-11:30
11:30-11:45	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	0	5	5		11:30-11:45
11:45-12:00	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2		11:45-12:00
12:00-12:15	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	2	2		12:00-12:15
12:15-12:30	0	0	0	0	0	6	0	6	0	0	0	0	0	5	0	5	0	11	11		12:15-12:30
12:30-12:45	0	0	0	0	0	3	0	3	0	0	0	0	0	3	0	3	0	6	6		12:30-12:45
12:45-1:00	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	0	4	4		12:45-1:00
1:00-1:15	0	0	0	0	0	4	0	4	0	0	0	0	0	2	1	3	0	7	7		1:00-1:15
1:15-1:30	1	0	0	1	1	3	0	4	0	0	0	0	0	3	0	3	1	7	8		1:15-1:30
1:30-1:45	0	0	0	0	0	4	0	4	0	0	0	0	0	4	1	5	0	9	9		1:30-1:45
1:45-2:00	0	0	1	1	0	2	0	2	0	0	0	0	0	2	1	3	1	5	6		1:45-2:00
2:00-2:15	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	1	4	5		2:00-2:15
2:15-2:30	1	0	0	1	0	3	0	3	0	0	0	0	0	2	0	2	1	5	6		2:15-2:30
2:30-2:45	0	0	1	1	0	2	0	2	0	0	0	0	0	1	0	1	1	3	4		2:30-2:45
2:45-3:00	1	0	0	1	0	5	0	5	0	0	0	0	0	5	1	6	1	11	12		2:45-3:00
8 Hour Totals	**7**	**0**	**4**	**11**	**1**	**54**	**0**	**55**	**0**	**0**	**0**	**0**	**0**	**49**	**10**	**59**	**11**	**114**	**125**		
1 Hour Totals																					
7:00-8:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.25	7:00-8:00
7:15-8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0.25	7:15-8:15
7:30-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	2	2	0.50	7:30-8:30
7:45-8:45	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	3	3	0.75	7:45-8:45
8:00-9:00	0	0	0	0	0	2	0	2	0	0	0	0	0	4	2	6	0	8	8	0.40	8:00-9:00
8:15-9:15	0	0	0	0	0	3	0	3	0	0	0	0	0	5	2	7	0	10	10	0.50	8:15-9:15
8:30-9:30	1	0	0	1	0	5	0	5	0	0	0	0	0	4	2	6	1	11	12	0.60	8:30-9:30
8:45-9:45	1	0	0	1	0	6	0	6	0	0	0	0	0	7	2	9	1	15	16	0.80	8:45-9:45
9:00-10:00	1	0	0	1	0	6	0	6	0	0	0	0	0	5	1	6	1	12	13	0.65	9:00-10:00
9:15-10:15	1	0	0	1	0	6	0	6	0	0	0	0	0	3	1	4	1	10	11	0.55	9:15-10:15
9:30-10:30	0	0	0	0	0	6	0	6	0	0	0	0	0	4	1	5	0	11	11	0.55	9:30-10:30
9:45-10:45	0	0	0	0	0	5	0	5	0	0	0	0	0	2	2	4	0	9	9	0.75	9:45-10:45
10:00-11:00	0	0	0	0	0	5	0	5	0	0	0	0	0	2	1	3	0	8	8	0.67	10:00-11:00
10:15-11:15	0	0	1	1	0	5	0	5	0	0	0	0	0	3	3	6	1	11	12	0.60	10:15-11:15
10:30-11:30	0	0	1	1	0	4	0	4	0	0	0	0	0	4	3	7	1	11	12	0.60	10:30-11:30
10:45-11:45	0	0	1	1	0	6	0	6	0	0	0	0	0	5	2	7	1	13	14	0.70	10:45-11:45
11:00-12:00	2	0	1	3	0	5	0	5	0	0	0	0	0	5	2	7	3	12	15	0.75	11:00-12:00
11:15-12:15	2	0	0	2	0	5	0	5	0	0	0	0	0	5	0	5	2	10	12	0.60	11:15-12:15
11:30-12:30	2	0	0	2	0	10	0	10	0	0	0	0	0	8	0	8	2	18	20	0.45	11:30-12:30
11:45-12:45	2	0	0	2	0	10	0	10	0	0	0	0	0	9	0	9	2	19	21	0.48	11:45-12:45
12:00-1:00	0	0	0	0	0	11	0	11	0	0	0	0	0	12	0	12	0	23	23	0.52	12:00-1:00
12:15-1:15	0	0	0	0	0	14	0	14	0	0	0	0	0	13	1	14	0	28	28	0.64	12:15-1:15
12:30-1:30	1	0	0	1	1	11	0	12	0	0	0	0	0	11	1	12	1	24	25	0.78	12:30-1:30
12:45-1:45	1	0	0	1	1	12	0	13	0	0	0	0	0	12	2	14	1	27	28	0.78	12:45-1:45
1:00-2:00	1	0	1	2	1	13	0	14	0	0	0	0	0	11	3	14	2	28	30	0.83	1:00-2:00
1:15-2:15	2	0	1	3	1	11	0	12	0	0	0	0	0	11	2	13	3	25	28	0.78	1:15-2:15
1:30-2:30	2	0	1	3	0	11	0	11	0	0	0	0	0	10	2	12	3	23	26	0.72	1:30-2:30
1:45-2:45	2	0	2	4	0	9	0	9	0	0	0	0	0	7	1	8	4	17	21	0.88	1:45-2:45
2:00-3:00	3	0	1	4	0	12	0	12	0	0	0	0	0	10	1	11	4	23	27	0.56	2:00-3:00
AM Peak 8:45-9:45	**1**	**0**	**0**	**1**	**0**	**6**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**7**	**2**	**9**	**1**	**15**	**16**	**0.80**	**AM Peak 8:45-9:45**
Mid-Day Peak 1:00-2:00	**1**	**0**	**1**	**2**	**1**	**13**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**11**	**3**	**14**	**2**	**28**	**30**	**0.83**	**Mid-Day Peak 1:00-2:00**

Wells + Associates, Inc.

McLean, Virginia

Existing Traffic Count

PROJECT:	Catholic Diocese of Arlington	DATE:	11/23/2008	SOUTHBOUND ROAD:	0
W & A JOB NO.:	4386	DAY:	Sunday	NORTHBOUND ROAD:	Stone Springs Boulevard
INTERSECTION:	Route 50 & Stone Springs Blvd.	WEATHER:	Clear	WESTBOUND ROAD:	John S. Mosby Highway
LOCATION:	Loudoun County,VA	COUNTED BY:	Di	EASTBOUND ROAD:	John S. Mosby Highway
		INPUTED BY:	agan		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound 0				Westbound John S. Mosby Highway				Northbound Stone Springs Boulevard				Eastbound John S. Mosby Highway				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
7:00-7:15	0	0	0	0	0	22	2	24	11	0	4	15	3	12	0	15	15	39	54		7:00-7:15
7:15-7:30	0	0	0	0	0	26	6	32	10	0	4	14	5	26	0	31	14	63	77		7:15-7:30
7:30-7:45	0	0	0	0	0	36	9	45	10	0	5	15	3	27	0	30	15	75	90		7:30-7:45
7:45-8:00	0	0	0	0	0	21	7	28	20	0	7	27	5	20	0	25	27	53	80		7:45-8:00
8:00-8:15	0	0	0	0	0	26	9	35	21	0	6	27	1	24	0	25	27	60	87		8:00-8:15
8:15-8:30	0	0	0	0	0	44	8	52	17	0	5	22	9	40	0	49	22	101	123		8:15-8:30
8:30-8:45	0	0	0	0	0	39	16	55	28	0	6	34	2	46	0	48	34	103	137		8:30-8:45
8:45-9:00	0	0	0	0	0	54	11	65	29	0	5	34	11	57	0	68	34	133	167		8:45-9:00
9:00-9:15	0	0	0	0	0	48	19	67	33	0	10	43	5	57	0	62	43	129	172		9:00-9:15
9:15-9:30	0	0	0	0	0	66	25	91	46	0	9	55	7	57	0	64	55	155	210		9:15-9:30
9:30-9:45	0	0	0	0	0	55	24	79	40	0	8	48	7	56	0	63	48	142	190		9:30-9:45
9:45-10:00	0	0	0	0	0	45	34	79	41	0	8	49	13	56	0	69	49	148	197		9:45-10:00
10:00-10:15	0	0	0	0	0	51	29	80	69	0	8	77	12	72	0	84	77	164	241		10:00-10:15
10:15-10:30	0	0	0	0	0	74	34	108	64	0	9	73	18	65	0	83	73	191	264		10:15-10:30
10:30-10:45	0	0	0	0	0	66	36	102	69	0	13	82	12	81	0	93	82	195	277		10:30-10:45
10:45-11:00	0	0	0	0	0	100	30	130	48	0	14	62	15	69	0	84	62	214	276		10:45-11:00
11:00-11:15	0	0	0	0	0	66	43	109	53	0	13	66	11	65	0	76	66	185	251		11:00-11:15
11:15-11:30	0	0	0	0	0	73	44	117	58	0	10	68	8	66	0	74	68	191	259		11:15-11:30
11:30-11:45	0	0	0	0	0	96	50	146	60	0	13	73	19	121	0	140	73	286	359		11:30-11:45
11:45-12:00	0	0	0	0	0	90	48	138	50	0	16	66	11	74	0	85	66	223	289		11:45-12:00
12:00-12:15	0	0	0	0	0	86	54	140	49	0	21	70	33	93	0	126	70	266	336		12:00-12:15
12:15-12:30	0	0	0	0	0	83	55	138	73	0	21	94	18	88	0	106	94	244	338		12:15-12:30
12:30-12:45	0	0	0	0	0	90	54	144	41	0	17	58	22	86	0	108	58	252	310		12:30-12:45
12:45-1:00	0	0	0	0	0	115	70	185	60	0	20	80	23	110	0	133	80	318	398		12:45-1:00
1:00-1:15	0	0	0	0	0	91	67	158	61	0	29	90	24	94	0	118	90	276	366		1:00-1:15
1:15-1:30	0	0	0	0	0	99	71	170	40	0	28	68	22	89	0	111	68	281	349		1:15-1:30
1:30-1:45	0	0	0	0	0	78	72	150	63	0	15	78	23	94	0	117	78	267	345		1:30-1:45
1:45-2:00	0	0	0	0	0	117	61	178	73	0	16	89	15	90	0	105	89	283	372		1:45-2:00
2:00-2:15	0	0	0	0	0	99	49	148	65	0	21	86	18	89	0	107	86	255	341		2:00-2:15
2:15-2:30	0	0	0	0	0	98	64	162	71	0	11	82	26	93	0	119	82	281	363		2:15-2:30
2:30-2:45	0	0	0	0	0	93	69	162	66	0	24	90	18	87	0	105	90	267	357		2:30-2:45
2:45-3:00	0	0	0	0	0	74	79	153	55	0	29	84	16	97	0	113	84	266	350		2:45-3:00
8 Hour Totals	**0**	**0**	**0**	**0**	**0**	**2,221**	**1,249**	**3,470**	**1,494**	**0**	**425**	**1,919**	**435**	**2,201**	**0**	**2,636**	**1,919**	**6,106**	**8,025**		
1 Hour Totals																					
7:00-8:00	0	0	0	0	0	105	24	129	51	0	20	71	16	85	0	101	71	230	301	0.84	7:00-8:00
7:15-8:15	0	0	0	0	0	109	31	140	61	0	22	83	14	97	0	111	83	251	334	0.93	7:15-8:15
7:30-8:30	0	0	0	0	0	127	33	160	68	0	23	91	18	111	0	129	91	289	380	0.77	7:30-8:30
7:45-8:45	0	0	0	0	0	130	40	170	86	0	24	110	17	130	0	147	110	317	427	0.78	7:45-8:45
8:00-9:00	0	0	0	0	0	163	44	207	95	0	22	117	23	167	0	190	117	397	514	0.77	8:00-9:00
8:15-9:15	0	0	0	0	0	185	54	239	107	0	26	133	27	200	0	227	133	466	599	0.87	8:15-9:15
8:30-9:30	0	0	0	0	0	207	71	278	136	0	30	166	25	217	0	242	166	520	686	0.82	8:30-9:30
8:45-9:45	0	0	0	0	0	223	79	302	148	0	32	180	30	227	0	257	180	559	739	0.88	8:45-9:45
9:00-10:00	0	0	0	0	0	214	102	316	160	0	35	195	32	226	0	258	195	574	769	0.92	9:00-10:00
9:15-10:15	0	0	0	0	0	217	112	329	196	0	33	229	39	241	0	280	229	609	838	0.87	9:15-10:15
9:30-10:30	0	0	0	0	0	225	121	346	214	0	33	247	50	249	0	299	247	645	892	0.84	9:30-10:30
9:45-10:45	0	0	0	0	0	236	133	369	243	0	38	281	55	274	0	329	281	698	979	0.88	9:45-10:45
10:00-11:00	0	0	0	0	0	291	129	420	250	0	44	294	57	287	0	344	294	764	1,058	0.95	10:00-11:00
10:15-11:15	0	0	0	0	0	306	143	449	234	0	49	283	56	280	0	336	283	785	1,068	0.96	10:15-11:15
10:30-11:30	0	0	0	0	0	305	153	458	228	0	50	278	46	281	0	327	278	785	1,063	0.96	10:30-11:30
10:45-11:45	0	0	0	0	0	335	167	502	219	0	50	269	53	321	0	374	269	876	1,145	0.80	10:45-11:45
11:00-12:00	0	0	0	0	0	325	185	510	221	0	52	273	49	326	0	375	273	885	1,158	0.81	11:00-12:00
11:15-12:15	0	0	0	0	0	345	196	541	217	0	60	277	71	354	0	425	277	966	1,243	0.87	11:15-12:15
11:30-12:30	0	0	0	0	0	355	207	562	232	0	71	303	81	376	0	457	303	1,019	1,322	0.92	11:30-12:30
11:45-12:45	0	0	0	0	0	349	211	560	213	0	75	288	84	341	0	425	288	985	1,273	0.94	11:45-12:45
12:00-1:00	0	0	0	0	0	374	233	607	223	0	79	302	96	377	0	473	302	1,080	1,382	0.87	12:00-1:00
12:15-1:15	0	0	0	0	0	379	246	625	235	0	87	322	87	378	0	465	322	1,090	1,412	0.89	12:15-1:15
12:30-1:30	0	0	0	0	0	395	262	657	202	0	94	296	91	379	0	470	296	1,127	1,423	0.89	12:30-1:30
12:45-1:45	0	0	0	0	0	383	280	663	224	0	92	316	92	387	0	479	316	1,142	1,458	0.92	12:45-1:45
1:00-2:00	0	0	0	0	0	385	271	656	237	0	88	325	84	367	0	451	325	1,107	1,432	0.96	1:00-2:00
1:15-2:15	0	0	0	0	0	393	253	646	241	0	80	321	78	362	0	440	321	1,086	1,407	0.95	1:15-2:15
1:30-2:30	0	0	0	0	0	392	246	638	272	0	63	335	82	366	0	448	335	1,086	1,421	0.95	1:30-2:30
1:45-2:45	0	0	0	0	0	407	243	650	275	0	72	347	77	359	0	436	347	1,086	1,433	0.96	1:45-2:45
2:00-3:00	0	0	0	0	0	364	261	625	257	0	85	342	78	366	0	444	342	1,069	1,411	0.97	2:00-3:00
AM Peak 10:15-11:15	**0**	**0**	**0**	**0**	**0**	**306**	**143**	**449**	**234**	**0**	**49**	**283**	**56**	**280**	**0**	**336**	**283**	**785**	**1,068**	**0.96**	**AM Peak 10:15-11:15**
Mid-Day Peak 12:45-1:45	**0**	**0**	**0**	**0**	**0**	**383**	**280**	**663**	**224**	**0**	**92**	**316**	**92**	**387**	**0**	**479**	**316**	**1,142**	**1,458**	**0.92**	**Mid-Day Peak 12:45-1:45**

Appendix E

Existing Capacity Analyses - Sunday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	455	1	2	459	0	1	0	3	0	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	511	1	2	516	0	1	0	3	0	0	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	516			512			783	1034	256	781	1035	258
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			512			783	1034	256	781	1035	258
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	99
cM capacity (veh/h)	1046			1049			281	230	744	283	230	741

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	1	256	256	1	2	258	258	0	4	7
Volume Left	1	0	0	0	2	0	0	0	1	0
Volume Right	0	0	0	1	0	0	0	0	3	7
cSH	1046	1700	1700	1700	1049	1700	1700	1700	527	741
Volume to Capacity	0.00	0.15	0.15	0.00	0.00	0.15	0.15	0.00	0.01	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	1	1
Control Delay (s)	8.4	0.0	0.0	0.0	8.4	0.0	0.0	0.0	11.9	9.9
Lane LOS	A				A				B	A
Approach Delay (s)	0.0				0.0				11.9	9.9
Approach LOS									B	A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	387	92	280	383	92	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	5.0	6.5
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	100	304	416	100	243
RTOR Reduction (vph)	0	62	0	0	0	122
Lane Group Flow (vph)	421	38	304	416	100	121
Turn Type		Perm	Prot			pm+ov
Protected Phases	2		1	6	8	1
Permitted Phases		2				8
Actuated Green, G (s)	57.5	57.5	37.5	101.5	37.0	74.5
Effective Green, g (s)	57.5	57.5	37.5	101.5	37.0	74.5
Actuated g/C Ratio	0.38	0.38	0.25	0.68	0.25	0.50
Clearance Time (s)	6.5	6.5	6.5	6.5	5.0	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1357	607	858	2395	847	786
v/s Ratio Prot	c0.12		c0.09	0.12	0.03	c0.04
v/s Ratio Perm		0.02				0.04
v/c Ratio	0.31	0.06	0.35	0.17	0.12	0.15
Uniform Delay, d1	32.4	29.2	46.3	8.9	43.8	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	1.1	0.2	0.3	0.4
Delay (s)	33.0	29.4	47.4	9.0	44.1	21.0
Level of Service	C	C	D	A	D	C
Approach Delay (s)	32.3			25.3	27.7	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	28.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	497	17	240	569	34	24	83	155	23	101	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1706			1747	
Flt Permitted	0.38	1.00	1.00	0.24	1.00	1.00		1.00			0.99	
Satd. Flow (perm)	714	3539	1583	449	3539	1583		1706			1747	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	540	18	261	618	37	26	90	168	25	110	99
RTOR Reduction (vph)	0	0	13	0	0	24	0	37	0	0	17	0
Lane Group Flow (vph)	74	540	5	261	618	13	0	247	0	0	217	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	37.1	31.0	31.0	55.6	42.5	42.5		23.4			28.4	
Effective Green, g (s)	43.1	33.5	33.5	58.6	45.0	45.0		26.4			31.4	
Actuated g/C Ratio	0.34	0.26	0.26	0.46	0.35	0.35		0.21			0.25	
Clearance Time (s)	7.0	6.5	6.5	7.0	6.5	6.5		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	316	927	415	418	1245	557		352			429	
v/s Ratio Prot	0.02	0.15		c0.10	0.17			c0.15			c0.12	
v/s Ratio Perm	0.06		0.00	c0.19		0.01						
v/c Ratio	0.23	0.58	0.01	0.62	0.50	0.02		0.70			0.51	
Uniform Delay, d1	29.4	41.1	34.9	23.8	32.6	27.1		47.1			41.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.4	0.9	0.0	2.9	0.3	0.0		6.2			4.2	
Delay (s)	29.8	42.0	35.0	26.7	32.9	27.1		53.4			45.8	
Level of Service	C	D	C	C	C	C		D			D	
Approach Delay (s)		40.4			30.9			53.4			45.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	127.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	33	74	19	49	73	66	10	118	48	118	116	25
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)	36	80	21	53	79	72	11	128	52	128	126	27

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	137	204	191	282
Volume Left (vph)	36	53	11	128
Volume Right (vph)	21	72	52	27
Hadj (s)	0.00	-0.12	-0.12	0.07
Departure Headway (s)	5.5	5.3	5.2	5.2
Degree Utilization, x	0.21	0.30	0.27	0.41
Capacity (veh/h)	587	623	642	648
Control Delay (s)	10.0	10.5	10.1	11.7
Approach Delay (s)	10.0	10.5	10.1	11.7
Approach LOS	A	B	B	B

Intersection Summary			
Delay	10.8		
HCM Level of Service	B		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	11	13	1	1	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	12	14	1	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	15				33	15
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				33	15
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1603				978	1065

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	15	15	2
Volume Left	3	0	1
Volume Right	0	1	1
cSH	1603	1700	1020
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	1.6	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	1.6	0.0	8.5
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F

2012 and 2015 Background Development Trip Generation Summary and Traffic Assignments – Sunday Conditions

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Scenario Report

Scenario:	2012 Sunday
Command:	2012
Volume:	2012 Sunday
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	2012 Sunday
Trip Distribution:	2015
Paths:	2012 BG
Routes:	Default Route
Configuration:	PM Peak

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Trip Generation Report

Forecast for 2012 Sunday

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Stone Ridge	1.00	Residential	92.00	88.00	92	88	180	6.8
	Zone 1 Subtotal					92	88	180	6.8
2	Stone Ridge	1.00	Commercial	104.00	92.00	104	92	196	7.4
	Zone 2 Subtotal					104	92	196	7.4
4	Providence G	1.00	Residential	43.00	43.00	43	43	86	3.3
	Zone 4 Subtotal					43	43	86	3.3
5	Pinebrook	1.00	Residential	45.00	43.00	45	43	88	3.3
	Zone 5 Subtotal					45	43	88	3.3
12	Braddock Cor	1.00	Residential	21.00	19.00	21	19	40	1.5
	Zone 12 Subtotal					21	19	40	1.5
15	Kirkpatrick	1.00	Residential	224.00	206.00	224	206	430	16.3
	Zone 15 Subtotal					224	206	430	16.3
18	Glascock Fie	1.00	Employment	12.00	12.00	12	12	24	0.9
	Zone 18 Subtotal					12	12	24	0.9
20	Gum Spring V	1.00	Commercial	161.00	152.00	161	152	313	11.9
	Zone 20 Subtotal					161	152	313	11.9
23	Marrwood	1.00	Residential	37.00	34.00	37	34	71	2.7
	Zone 23 Subtotal					37	34	71	2.7
27	South Villag	1.00	Residential	25.00	27.00	25	27	52	2.0
	Zone 27 Subtotal					25	27	52	2.0
28	South Riding	1.00	Residential	48.00	50.00	48	50	98	3.7
	Zone 28 Subtotal					48	50	98	3.7
29	South Riding	1.00	Employment	4.00	3.00	4	3	7	0.3
	Zone 29 Subtotal					4	3	7	0.3
30	South Riding	1.00	Residential	94.00	91.00	94	91	185	7.0
	Zone 30 Subtotal					94	91	185	7.0
31	South Riding	1.00	Commercial	67.00	70.00	67	70	137	5.2
	Zone 31 Subtotal					67	70	137	5.2
36	Brambleton E	1.00	Employment	9.00	8.00	9	8	17	0.6
	Zone 36 Subtotal					9	8	17	0.6
37	Brambleton C	1.00	Commercial	38.00	40.00	38	40	78	3.0

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Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
	Zone 37 Subtotal					38	40	78	3.0
38	Brambleton R	1.00	Residential	300.00	277.00	300	277	577	21.8
	Zone 38 Subtotal					300	277	577	21.8
40	CDA By-Right	1.00	Residential	11.00	10.00	11	10	21	0.8
	Zone 40 Subtotal					11	10	21	0.8
41	Winsbury	1.00	Residential	22.00	19.00	22	19	41	1.6
	Zone 41 Subtotal					22	19	41	1.6
TOTAL						1357	1284	2641	100.0

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Trip Distribution Report

Percent Of Trips 2015

Zone	To Gates 1	2	3	4	5	6	7	8	9	10
1	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
2	6.0	5.0	35.0	6.0	5.0	5.0	10.0	5.0	5.0	18.0
4	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
5	5.0	2.0	45.0	4.0	13.0	0.0	2.0	5.0	10.0	14.0
9	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
12	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
13	5.0	5.0	25.0	4.0	10.0	10.0	9.0	5.0	5.0	22.0
15	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
17	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
18	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
20	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
21	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
22	5.0	0.0	20.0	5.0	20.0	5.0	15.0	5.0	0.0	25.0
23	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
27	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
28	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
29	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
30	5.0	5.0	35.0	6.0	0.0	5.0	15.0	5.0	5.0	19.0
31	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
35	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
36	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
37	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
38	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
40	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
41	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0

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Turning Movement By Zone Report
2012 Sunday

#68 Route 659 (Gum Spring Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=7.7,V/C=0.121)][+0.121 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	1	7	9	0	7	0	0	11	1	9	12	0	57
Zn 2	3	5	16	0	6	0	0	17	3	18	19	0	87
Zn 4	2	5	11	0	5	0	0	0	2	11	0	0	36
Zn 5	0	0	2	0	0	0	0	6	0	2	6	0	16
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	1	1	3	0	1	0	0	0	1	3	0	0	10
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	2	4	11	0	4	0	0	0	2	12	0	0	35
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	1	0	0	1	1	0	2	0	0	0	2	7
Zn 20	19	24	57	0	26	0	0	0	20	60	0	0	206
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	1	1	8	0	0	9	0	19
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	7	0	0	6	0	13
Zn 31	0	0	0	0	0	0	0	5	0	0	6	0	11
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	1	0	1	1	0	0	0	0	0	0	1	4
Zn 38	0	8	0	8	7	1	1	6	0	0	5	9	45
Zn 40	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 41	0	2	0	1	1	1	1	1	0	0	1	1	9
Added	27	57	109	11	59	5	4	68	29	116	69	13	567
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	27	57	109	11	59	5	4	68	29	116	69	13	567
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	27	57	109	11	59	5	4	68	29	116	69	13	567

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#75 Braddock Road/Gum Spring Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=7.5,V/C=0.161)][+0.161 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	10	0	11	10	10	11	0	0	0	0	11	63
Zn 2	0	8	0	14	7	9	10	0	0	0	0	16	64
Zn 4	0	5	0	11	5	7	7	0	0	0	0	11	46
Zn 5	0	2	0	0	2	0	0	0	0	0	0	0	4
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	5	0	6	5	3	4	0	0	0	0	7	30
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	52	0	0	0	0	18	17	94	48	0	102	0	331
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	2	0	1	2	0	0	0	0	0	0	1	6
Zn 20	0	37	0	7	35	11	11	0	0	0	0	7	108
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	1	0	0	0	0	0	0	3	1	0	4	0	9
Zn 27	0	0	0	0	0	0	0	2	0	0	3	0	5
Zn 28	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	5	0	0	0	0	3	0	4	3	0	15
Zn 31	0	0	1	0	0	0	0	5	0	1	5	0	12
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	1	1	0	1	0	0	0	0	1	0	0	4
Zn 38	0	8	0	0	7	0	0	0	0	0	0	0	15
Zn 40	1	0	0	0	0	0	0	1	1	0	1	0	4
Zn 41	0	2	1	0	1	0	0	0	0	1	0	0	5
Added	53	78	8	50	73	58	59	113	49	8	122	53	724
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	53	78	8	50	73	58	59	113	49	8	122	53	724
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	53	78	8	50	73	58	59	113	49	8	122	53	724

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#80 Route 616 (Fleetwood Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=2.7,V/C=0.020)][+0.020 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	6	0	0	0	14	0	0	14	6	40
Zn 2	0	0	0	2	0	0	0	16	0	0	14	1	33
Zn 4	0	0	0	0	0	0	0	3	0	0	3	0	6
Zn 5	0	0	0	0	0	0	0	6	0	0	5	0	11
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	1	0	0	1	0	0	1	0	3
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	2	4	0	0	4	0	0	2	2	0	2	0	16
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	0	3	0	0	3	0	6
Zn 20	0	0	0	2	0	0	0	17	0	0	16	2	37
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	5	5	12	0	6	0	0	0	6	13	0	0	47
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	6	0	0	6	0	12
Zn 31	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	1	1	14	0	0	12	0	28
Zn 40	2	2	3	0	2	0	0	0	2	3	0	0	14
Zn 41	0	0	0	0	0	0	1	5	0	0	4	0	10
Added	9	12	15	11	13	2	2	94	9	16	89	10	282
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	9	12	15	11	13	2	2	94	9	16	89	10	282
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	9	12	15	11	13	2	2	94	9	16	89	10	282

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Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#83 Goshen Road/Westport Blvd.													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=2.4,V/C=0.000)][+0.000 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	1	0	0	0	0	0	0	0	1
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	6	0	0	6	0	0	0	0	0	0	0	12
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 20	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	13	24	0	0	0	0	0	12	0	22	71
Zn 27	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 28	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 31	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 40	0	0	4	7	0	0	0	0	0	4	0	6	21
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	7	17	31	7	0	0	0	0	15	0	29	106
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	7	17	31	7	0	0	0	0	15	0	29	106
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	7	17	31	7	0	0	0	0	15	0	29	106

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#85 Braddock Road/Goshen Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=1.3,V/C=0.017)][+0.017 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	10	0	0	10	0	20
Zn 2	0	0	0	0	0	0	0	8	0	0	7	0	15
Zn 4	0	0	0	0	0	0	0	7	0	0	7	0	14
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	1	0	0	0	3	0	0	3	0	7
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	6	0	0	0	45	0	0	42	6	99
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 20	0	0	0	0	0	0	0	11	0	0	11	0	22
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	4	0	8	9	0	0	0	0	4	25
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	2	0	0	3	0	5
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	3	0	0	3	0	6
Zn 31	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 40	0	0	0	2	0	2	2	0	0	0	0	2	8
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	13	0	10	11	96	0	0	90	13	233
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	13	0	10	11	96	0	0	90	13	233
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	13	0	10	11	96	0	0	90	13	233

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#94 Stone Springs Blvd./Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=4.9,V/C=0.050)][+0.050 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	18	11	11	0	11	0	0	1	19	12	1	0	84
Zn 2	13	10	17	0	11	0	0	3	14	19	3	0	90
Zn 4	1	2	0	0	2	0	0	2	1	0	2	0	10
Zn 5	0	0	0	0	0	0	0	6	0	0	6	0	12
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	2	0	2	2	1	3	0	0	0	2	0	12
Zn 20	0	0	0	0	0	0	0	20	0	0	19	0	39
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	2	2	10	0	0	11	0	25
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	7	0	0	6	0	13
Zn 31	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	7	7	6	0	0	6	0	26
Zn 40	0	0	0	0	0	1	1	2	0	0	2	0	6
Zn 41	0	0	0	0	0	3	3	1	0	0	1	1	9
Added	32	24	28	3	26	14	16	69	34	31	69	1	347
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	32	24	28	3	26	14	16	69	34	31	69	1	347
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	32	24	28	3	26	14	16	69	34	31	69	1	347

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#95 West Spine Road/ Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=0.0,V/C=0.000)][+0.000 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	20	0	0	21	0	41
Zn 2	0	0	0	0	0	0	0	32	0	0	36	0	68
Zn 4	0	0	0	0	0	0	0	11	0	0	11	0	22
Zn 5	0	0	0	0	0	0	0	8	0	0	7	0	15
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	0	0	0	3	0	0	3	0	6
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	11	0	0	12	0	23
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 20	0	0	0	0	0	0	0	57	0	0	60	0	117
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	0	0	8	0	0	9	0	17
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	7	0	0	7	0	14
Zn 31	0	0	0	0	0	0	0	6	0	0	6	0	12
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	0	0	0	0	0	0	14	0	0	14	0	28
Zn 40	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 41	0	0	0	0	0	0	0	2	0	0	2	0	4
Added	0	0	0	0	0	0	0	187	0	0	198	0	385
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	0	0	0	0	187	0	0	198	0	385
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	0	0	0	0	187	0	0	198	0	385

Scenario Report

Scenario:	2015 Sunday
Command:	2015
Volume:	2015 Sunday
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	2015 Sunday
Trip Distribution:	2015
Paths:	2015 BG
Routes:	Default Route
Configuration:	AM Peak

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Trip Generation Report

Forecast for 2015 Sunday

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Stone Ridge	1.00	Residential	183.00	183.00	183	183	366	6.6
	Zone 1 Subtotal					183	183	366	6.6
2	Stone Ridge	1.00	Commercial	458.00	452.00	458	452	910	16.3
	Zone 2 Subtotal					458	452	910	16.3
4	Providence G	1.00	Residential	43.00	43.00	43	43	86	1.5
	Zone 4 Subtotal					43	43	86	1.5
5	Pinebrook	1.00	Residential	45.00	43.00	45	43	88	1.6
	Zone 5 Subtotal					45	43	88	1.6
9	CD Smith Pro	1.00	Residential	76.00	72.00	76	72	148	2.7
	Zone 9 Subtotal					76	72	148	2.7
12	Braddock Cor	1.00	Residential	21.00	19.00	21	19	40	0.7
	Zone 12 Subtotal					21	19	40	0.7
13	Kirkpatrick	1.00	Residential	82.00	78.00	82	78	160	2.9
	Zone 13 Subtotal					82	78	160	2.9
15	Kirkpatrick	1.00	Residential	276.00	251.00	276	251	527	9.5
	Zone 15 Subtotal					276	251	527	9.5
17	Glascock Fie	1.00	Residential	40.00	42.00	40	42	82	1.5
	Zone 17 Subtotal					40	42	82	1.5
18	Glascock Fie	1.00	Employment	12.00	12.00	12	12	24	0.4
	Zone 18 Subtotal					12	12	24	0.4
20	Gum Spring V	1.00	Commercial	161.00	152.00	161	152	313	5.6
	Zone 20 Subtotal					161	152	313	5.6
21	West Spine P	1.00	By Right Emplo	5.00	4.00	5	4	9	0.2
	Zone 21 Subtotal					5	4	9	0.2
22	Westport By	1.00	Residential	315.00	280.00	315	280	595	10.7
	Zone 22 Subtotal					315	280	595	10.7
23	Marrwood	1.00	Residential	37.00	34.00	37	34	71	1.3
	Zone 23 Subtotal					37	34	71	1.3
27	South Villag	1.00	Residential	25.00	27.00	25	27	52	0.9
	Zone 27 Subtotal					25	27	52	0.9
28	South Riding	1.00	Residential	89.00	92.00	89	92	181	3.2

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Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
	Zone 28 Subtotal					89	92	181	3.2
29	South Riding	1.00	Employment	4.00	3.00	4	3	7	0.1
	Zone 29 Subtotal					4	3	7	0.1
30	South Riding	1.00	Residential	176.00	166.00	176	166	342	6.1
	Zone 30 Subtotal					176	166	342	6.1
31	South Riding	1.00	Commercial	98.00	102.00	98	102	200	3.6
	Zone 31 Subtotal					98	102	200	3.6
35	Arcola Cente	1.00	Commercial	153.00	159.00	153	159	312	5.6
	Zone 35 Subtotal					153	159	312	5.6
36	Brambleton E	1.00	Employment	9.00	8.00	9	8	17	0.3
	Zone 36 Subtotal					9	8	17	0.3
37	Brambleton C	1.00	Commercial	57.00	60.00	57	60	117	2.1
	Zone 37 Subtotal					57	60	117	2.1
38	Brambleton R	1.00	Residential	451.00	415.00	451	415	866	15.5
	Zone 38 Subtotal					451	415	866	15.5
40	CDA By-Right	1.00	Residential	11.00	10.00	11	10	21	0.4
	Zone 40 Subtotal					11	10	21	0.4
41	Winsbury	1.00	Residential	22.00	19.00	22	19	41	0.7
	Zone 41 Subtotal					22	19	41	0.7
TOTAL						2849	2726	5575	100.0

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Trip Distribution Report

Percent Of Trips 2015

Zone	To Gates 1	2	3	4	5	6	7	8	9	10
1	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
2	6.0	5.0	35.0	6.0	5.0	5.0	10.0	5.0	5.0	18.0
4	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
5	5.0	2.0	45.0	4.0	13.0	0.0	2.0	5.0	10.0	14.0
9	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
12	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
13	5.0	5.0	25.0	4.0	10.0	10.0	9.0	5.0	5.0	22.0
15	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
17	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
18	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
20	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
21	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
22	5.0	0.0	20.0	5.0	20.0	5.0	15.0	5.0	0.0	25.0
23	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
27	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
28	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
29	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
30	5.0	5.0	35.0	6.0	0.0	5.0	15.0	5.0	5.0	19.0
31	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
35	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
36	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
37	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
38	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
40	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
41	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0

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Turning Movement By Zone Report
2015 Sunday

#68 Route 659 (Gum Spring Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=0.2,V/C=0.014)][+0.014 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	19	0	0	19	0	38
Zn 2	0	0	0	0	0	0	0	60	0	0	61	0	121
Zn 4	0	0	0	0	0	0	0	3	0	0	3	0	6
Zn 5	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 9	0	0	0	0	0	0	0	1	0	0	2	0	3
Zn 12	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 17	0	0	0	0	0	8	0	8	0	0	4	7	27
Zn 18	0	0	0	0	0	2	0	3	0	0	0	3	8
Zn 20	0	0	0	0	0	0	0	33	0	0	31	0	64
Zn 21	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 22	0	0	0	0	0	0	0	48	0	0	54	0	102
Zn 23	0	0	0	0	0	0	0	8	0	0	9	0	17
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	9	0	0	9	0	18
Zn 31	0	0	0	0	0	0	0	7	0	0	8	0	15
Zn 35	0	0	0	0	0	0	0	21	0	0	22	0	43
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	0	0	0	0	0	0	11	0	0	10	0	21
Zn 40	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 41	0	0	0	0	0	2	0	1	0	0	2	1	6
Added	0	0	0	0	0	11	0	249	0	0	247	11	518
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	0	0	11	0	249	0	0	247	11	518
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	0	0	11	0	249	0	0	247	11	518

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#75 Braddock Road/Gum Spring Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=308.8,V/C=1.644)][+1.644 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	27	0	24	27	23	23	0	0	0	0	24	148
Zn 2	0	55	0	75	54	40	41	0	0	0	0	76	341
Zn 4	0	4	0	11	4	6	6	0	0	0	0	11	42
Zn 5	0	0	0	0	0	1	1	0	0	0	0	0	2
Zn 9	5	0	0	0	0	13	12	30	4	0	32	0	96
Zn 12	0	5	0	6	5	3	4	0	0	0	0	7	30
Zn 13	1	0	0	0	0	11	10	18	1	0	19	0	60
Zn 15	60	0	0	0	0	43	39	96	54	0	106	0	398
Zn 17	0	10	0	3	8	0	0	0	0	0	0	2	23
Zn 18	0	2	0	1	1	0	0	0	0	0	0	1	5
Zn 20	0	37	0	7	35	11	11	0	0	0	0	7	108
Zn 21	0	1	0	0	1	1	1	0	0	0	0	0	4
Zn 22	0	0	0	0	0	41	36	34	0	0	38	0	149
Zn 23	0	0	0	0	0	1	1	4	0	0	4	0	10
Zn 27	0	0	0	0	0	0	0	2	0	0	3	0	5
Zn 28	0	0	0	0	0	0	0	8	0	0	9	0	17
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	3	1	0	3	0	0	13	0	1	13	0	34
Zn 31	0	0	0	0	0	0	0	14	0	0	15	0	29
Zn 35	0	2	0	0	2	1	1	0	0	0	0	0	6
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	1	1	0	1	0	0	0	0	1	0	0	4
Zn 38	0	2	0	0	2	0	0	0	0	0	0	0	4
Zn 40	1	0	0	0	0	0	0	1	1	0	1	0	4
Zn 41	0	0	1	0	0	0	1	0	0	1	0	0	3
Added	66	149	3	126	143	195	188	222	60	3	239	128	1522
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	66	149	3	126	143	195	188	222	60	3	239	128	1522
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	66	149	3	126	143	195	188	222	60	3	239	128	1522

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#80 Route 616 (Fleetwood Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=7.0,V/C=0.173)][+0.173 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	12	0	0	0	23	0	0	23	12	70
Zn 2	0	0	0	14	0	0	0	51	0	0	50	14	129
Zn 4	0	0	0	0	0	0	0	3	0	0	3	0	6
Zn 5	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 9	0	4	1	0	4	0	0	0	0	1	0	0	10
Zn 12	0	0	0	0	1	0	0	1	0	0	1	0	3
Zn 13	0	3	0	0	4	0	0	0	0	0	0	0	7
Zn 15	2	5	0	0	6	0	0	1	2	0	1	0	17
Zn 17	0	0	0	0	0	0	0	8	0	0	12	0	20
Zn 18	0	0	1	0	0	0	0	2	0	1	2	0	6
Zn 20	0	0	0	5	0	0	0	17	0	0	16	5	43
Zn 21	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 22	45	35	50	0	39	0	0	0	50	57	0	0	276
Zn 23	5	5	11	0	5	0	0	0	6	11	0	0	43
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	2	0	0	0	7	0	0	7	2	18
Zn 31	0	0	0	0	0	0	0	6	0	0	7	0	13
Zn 35	0	0	1	0	0	0	0	22	0	1	23	0	47
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	10	0	0	9	0	0	22	0	0	20	0	61
Zn 40	2	2	3	0	2	0	0	0	2	3	0	0	14
Zn 41	0	0	0	0	0	0	1	5	0	0	6	0	12
Added	54	64	67	32	69	1	1	181	61	74	182	32	818
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	54	64	67	32	69	1	1	181	61	74	182	32	818
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	54	64	67	32	69	1	1	181	61	74	182	32	818

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#83 Goshen Road/Westport Blvd.													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=3.1,V/C=0.000)][+0.000 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	5	0	0	5	0	0	0	0	0	0	0	10
Zn 12	0	0	0	0	1	0	0	0	0	0	0	0	1
Zn 13	0	3	0	0	4	0	0	0	0	0	0	0	7
Zn 15	0	7	0	0	8	0	0	0	0	0	0	0	15
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	1	0	0	1	0	0	0	0	0	0	0	2
Zn 20	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	146	130	0	0	0	0	0	276
Zn 23	0	0	15	22	0	0	0	0	0	14	0	20	71
Zn 27	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 28	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 31	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 35	0	1	0	0	1	0	0	0	0	0	0	0	2
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	10	0	0	9	0	0	0	0	0	0	0	19
Zn 40	0	0	4	7	0	0	0	0	0	4	0	6	21
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	28	19	29	28	146	130	0	0	17	0	27	424
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	28	19	29	28	146	130	0	0	17	0	27	424
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	28	19	29	28	146	130	0	0	17	0	27	424

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#85 Braddock Road/Goshen Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=1.1,V/C=0.074)][+0.074 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	22	0	0	22	0	44
Zn 2	0	0	0	0	0	0	0	33	0	0	32	0	65
Zn 4	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 5	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 9	0	0	0	5	0	0	0	13	0	0	13	5	36
Zn 12	0	0	0	1	0	0	0	3	0	0	2	0	6
Zn 13	0	0	0	4	0	0	0	12	0	0	11	3	30
Zn 15	0	0	0	8	0	0	0	41	0	0	37	7	93
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	1	1	0	0	0	0	0	2
Zn 20	0	0	0	0	0	0	0	11	0	0	11	0	22
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	84	0	0	95	0	179
Zn 23	0	0	0	9	0	5	6	0	0	0	0	9	29
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	4	0	0	5	0	9
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 31	0	0	0	0	0	0	0	7	0	0	7	0	14
Zn 35	0	0	0	1	0	0	0	1	0	0	1	1	4
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	9	0	0	0	0	0	0	0	10	19
Zn 40	0	0	0	2	0	2	2	0	0	0	0	2	8
Zn 41	0	0	0	0	0	0	0	1	0	0	0	0	1
Added	0	0	0	38	0	8	8	244	0	0	247	38	583
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	38	0	8	8	244	0	0	247	38	583
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	38	0	8	8	244	0	0	247	38	583

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#94 Stone Springs Blvd./Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=11.1,V/C=0.312)][+0.312 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	33	23	17	0	23	0	0	2	33	17	2	0	150
Zn 2	56	45	52	0	46	0	0	8	56	53	8	0	324
Zn 4	1	4	0	0	4	0	0	3	1	0	3	0	16
Zn 5	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 9	0	1	0	0	1	0	0	1	0	0	2	0	5
Zn 12	0	1	0	0	1	0	0	1	0	0	1	0	4
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 17	0	8	0	8	8	4	8	0	0	0	8	4	48
Zn 18	0	1	0	3	1	1	3	0	0	0	2	0	11
Zn 20	1	2	0	11	2	0	0	21	1	0	20	11	69
Zn 21	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 22	0	0	0	0	0	3	3	48	0	0	54	0	108
Zn 23	0	0	0	0	0	2	2	8	0	0	9	0	21
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	9	0	0	9	0	18
Zn 31	0	0	0	1	0	0	0	6	0	0	7	1	15
Zn 35	0	0	0	0	0	2	2	21	0	0	22	0	47
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	0	0	0	0	10	11	11	0	0	10	0	42
Zn 40	0	0	0	0	0	1	1	2	0	0	2	0	6
Zn 41	0	0	0	1	0	4	5	0	0	0	2	2	14
Added	90	85	69	25	87	27	35	155	91	70	171	17	922
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	90	85	69	25	87	27	35	155	91	70	171	17	922
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	90	85	69	25	87	27	35	155	91	70	171	17	922

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#95 West Spine Road/ Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=12.0,V/C=0.419)][+0.419 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	2	0	34	0	0	0	0	17	2	34	17	0	106
Zn 2	8	0	122	0	0	0	0	52	8	124	53	0	367
Zn 4	3	0	14	0	0	0	0	0	3	14	0	0	34
Zn 5	0	0	2	0	0	0	0	5	0	2	5	0	14
Zn 9	0	0	11	0	0	0	0	1	0	11	1	0	24
Zn 12	1	0	3	0	0	0	0	0	1	4	0	0	9
Zn 13	0	0	10	0	0	0	0	0	0	11	0	0	21
Zn 15	1	0	38	0	0	0	0	0	1	42	0	0	82
Zn 17	5	0	0	0	0	0	0	6	2	0	6	0	19
Zn 18	1	0	0	0	0	0	0	2	1	0	2	0	6
Zn 20	31	0	66	0	0	0	0	0	33	70	0	0	200
Zn 21	0	0	2	0	0	0	0	0	1	2	0	0	5
Zn 22	0	0	36	0	0	0	0	48	0	41	54	0	179
Zn 23	0	0	1	0	0	0	0	8	0	1	9	0	19
Zn 27	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 28	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	9	0	0	9	0	18
Zn 31	0	0	0	0	0	0	0	7	0	0	8	0	15
Zn 35	0	0	2	0	0	0	0	21	0	2	22	0	47
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	1	0	0	0	0	1	0	1	1	0	4
Zn 38	0	0	2	0	0	0	0	11	0	2	10	0	25
Zn 40	0	0	0	0	0	0	0	2	0	0	2	0	4
Zn 41	1	0	0	0	0	0	0	1	0	0	2	0	4
Added	53	0	344	0	0	0	0	198	51	360	205	0	1211
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	53	0	344	0	0	0	0	198	51	360	205	0	1211
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	53	0	344	0	0	0	0	198	51	360	205	0	1211

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Appendix G

Gum Spring Road Existing Traffic Re-Assignment – Sunday Conditions

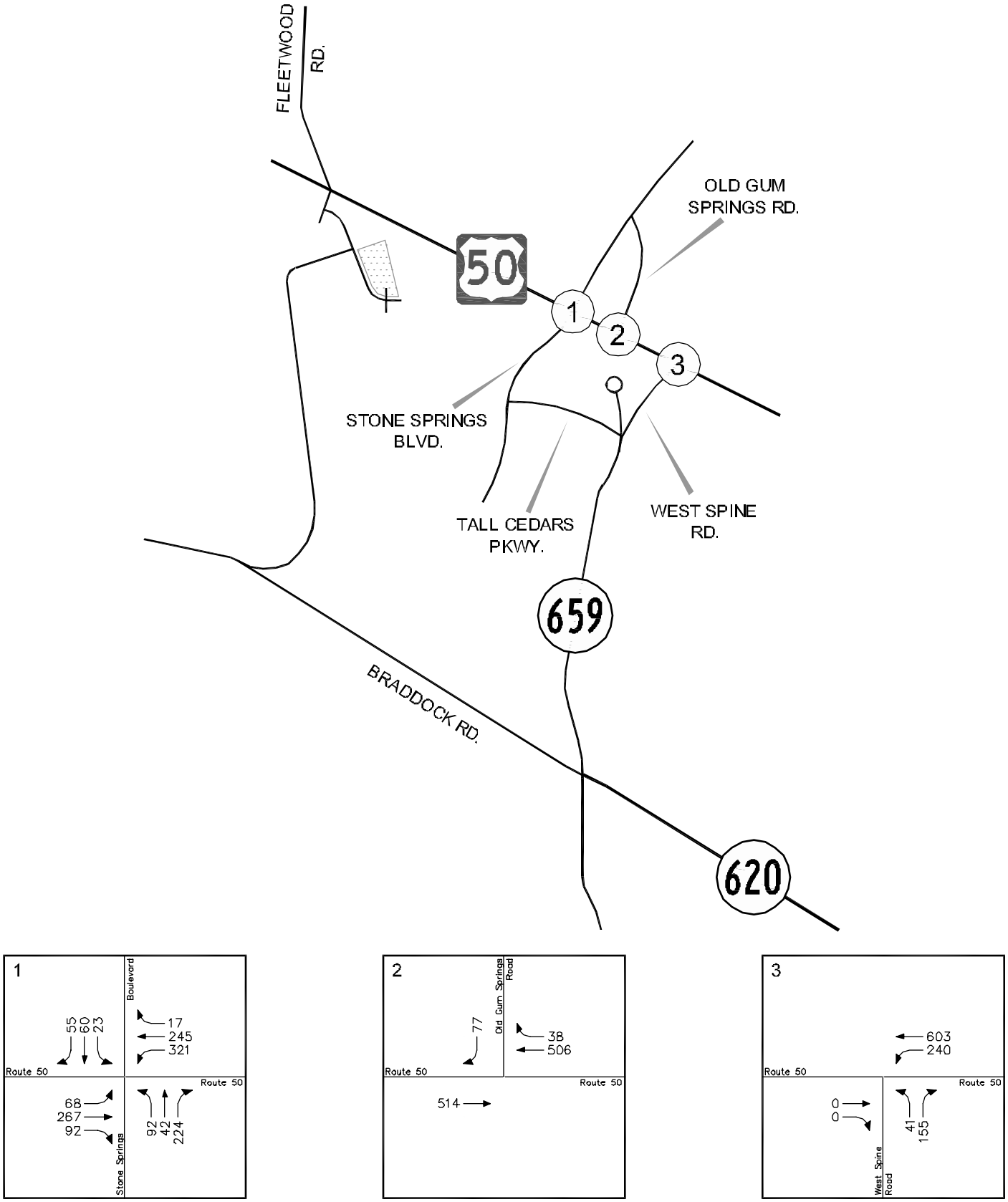

Figure G-1
Re-Assignment of Existing Traffic Volumes
for 2015 COnditions (Sunday)

SUN PEAK HOUR
DOO

North

Catholic Diocese of Arlington
Loudoun County, Virginia

G-1
Wells + Associates, Inc.

O:\PROJECTS\4001 - 4500\4386 CDA PROPERTY-LOUDOUN\GRAPHICS\4386 - RPT GRAPHICS 09.04.09.DWG

JCP

Appendix H

2012 Capacity Analyses Without Special Exception Uses – Sunday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	587	10	18	586	10	10	12	18	11	3	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	2	660	11	20	658	11	11	13	20	12	3	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	670			671			1044	1374	330	1060	1374	329
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	670			671			1044	1374	330	1060	1374	329
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			94	90	97	92	98	99
cM capacity (veh/h)	916			916			174	141	666	157	141	666

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	2	330	330	11	20	329	329	11	45	25
Volume Left	2	0	0	0	20	0	0	0	11	12
Volume Right	0	0	0	11	0	0	0	11	20	9
cSH	916	1700	1700	1700	916	1700	1700	1700	236	213
Volume to Capacity	0.00	0.19	0.19	0.01	0.02	0.19	0.19	0.01	0.19	0.12
Queue Length 95th (ft)	0	0	0	0	2	0	0	0	17	10
Control Delay (s)	8.9	0.0	0.0	0.0	9.0	0.0	0.0	0.0	23.8	24.1
Lane LOS	A				A				C	C
Approach Delay (s)	0.0				0.3				23.8	24.1
Approach LOS									C	C

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	488	134	334	484	1	132	24	270	3	26	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.45	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	832	5085	1583	3433	5085	1583	3433	1863	1583	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	530	146	363	526	1	143	26	293	3	28	15
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	48	0	0	14
Lane Group Flow (vph)	17	530	33	363	526	1	143	26	246	3	28	1
Turn Type	Perm		Perm	Prot		Perm	Prot		pm+ov	Perm		Perm
Protected Phases		2		1	6		3	8	1		4	
Permitted Phases	2		2			6			8	4		4
Actuated Green, G (s)	14.6	14.6	14.6	13.8	34.4	34.4	9.0	18.8	32.6	3.8	3.8	3.8
Effective Green, g (s)	14.6	14.6	14.6	13.8	34.4	34.4	9.0	18.8	32.6	3.8	3.8	3.8
Actuated g/C Ratio	0.22	0.22	0.22	0.21	0.53	0.53	0.14	0.29	0.50	0.06	0.06	0.06
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	186	1139	354	727	2683	835	474	537	937	109	109	92
v/s Ratio Prot		c0.10		c0.11	0.10		0.04	0.01	c0.06		0.02	
v/s Ratio Perm	0.02		0.02			0.00			0.10	0.00		0.00
v/c Ratio	0.09	0.47	0.09	0.50	0.20	0.00	0.30	0.05	0.26	0.03	0.26	0.01
Uniform Delay, d1	20.0	21.9	20.0	22.7	8.1	7.3	25.3	16.7	9.4	29.0	29.4	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.1	0.5	0.0	0.0	0.4	0.0	0.1	0.1	1.3	0.0
Delay (s)	20.3	22.2	20.2	23.2	8.2	7.3	25.6	16.8	9.5	29.1	30.6	29.0
Level of Service	C	C	C	C	A	A	C	B	A	C	C	C
Approach Delay (s)		21.7			14.3			14.9			30.0	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	606	47	376	685	51	53	147	277	36	168	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1707			1768	
Flt Permitted	0.30	1.00	1.00	0.13	1.00	1.00		0.99			0.99	
Satd. Flow (perm)	564	3539	1583	236	3539	1583		1707			1768	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	659	51	409	745	55	58	160	301	39	183	113
RTOR Reduction (vph)	0	0	33	0	0	31	0	33	0	0	12	0
Lane Group Flow (vph)	85	659	18	409	745	24	0	486	0	0	323	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2		2	6		6						
Actuated Green, G (s)	39.5	31.7	31.7	62.7	47.9	47.9		34.0			28.0	
Effective Green, g (s)	45.5	34.2	34.2	65.7	50.4	50.4		37.0			31.0	
Actuated g/C Ratio	0.31	0.24	0.24	0.45	0.35	0.35		0.25			0.21	
Clearance Time (s)	7.0	6.5	6.5	7.0	6.5	6.5		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	266	834	373	392	1228	549		435			377	
v/s Ratio Prot	0.02	0.19		c0.19	0.21			c0.28			c0.18	
v/s Ratio Perm	0.08		0.01	c0.28		0.01						
v/c Ratio	0.32	0.79	0.05	1.04	0.61	0.04		1.12			0.86	
Uniform Delay, d1	36.1	52.1	42.9	43.2	39.2	31.4		54.1			55.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.7	5.1	0.1	57.2	0.9	0.0		79.2			21.5	
Delay (s)	36.8	57.3	43.0	100.4	40.1	31.4		133.3			76.5	
Level of Service	D	E	D	F	D	C		F			E	
Approach Delay (s)		54.2			60.1			133.3			76.5	
Approach LOS		D			E			F			E	

Intersection Summary			
HCM Average Control Delay	73.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	145.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	95	193	70	61	201	124	64	206	60	178	199	85
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)	103	210	76	66	218	135	70	224	65	193	216	92

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	389	420	359	502
Volume Left (vph)	103	66	70	193
Volume Right (vph)	76	135	65	92
Hadj (s)	-0.03	-0.13	-0.04	0.00
Departure Headway (s)	9.4	9.3	9.5	9.4
Degree Utilization, x	1.02	1.08	0.95	1.32
Capacity (veh/h)	389	395	373	388
Control Delay (s)	81.8	101.5	65.9	186.8
Approach Delay (s)	81.8	101.5	65.9	186.8
Approach LOS	F	F	F	F

Intersection Summary			
Delay	114.9		
HCM Level of Service	F		
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	14	108	103	14	14	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	117	112	15	15	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	127				267	120
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	127				267	120
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				98	99
cM capacity (veh/h)	1459				714	932

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	133	127	12
Volume Left	15	0	0
Volume Right	0	15	12
cSH	1459	1700	932
Volume to Capacity	0.01	0.07	0.01
Queue Length 95th (ft)	1	0	1
Control Delay (s)	0.9	0.0	8.9
Lane LOS	A		A
Approach Delay (s)	0.9	0.0	Err
Approach LOS			F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	17	0	0	0	15	29	0	0	31	10
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)	12	0	18	0	0	0	16	32	0	0	34	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	103	103	39	122	109	32	45			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	103	103	39	122	109	32	45			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	100	100	100	99			100		
cM capacity (veh/h)	870	779	1032	831	773	1042	1564			1581		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	0	48	45
Volume Left	12	0	16	0
Volume Right	18	0	0	11
cSH	962	1700	1564	1581
Volume to Capacity	0.03	0.00	0.01	0.00
Queue Length 95th (ft)	2	0	1	0
Control Delay (s)	8.9	0.0	2.5	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.9	0.0	2.5	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	606	47	376	685	51	53	147	277	36	168	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.99	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1707			1768	
Flt Permitted	0.36	1.00	1.00	0.19	1.00	1.00		0.92			0.90	
Satd. Flow (perm)	665	5085	1583	357	5085	1583		1585			1606	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	659	51	409	745	55	58	160	301	39	183	113
RTOR Reduction (vph)	0	0	40	0	0	36	0	31	0	0	11	0
Lane Group Flow (vph)	85	659	11	409	745	19	0	488	0	0	324	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	33.8	26.0	26.0	60.3	45.5	45.5		63.1			63.1	
Effective Green, g (s)	39.8	28.5	28.5	63.3	48.0	48.0		66.1			66.1	
Actuated g/C Ratio	0.29	0.21	0.21	0.46	0.35	0.35		0.48			0.48	
Clearance Time (s)	7.0	6.5	6.5	7.0	6.5	6.5		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	281	1059	330	478	1783	555		765			775	
v/s Ratio Prot	0.02	0.13		c0.19	0.15							
v/s Ratio Perm	0.06		0.01	c0.21		0.01		c0.31			0.20	
v/c Ratio	0.30	0.62	0.03	0.86	0.42	0.03		0.64			0.42	
Uniform Delay, d1	36.2	49.3	43.2	31.0	33.8	29.2		26.5			22.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.6	1.1	0.0	14.0	0.2	0.0		1.8			1.7	
Delay (s)	36.8	50.4	43.2	44.9	34.0	29.2		28.2			24.6	
Level of Service	D	D	D	D	C	C		C			C	
Approach Delay (s)		48.5			37.5			28.2			24.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	37.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	136.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	193	70	61	201	124	64	206	60	178	199	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.96			0.98			0.98	
Flt Protected		0.99			0.99			0.99			0.98	
Satd. Flow (prot)		1790			1768			1800			1782	
Flt Permitted		0.75			0.89			0.85			0.71	
Satd. Flow (perm)		1358			1579			1546			1287	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	210	76	66	218	135	70	224	65	193	216	92
RTOR Reduction (vph)	0	9	0	0	17	0	0	8	0	0	9	0
Lane Group Flow (vph)	0	380	0	0	402	0	0	351	0	0	492	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.9			26.9			34.3			34.3	
Effective Green, g (s)		26.9			26.9			34.3			34.3	
Actuated g/C Ratio		0.38			0.38			0.48			0.48	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		513			597			745			620	
v/s Ratio Prot												
v/s Ratio Perm		c0.28			0.25			0.23			c0.38	
v/c Ratio		0.74			0.67			0.47			0.79	
Uniform Delay, d1		19.1			18.5			12.4			15.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.7			3.0			0.5			6.9	
Delay (s)		24.9			21.5			12.8			22.4	
Level of Service		C			C			B			C	
Approach Delay (s)		24.9			21.5			12.8			22.4	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Appendix I

2015 Capacity Analyses Without Special Exception Uses – Sunday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	704	62	76	709	32	55	64	70	32	69	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		5.0	4.0		5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1821	1583		1818	
Flt Permitted	0.35	1.00	1.00	0.25	1.00	1.00		0.84	1.00		0.87	
Satd. Flow (perm)	653	3539	1583	470	3539	1583		1558	1583		1602	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1	791	70	85	797	36	62	72	79	36	78	9
RTOR Reduction (vph)	0	0	41	0	0	18	0	0	55	0	2	0
Lane Group Flow (vph)	1	791	29	85	797	18	0	134	24	0	121	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	22.5	21.6	21.6	30.6	25.7	25.7		10.8	15.8		10.8	
Effective Green, g (s)	22.5	21.6	21.6	30.6	25.7	25.7		10.8	15.8		10.8	
Actuated g/C Ratio	0.43	0.41	0.41	0.58	0.49	0.49		0.21	0.30		0.21	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		5.0	4.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	300	1459	653	399	1736	776		321	477		330	
v/s Ratio Prot	0.00	c0.22		c0.02	c0.23				0.00			
v/s Ratio Perm	0.00		0.02	0.10		0.01		c0.09	0.01		0.08	
v/c Ratio	0.00	0.54	0.04	0.21	0.46	0.02		0.42	0.05		0.37	
Uniform Delay, d1	8.5	11.7	9.2	5.3	8.8	6.9		18.1	13.0		17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.4	0.0	0.3	0.2	0.0		0.9	0.0		0.7	
Delay (s)	8.5	12.1	9.2	5.6	9.0	6.9		18.9	13.0		18.5	
Level of Service	A	B	A	A	A	A		B	B		B	
Approach Delay (s)		11.8			8.6			16.8			18.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	21.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	462	197	439	452	37	196	133	326	51	156	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.46	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	862	5085	1583	3433	5085	1583	3433	1863	1583	1238	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	502	214	477	491	40	213	145	354	55	170	98
RTOR Reduction (vph)	0	0	164	0	0	19	0	0	46	0	0	82
Lane Group Flow (vph)	123	502	50	477	491	21	213	145	308	55	170	16
Turn Type	Perm		Perm	Prot		Perm	Prot		pm+ov	Perm		Perm
Protected Phases		2		1	6		3	8	1		4	
Permitted Phases	2		2			6			8	4		4
Actuated Green, G (s)	22.3	22.3	22.3	21.2	49.5	49.5	12.4	34.1	55.3	15.7	15.7	15.7
Effective Green, g (s)	22.3	22.3	22.3	21.2	49.5	49.5	12.4	34.1	55.3	15.7	15.7	15.7
Actuated g/C Ratio	0.23	0.23	0.23	0.22	0.52	0.52	0.13	0.36	0.58	0.16	0.16	0.16
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	201	1186	369	761	2633	820	445	665	1015	203	306	260
v/s Ratio Prot		0.10		c0.14	0.10		c0.06	0.08	0.07		c0.09	
v/s Ratio Perm	c0.14		0.03			0.01			0.13	0.04		0.01
v/c Ratio	0.61	0.42	0.14	0.63	0.19	0.03	0.48	0.22	0.30	0.27	0.56	0.06
Uniform Delay, d1	32.8	31.2	29.0	33.6	12.3	11.3	38.6	21.4	10.3	34.9	36.7	33.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	0.2	0.2	1.6	0.0	0.0	0.8	0.2	0.2	0.7	2.2	0.1
Delay (s)	38.2	31.4	29.2	35.2	12.3	11.3	39.4	21.6	10.5	35.7	38.9	33.8
Level of Service	D	C	C	D	B	B	D	C	B	D	D	C
Approach Delay (s)		31.8			23.1			21.4			36.8	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	95.6	Sum of lost time (s)	24.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	839	828	55	0	99
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	912	900	60	0	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1229	1165			
pX, platoon unblocked	0.96				0.97	0.96
vC, conflicting volume	960				1204	300
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	815				827	128
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	88
cM capacity (veh/h)	777				300	863

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	304	304	304	300	300	300	60	108
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	60	108
cSH	1700	1700	1700	1700	1700	1700	1700	863
Volume to Capacity	0.18	0.18	0.18	0.18	0.18	0.18	0.04	0.12
Queue Length 95th (ft)	0	0	0	0	0	0	0	11
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8
Lane LOS								A
Approach Delay (s)	0.0			0.0				9.8
Approach LOS								A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	226	307	82	59	323	204	77	285	58	262	276	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.95			0.98			0.96	
Flt Protected		0.98			1.00			0.99			0.98	
Satd. Flow (prot)		1796			1766			1811			1759	
Flt Permitted		0.46			0.88			0.76			0.67	
Satd. Flow (perm)		844			1560			1398			1193	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	334	89	64	351	222	84	310	63	285	300	243
RTOR Reduction (vph)	0	5	0	0	20	0	0	6	0	0	15	0
Lane Group Flow (vph)	0	664	0	0	617	0	0	451	0	0	813	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		39.0			39.0			51.0			51.0	
Effective Green, g (s)		39.0			39.0			51.0			51.0	
Actuated g/C Ratio		0.39			0.39			0.51			0.51	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		329			608			713			608	
v/s Ratio Prot												
v/s Ratio Perm		c0.79			0.40			0.32			c0.68	
v/c Ratio		2.02			1.02			0.63			1.34	
Uniform Delay, d1		30.5			30.5			17.7			24.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		468.1			40.5			1.8			162.5	
Delay (s)		498.6			71.0			19.6			187.0	
Level of Service		F			E			B			F	
Approach Delay (s)		498.6			71.0			19.6			187.0	
Approach LOS		F			E			B			F	

Intersection Summary			
HCM Average Control Delay	209.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	148.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	11	237	262	41	39	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	258	285	45	42	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	329				589	307
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	329				589	307
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	99
cM capacity (veh/h)	1230				466	733

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	270	329	52
Volume Left	12	0	42
Volume Right	0	45	10
cSH	1230	1700	501
Volume to Capacity	0.01	0.19	0.10
Queue Length 95th (ft)	1	0	9
Control Delay (s)	0.4	0.0	13.0
Lane LOS	A		B
Approach Delay (s)	0.4	0.0	13.0
Approach LOS			B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	61	130	0	60	146
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	66	141	0	65	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						462
pX, platoon unblocked						
vC, conflicting volume	430	71			141	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430	71			141	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			95	
cM capacity (veh/h)	528	977			1439	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	66	94	47	65	159
Volume Left	0	0	0	65	0
Volume Right	66	0	0	0	0
cSH	977	1700	1700	1439	1700
Volume to Capacity	0.07	0.06	0.03	0.05	0.09
Queue Length 95th (ft)	5	0	0	4	0
Control Delay (s)	9.0	0.0	0.0	7.6	0.0
Lane LOS	A			A	
Approach Delay (s)	9.0	0.0		2.2	
Approach LOS	A				

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	0	19	0	0	0	17	27	0	0	29	31
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)	36	0	21	0	0	0	18	29	0	0	32	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	115	115	48	135	132	29	65			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	115	115	48	135	132	29	65			29		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	98	100	100	100	99			100		
cM capacity (veh/h)	854	766	1020	811	750	1045	1537			1584		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	57	0	48	65
Volume Left	36	0	18	0
Volume Right	21	0	0	34
cSH	908	1700	1537	1584
Volume to Capacity	0.06	0.00	0.01	0.00
Queue Length 95th (ft)	5	0	1	0
Control Delay (s)	9.2	0.0	2.9	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.2	0.0	2.9	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	769	71	636	898	100	522
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	836	77	691	976	109	567
RTOR Reduction (vph)	0	24	0	0	0	3
Lane Group Flow (vph)	836	53	691	976	109	564
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	4	5	3	8	5	5 3
Permitted Phases		4				
Actuated Green, G (s)	22.7	49.7	27.7	56.4	27.0	60.7
Effective Green, g (s)	22.7	49.7	27.7	56.4	27.0	60.7
Actuated g/C Ratio	0.24	0.52	0.29	0.59	0.28	0.64
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1210	924	997	3006	501	1007
v/s Ratio Prot	c0.16	0.02	c0.20	0.19	0.06	c0.36
v/s Ratio Perm		0.02				
v/c Ratio	0.69	0.06	0.69	0.32	0.22	0.56
Uniform Delay, d1	33.2	11.3	30.1	9.9	26.1	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0	2.1	0.1	0.2	0.7
Delay (s)	34.9	11.3	32.2	9.9	26.3	10.5
Level of Service	C	B	C	A	C	B
Approach Delay (s)	32.9			19.2	13.1	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	21.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	226	307	82	59	323	204	77	285	58	262	276	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.23	1.00	1.00	0.56	1.00	1.00	0.58	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	422	1863	1583	1042	1863	1583	1075	1863	1583	482	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	334	89	64	351	222	84	310	63	285	300	243
RTOR Reduction (vph)	0	0	53	0	0	134	0	0	46	0	0	127
Lane Group Flow (vph)	246	334	36	64	351	88	84	310	17	285	300	116
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	39.4	31.4	35.2	25.0	22.0	34.7	24.3	20.5	23.5	38.2	29.4	41.8
Effective Green, g (s)	39.4	31.4	35.2	25.0	22.0	34.7	24.3	20.5	23.5	38.2	29.4	41.8
Actuated g/C Ratio	0.45	0.36	0.40	0.29	0.25	0.40	0.28	0.23	0.27	0.44	0.34	0.48
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	381	668	726	322	468	717	328	436	515	397	625	846
v/s Ratio Prot	c0.09	0.18	0.00	0.01	c0.19	0.02	0.01	0.17	0.00	c0.10	0.16	0.02
v/s Ratio Perm	0.20		0.02	0.05		0.04	0.06		0.01	c0.21		0.05
v/c Ratio	0.65	0.50	0.05	0.20	0.75	0.12	0.26	0.71	0.03	0.72	0.48	0.14
Uniform Delay, d1	17.3	22.0	16.0	23.2	30.3	16.8	24.0	30.8	23.7	18.1	23.0	12.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.6	0.0	0.3	6.6	0.1	0.4	5.4	0.0	6.1	0.6	0.1
Delay (s)	21.0	22.6	16.0	23.5	36.9	16.9	24.4	36.2	23.7	24.2	23.6	12.9
Level of Service	C	C	B	C	D	B	C	D	C	C	C	B
Approach Delay (s)		21.1			28.6			32.3			20.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix J

2012 Capacity Analyses With Special Exception Uses – Sunday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	587	19	99	586	10	18	10	93	11	11	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	2	660	21	111	658	11	20	11	104	12	12	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	670			681			1231	1556	330	1325	1566	329
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	670			681			1231	1556	330	1325	1566	329
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			88			81	89	84	84	87	99
cM capacity (veh/h)	916			908			108	98	666	79	96	666

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	2	330	330	21	111	329	329	11	136	34
Volume Left	2	0	0	0	111	0	0	0	20	12
Volume Right	0	0	0	21	0	0	0	11	104	9
cSH	916	1700	1700	1700	908	1700	1700	1700	296	113
Volume to Capacity	0.00	0.19	0.19	0.01	0.12	0.19	0.19	0.01	0.46	0.30
Queue Length 95th (ft)	0	0	0	0	10	0	0	0	57	29
Control Delay (s)	8.9	0.0	0.0	0.0	9.5	0.0	0.0	0.0	27.1	49.7
Lane LOS	A				A				D	E
Approach Delay (s)	0.0				1.4				27.1	49.7
Approach LOS									D	E

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	561	137	334	563	1	135	24	270	3	26	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.41	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	762	5085	1583	3433	5085	1583	3433	1863	1583	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	610	149	363	612	1	147	26	293	3	28	14
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	33	0	0	13
Lane Group Flow (vph)	16	610	36	363	612	1	147	26	260	3	28	1
Turn Type	Perm		Perm	Prot		Perm	Prot		pm+ov	Perm		Perm
Protected Phases		2		1	6		3	8	1		4	
Permitted Phases	2		2			6			8	4		4
Actuated Green, G (s)	16.3	16.3	16.3	14.2	36.5	36.5	9.2	19.1	33.3	3.9	3.9	3.9
Effective Green, g (s)	16.3	16.3	16.3	14.2	36.5	36.5	9.2	19.1	33.3	3.9	3.9	3.9
Actuated g/C Ratio	0.24	0.24	0.24	0.21	0.54	0.54	0.14	0.28	0.49	0.06	0.06	0.06
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	184	1226	382	721	2746	855	467	526	920	107	107	91
v/s Ratio Prot		c0.12		c0.11	0.12		0.04	0.01	c0.06		0.02	
v/s Ratio Perm	0.02		0.02			0.00			0.10	0.00		0.00
v/c Ratio	0.09	0.50	0.09	0.50	0.22	0.00	0.31	0.05	0.28	0.03	0.26	0.01
Uniform Delay, d1	19.9	22.1	19.9	23.6	8.1	7.2	26.4	17.6	10.1	30.1	30.5	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.1	0.6	0.0	0.0	0.4	0.0	0.2	0.1	1.3	0.0
Delay (s)	20.1	22.4	20.0	24.1	8.2	7.2	26.7	17.7	10.3	30.2	31.8	30.1
Level of Service	C	C	C	C	A	A	C	B	B	C	C	C
Approach Delay (s)		21.9			14.1			15.9			31.1	
Approach LOS		C			B			B			C	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	656	54	376	750	51	61	147	277	36	168	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.99	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1708			1764	
Flt Permitted	0.33	1.00	1.00	0.17	1.00	1.00		0.91			0.90	
Satd. Flow (perm)	619	5085	1583	316	5085	1583		1560			1602	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	713	59	409	815	55	66	160	301	39	183	120
RTOR Reduction (vph)	0	0	46	0	0	35	0	30	0	0	12	0
Lane Group Flow (vph)	90	713	13	409	815	20	0	497	0	0	330	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	35.0	27.2	27.2	62.0	47.2	47.2		63.2			63.2	
Effective Green, g (s)	41.0	29.7	29.7	65.0	49.7	49.7		66.2			66.2	
Actuated g/C Ratio	0.30	0.21	0.21	0.47	0.36	0.36		0.48			0.48	
Clearance Time (s)	7.0	6.5	6.5	7.0	6.5	6.5		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	273	1089	339	471	1822	567		745			765	
v/s Ratio Prot	0.03	0.14		c0.19	0.16							
v/s Ratio Perm	0.07		0.01	c0.21		0.01		c0.32			0.21	
v/c Ratio	0.33	0.65	0.04	0.87	0.45	0.03		0.67			0.43	
Uniform Delay, d1	36.3	49.8	43.2	33.7	34.0	28.9		27.8			23.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	0.7	1.4	0.0	15.5	0.2	0.0		2.3			1.8	
Delay (s)	37.0	51.2	43.2	49.2	34.2	28.9		30.1			25.6	
Level of Service	D	D	D	D	C	C		C			C	
Approach Delay (s)		49.2			38.7			30.1			25.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	138.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	202	72	61	211	130	66	206	60	183	199	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.0			5.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.96			0.98			0.98	
Flt Protected		0.99			0.99			0.99			0.98	
Satd. Flow (prot)		1791			1768			1800			1782	
Flt Permitted		0.74			0.89			0.84			0.70	
Satd. Flow (perm)		1346			1577			1535			1275	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	103	220	78	66	229	141	72	224	65	199	216	92
RTOR Reduction (vph)	0	9	0	0	17	0	0	8	0	0	8	0
Lane Group Flow (vph)	0	392	0	0	419	0	0	353	0	0	499	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.3			28.3			35.9			35.9	
Effective Green, g (s)		28.3			28.3			35.9			35.9	
Actuated g/C Ratio		0.38			0.38			0.48			0.48	
Clearance Time (s)		5.0			5.0			5.0			5.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		513			601			743			617	
v/s Ratio Prot												
v/s Ratio Perm		c0.29			0.27			0.23			c0.39	
v/c Ratio		0.76			0.70			0.47			0.81	
Uniform Delay, d1		20.0			19.3			12.8			16.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.7			3.5			0.5			7.7	
Delay (s)		26.7			22.8			13.3			23.9	
Level of Service		C			C			B			C	
Approach Delay (s)		26.7			22.8			13.3			23.9	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	14	108	103	27	26	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	117	112	29	28	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	141				274	127
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	141				274	127
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				96	99
cM capacity (veh/h)	1442				708	924

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	133	141	40
Volume Left	15	0	28
Volume Right	0	29	12
cSH	1442	1700	760
Volume to Capacity	0.01	0.08	0.05
Queue Length 95th (ft)	1	0	4
Control Delay (s)	0.9	0.0	10.0
Lane LOS	A		A
Approach Delay (s)	0.9	0.0	10.0
Approach LOS			A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	30	0	0	0	27	111	0	0	119	10
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)	12	0	33	0	0	0	29	121	0	0	129	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	314	314	135	347	320	121	140			121		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	314	314	135	347	320	121	140			121		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	96	100	100	100	98			100		
cM capacity (veh/h)	629	589	914	577	585	931	1443			1467		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	45	0	150	140
Volume Left	12	0	29	0
Volume Right	33	0	0	11
cSH	815	1700	1443	1467
Volume to Capacity	0.05	0.00	0.02	0.00
Queue Length 95th (ft)	4	0	2	0
Control Delay (s)	9.7	0.0	1.6	0.0
Lane LOS	A	A	A	
Approach Delay (s)	9.7	0.0	1.6	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	0	0	0	0	104	0	14	0	112	15	22
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)	22	0	0	0	0	113	0	15	0	122	16	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	400	287	28	287	299	15	40			15		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400	287	28	287	299	15	40			15		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	89	100			92		
cM capacity (veh/h)	472	575	1047	627	567	1064	1569			1603		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	113	15	162
Volume Left	22	0	0	122
Volume Right	0	113	0	24
cSH	472	1064	1569	1603
Volume to Capacity	0.05	0.11	0.00	0.08
Queue Length 95th (ft)	4	9	0	6
Control Delay (s)	13.0	8.8	0.0	5.7
Lane LOS	B	A		A
Approach Delay (s)	13.0	8.8	0.0	5.7
Approach LOS	B	A		

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	0	0	0	0	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	0	0	0	0	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	8	8	16			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8	8	16			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	1013	1074	1601			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	0	16
Volume Left	15	0	0
Volume Right	0	0	16
cSH	1013	1700	1700
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	83	656	54	750	915	51	61	147	277	36	168	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00		1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.92			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.99	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583		1708			1764	
Flt Permitted	0.28	1.00	1.00	0.15	1.00	1.00		0.90			0.89	
Satd. Flow (perm)	514	5085	1583	287	5085	1583		1539			1577	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	713	59	815	995	55	66	160	301	39	183	120
RTOR Reduction (vph)	0	0	47	0	0	33	0	30	0	0	12	0
Lane Group Flow (vph)	90	713	12	815	995	22	0	497	0	0	330	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6		6	8			4		
Actuated Green, G (s)	33.4	25.6	25.6	68.6	53.8	53.8		58.0			58.0	
Effective Green, g (s)	39.4	28.1	28.1	71.6	56.3	56.3		61.0			61.0	
Actuated g/C Ratio	0.28	0.20	0.20	0.51	0.40	0.40		0.44			0.44	
Clearance Time (s)	7.0	6.5	6.5	7.0	6.5	6.5		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	241	1020	318	560	2043	636		670			687	
v/s Ratio Prot	0.03	0.14		c0.41	0.20							
v/s Ratio Perm	0.08		0.01	c0.34		0.01		c0.32			0.21	
v/c Ratio	0.37	0.70	0.04	1.46	0.49	0.03		0.74			0.48	
Uniform Delay, d1	38.1	52.1	45.1	39.3	31.2	25.4		33.0			28.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	
Incremental Delay, d2	1.0	2.1	0.0	214.7	0.2	0.0		4.4			2.4	
Delay (s)	39.1	54.2	45.2	254.0	31.3	25.4		37.4			30.6	
Level of Service	D	D	D	F	C	C		D			C	
Approach Delay (s)		52.0			128.5			37.4			30.6	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM Average Control Delay	87.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Appendix K

2015 Capacity Analyses With Special Exception Uses – Sunday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	704	99	363	709	32	89	62	335	32	67	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		5.0	4.0		5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1810	1583		1817	
Flt Permitted	0.35	1.00	1.00	0.23	1.00	1.00		0.78	1.00		0.86	
Satd. Flow (perm)	653	3539	1583	420	3539	1583		1457	1583		1590	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	1	791	111	408	797	36	100	70	376	36	75	9
RTOR Reduction (vph)	0	0	69	0	0	16	0	0	88	0	2	0
Lane Group Flow (vph)	1	791	42	408	797	20	0	170	288	0	118	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	26.8	25.9	25.9	43.2	38.3	38.3		14.1	27.4		14.1	
Effective Green, g (s)	26.8	25.9	25.9	43.2	38.3	38.3		14.1	27.4		14.1	
Actuated g/C Ratio	0.39	0.38	0.38	0.63	0.56	0.56		0.21	0.40		0.21	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		5.0	4.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	271	1342	600	529	1985	888		301	635		328	
v/s Ratio Prot	0.00	0.22		c0.15	0.23				0.09			
v/s Ratio Perm	0.00		0.03	c0.34		0.01		c0.12	0.09		0.07	
v/c Ratio	0.00	0.59	0.07	0.77	0.40	0.02		0.56	0.45		0.36	
Uniform Delay, d1	12.6	16.9	13.5	8.2	8.5	6.7		24.3	15.0		23.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	0.7	0.0	6.9	0.1	0.0		2.4	0.5		0.7	
Delay (s)	12.6	17.6	13.6	15.1	8.6	6.7		26.8	15.5		23.9	
Level of Service	B	B	B	B	A	A		C	B		C	
Approach Delay (s)		17.1			10.7			19.0			23.9	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	9.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	692	215	439	702	37	215	133	326	51	156	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1863	1583
Flt Permitted	0.35	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	653	5085	1583	3433	5085	1583	3433	1863	1583	1238	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	752	234	477	763	40	234	145	354	55	170	117
RTOR Reduction (vph)	0	0	163	0	0	17	0	0	15	0	0	99
Lane Group Flow (vph)	141	752	71	477	763	23	234	145	339	55	170	18
Turn Type	Perm		Perm	Prot		Perm	Prot		pm+ov	Perm		Perm
Protected Phases		2		1	6		3	8	1		4	
Permitted Phases	2		2			6			8	4		4
Actuated Green, G (s)	33.9	33.9	33.9	23.3	63.2	63.2	14.0	36.8	60.1	16.8	16.8	16.8
Effective Green, g (s)	33.9	33.9	33.9	23.3	63.2	63.2	14.0	36.8	60.1	16.8	16.8	16.8
Actuated g/C Ratio	0.30	0.30	0.30	0.21	0.56	0.56	0.12	0.33	0.54	0.15	0.15	0.15
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	198	1539	479	714	2869	893	429	612	934	186	279	237
v/s Ratio Prot		0.15		c0.14	0.15		c0.07	0.08	0.08		c0.09	
v/s Ratio Perm	c0.22		0.04			0.01			0.14	0.04		0.01
v/c Ratio	0.71	0.49	0.15	0.67	0.27	0.03	0.55	0.24	0.36	0.30	0.61	0.07
Uniform Delay, d1	34.7	32.0	28.5	40.8	12.5	10.8	46.0	27.4	14.9	42.3	44.5	40.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.4	0.2	0.1	2.4	0.0	0.0	1.4	0.2	0.2	0.9	3.7	0.1
Delay (s)	46.2	32.2	28.6	43.2	12.6	10.8	47.4	27.6	15.2	43.2	48.3	41.0
Level of Service	D	C	C	D	B	B	D	C	B	D	D	D
Approach Delay (s)		33.2			23.9			27.9			45.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	29.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1069	1078	55	0	99
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1162	1172	60	0	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		1229	1165			
pX, platoon unblocked	0.91				0.94	0.91
vC, conflicting volume	1232				1559	391
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	911				732	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	89
cM capacity (veh/h)	677				335	987

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	387	387	387	391	391	391	60	108
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	60	108
cSH	1700	1700	1700	1700	1700	1700	1700	987
Volume to Capacity	0.23	0.23	0.23	0.23	0.23	0.23	0.04	0.11
Queue Length 95th (ft)	0	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1
Lane LOS								A
Approach Delay (s)	0.0			0.0				9.1
Approach LOS								A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	226	342	92	59	361	223	88	285	58	280	276	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.19	1.00	1.00	0.54	1.00	1.00	0.58	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)	362	1863	1583	1006	1863	1583	1075	1863	1583	433	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	372	100	64	392	242	96	310	63	304	300	243
RTOR Reduction (vph)	0	0	57	0	0	131	0	0	47	0	0	127
Lane Group Flow (vph)	246	372	43	64	392	111	96	310	16	304	300	116
Turn Type	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	41.3	33.3	38.4	26.7	23.7	37.0	24.5	19.4	22.4	37.7	27.6	40.2
Effective Green, g (s)	41.3	33.3	38.4	26.7	23.7	37.0	24.5	19.4	22.4	37.7	27.6	40.2
Actuated g/C Ratio	0.46	0.37	0.43	0.30	0.27	0.42	0.28	0.22	0.25	0.42	0.31	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	367	697	772	328	496	747	336	406	487	383	578	804
v/s Ratio Prot	c0.09	0.20	0.00	0.01	c0.21	0.02	0.02	0.17	0.00	c0.12	0.16	0.02
v/s Ratio Perm	0.22		0.02	0.05		0.05	0.06		0.01	c0.22		0.05
v/c Ratio	0.67	0.53	0.06	0.20	0.79	0.15	0.29	0.76	0.03	0.79	0.52	0.14
Uniform Delay, d1	17.3	21.8	14.7	22.6	30.3	16.2	24.7	32.6	25.1	19.5	25.2	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.8	0.0	0.3	8.4	0.1	0.5	8.3	0.0	10.8	0.8	0.1
Delay (s)	22.1	22.6	14.8	22.9	38.7	16.3	25.2	40.9	25.2	30.3	26.0	14.4
Level of Service	C	C	B	C	D	B	C	D	C	C	C	B
Approach Delay (s)		21.3			29.5			35.6			24.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	17	237	262	91	83	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	258	285	99	90	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	384				629	334
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	384				629	334
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				79	98
cM capacity (veh/h)	1175				439	708

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	276	384	105
Volume Left	18	0	90
Volume Right	0	99	15
cSH	1175	1700	465
Volume to Capacity	0.02	0.23	0.23
Queue Length 95th (ft)	1	0	22
Control Delay (s)	0.7	0.0	15.0
Lane LOS	A		C
Approach Delay (s)	0.7	0.0	15.0
Approach LOS			C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	358	130	0	32	146
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	389	141	0	35	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						447
pX, platoon unblocked						
vC, conflicting volume	370	71			141	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370	71			141	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	60			98	
cM capacity (veh/h)	589	977			1439	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	389	94	47	35	159
Volume Left	0	0	0	35	0
Volume Right	389	0	0	0	0
cSH	977	1700	1700	1439	1700
Volume to Capacity	0.40	0.06	0.03	0.02	0.09
Queue Length 95th (ft)	48	0	0	2	0
Control Delay (s)	11.1	0.0	0.0	7.6	0.0
Lane LOS	B			A	
Approach Delay (s)	11.1	0.0		1.4	
Approach LOS	B				

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	0	73	0	0	0	67	324	0	0	351	31
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)	36	0	79	0	0	0	73	352	0	0	382	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	896	896	398	976	913	352	415			352		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	896	896	398	976	913	352	415			352		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	88	100	100	100	94			100		
cM capacity (veh/h)	248	262	651	193	256	691	1144			1207		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	115	0	425	415
Volume Left	36	0	73	0
Volume Right	79	0	0	34
cSH	433	1700	1144	1207
Volume to Capacity	0.27	0.00	0.06	0.00
Queue Length 95th (ft)	27	0	5	0
Control Delay (s)	16.3	0.0	2.0	0.0
Lane LOS	C	A	A	
Approach Delay (s)	16.3	0.0	2.0	0.0
Approach LOS	C	A		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	0	0	0	0	286	0	85	0	310	92	22
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)	22	0	0	0	0	311	0	92	0	337	100	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1189	878	112	878	890	92	124			92		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1189	878	112	878	890	92	124			92		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	100	100	100	100	68	100			78		
cM capacity (veh/h)	92	222	941	222	219	965	1463			1502		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	311	92	461
Volume Left	22	0	0	337
Volume Right	0	311	0	24
cSH	92	965	1463	1502
Volume to Capacity	0.24	0.32	0.00	0.22
Queue Length 95th (ft)	21	35	0	22
Control Delay (s)	55.6	10.5	0.0	6.4
Lane LOS	F	B		A
Approach Delay (s)	55.6	10.5	0.0	6.4
Approach LOS	F	B		

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	0	0	0	0	71	0	0	0	77	0	15
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)	15	0	0	0	0	77	0	0	0	84	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	253	176	8	176	184	0	16			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	253	176	8	176	184	0	16			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	93	100			95		
cM capacity (veh/h)	625	681	1074	756	674	1085	1601			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	77	0	100
Volume Left	15	0	0	84
Volume Right	0	77	0	16
cSH	625	1085	1700	1623
Volume to Capacity	0.02	0.07	0.00	0.05
Queue Length 95th (ft)	2	6	0	4
Control Delay (s)	10.9	8.6	0.0	6.2
Lane LOS	B	A		A
Approach Delay (s)	10.9	8.6	0.0	6.2
Approach LOS	B	A		

Intersection Summary				
Average Delay		7.5		
Intersection Capacity Utilization		19.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	981	89	636	1128	119	522
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.91	1.00	0.97	0.91	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	5085	1583	3433	5085	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	5085	1583	3433	5085	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1066	97	691	1226	129	567
RTOR Reduction (vph)	0	23	0	0	0	1
Lane Group Flow (vph)	1066	74	691	1226	129	566
Turn Type		pm+ov	Prot			pt+ov
Protected Phases	4	5	3	8	5	5 3
Permitted Phases		4				
Actuated Green, G (s)	26.2	54.3	27.1	59.3	28.1	61.2
Effective Green, g (s)	26.2	54.3	27.1	59.3	28.1	61.2
Actuated g/C Ratio	0.26	0.55	0.27	0.60	0.28	0.62
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1340	960	936	3034	500	975
v/s Ratio Prot	c0.21	0.02	c0.20	0.24	0.07	c0.36
v/s Ratio Perm		0.03				
v/c Ratio	0.80	0.08	0.74	0.40	0.26	0.58
Uniform Delay, d1	34.1	10.7	32.9	10.7	27.6	11.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.0	3.1	0.1	0.3	0.9
Delay (s)	37.5	10.7	36.0	10.7	27.9	12.3
Level of Service	D	B	D	B	C	B
Approach Delay (s)	35.2			19.8	15.2	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Appendix L

Left Turn Lane Warrant Analyses – Sunday Conditions

Table L-1
CDA Property
Loudoun County, Virginia
2012 Left Turn Lane Warrant Analysis

Sunday Peak Hour

Left Turn Lane Warrant

Marrwood Place
CDA North Site Driveway

Sunday Peak Hour
Site Buildout

1. Enter operating speed of 40, 50, or 60 mph > 40 mph

2. Enter advancing volumes

		Lefts	>	112 vph
		Throughs	>	15 vph
Percent left turns=	75%	Rights	>	22 vph
		Total	>	149 vph

3. Enter opposing volume > 14 vph

The maximum allowable advancing volume = > 480 vph
A left turn lane is not warranted.

Exhibit 9-75
A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2001. (AASHTO)

Opposing Volume	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
		Advancing Volume/Hour		
		40-mph Operating Speed (60 km/h)		
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
		50-mph Operating Speed (80 km/h)		
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
		60-mph Operating Speed (100 km/h)		
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

Table L-2
CDA Property
Loudoun County, Virginia
2015 Left Turn Lane Warrant Analysis

Sunday Peak Hour

Left Turn Lane Warrant

Marrwood Place
CDA North Site Driveway

Sunday Peak Hour
Site Buildout

1. Enter operating speed of 40, 50, or 60 mph > 40 mph

2. Enter advancing volumes

		Lefts	>	310 vph
		Throughs	>	92 vph
Percent left turns=	73%	Rights	>	22 vph
		Total	>	424 vph

3. Enter opposing volume > 85 vph

The maximum allowable advancing volume = > 480 vph
A left turn lane is not warranted.

Exhibit 9-75
A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2001. (AASHTO)

Opposing Volume	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
		Advancing Volume/Hour		
		40-mph Operating Speed (60 km/h)		
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
		50-mph Operating Speed (80 km/h)		
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
		60-mph Operating Speed (100 km/h)		
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

Appendix M

Chapter 527 Weekday Compliance Package

WELLS + ASSOCIATES

November 5, 2008

VIA ELECTRONIC DELIVERY

Alex Faghri
Virginia Department of Transportation
14685 Avion Parkway
Chantilly, Virginia 20151-1104

Re: Catholic Diocese of Arlington (CDA) SPEX
VDOT Chapter 527 Compliance Package
Loudoun County, Virginia

Dear Mr. Faghri,

Wells + Associates are pleased to submit a VDOT Chapter 527 Compliance package. This package provides VDOT with information associated with the proposed special exception of the Catholic Diocese of Arlington (CDA) property located in Loudoun County, Virginia. The subject property is located west of future Route 659 Relocated and south of Route 50 in Loudoun County, Virginia. Access is proposed to be provided via the planned extension of Marrwood Drive east of existing Goshen Road. The site is currently vacant.

The special exception application proposes to allow for a 1,200-seat parish (30,000 S.F.) and 200-student Kindergarten through grade 8 elementary school to be developed on the property.

The following items are contained in this submission package:

- Chapter 527 Compliance Letter
- Site location map.
- Site Plan Exhibit.
- Proposed study intersection map.
- Loudoun County Office of Transportation Services Scoping Meeting Notes.
- Proposed versus Approved Site Trip Generation.

If you have any questions or comments, feel free to contact me or Michael Buelow at 703-917-6620 or at mjworkosky@mjwells.com.

Sincerely,

Michael J. Workosky
Principal Associate

Cc: J. Reid Herlihy
Roger Bowers
Packie E. Crown

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November 5, 2008

Alex Faghri
Virginia Department of Transportation
14685 Avion Parkway
Chantilly, Virginia 20151-1104

Re: Catholic Diocese of Arlington (CDA) SPEX
VDOT Chapter 527 Regulations – Determination of Compliance

Dear Mr. Faghri,

As requested, Wells + Associates have completed a trip generation assessment associated with the special exception proposed for the Catholic Diocese of Arlington (CDA) property, as required by 24 VAC 30-155. Implementation of these new regulations has been phased statewide over 18 months (July 01, 2007 to January 01, 2009). Implementation in the Northern Virginia District of VDOT began on July 01, 2007. As of January 1, 2008, site plans for commercial sites generating less than 250 peak hour trips and 2,500 daily trips are exempt.

For purposes of determining compliance with the new regulations, trip generation calculations must meet the following trip criteria[1]:

- Shall be based upon the rates or equations published in the Institute of Transportation Engineers Trip Generation (described in the Reference Documents chapter, page 73).

- Shall *not be reduced* through internal capture rates, pass by rates, or any other reduction methods. The opportunity to properly use these reduction rates will be provided in the traffic impact analysis itself and effect the negotiation of any proffered improvements.

- For *redevelopment sites only* (refer to the Definitions chapter 7), when an existing use is to be development as a different or denser use, trips currently generated by existing development that will be removed may be deducted from the total trips that are generated by the proposed land use.

[1] VDOT, Traffic Impact Analysis Regulations Administrative Guidelines – 24 VAC 30-155, *24 May 2007.*

The subject property is located west of future Route 659 Relocated and south of Route 50 in Loudoun County, Virginia. Access is proposed to be provided via the planned extension of Marrwood Drive east of existing Goshen Road. Specific driveway locations will be provided as the site plan is further developed. The existing site is currently vacant. The special exception application proposes to allow for a 1,200-seat parish (30,000 S.F.) and 200-student Kindergarten through grade 8 elementary school to be developed on the property.

As shown in Table 1, the proposed parish and school would generate approximately 198 AM peak hour trips, 88 PM peak hour trips. This commercial development is estimated to generate less than the 250 peak hour trip threshold and would be exempt from Chapter 527 Guidelines.

Please review this information and review this information and provide a response via email or letter confirming this projects compliance with the Chapter 527 Guidelines.

If you have any questions or comments, feel free to contact me or Michael Buelow at 703-917-6620 or at mjworkosky@mjwells.com.

Sincerely,

Michael J. Workosky
Principal Associate

Cc: J. Reid Herlihy
Roger Bowers
Packie E. Crown

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Figure 1
Study Intersection and Site Location
(Site Driveways not Shown)

STUDY INTERSECTION

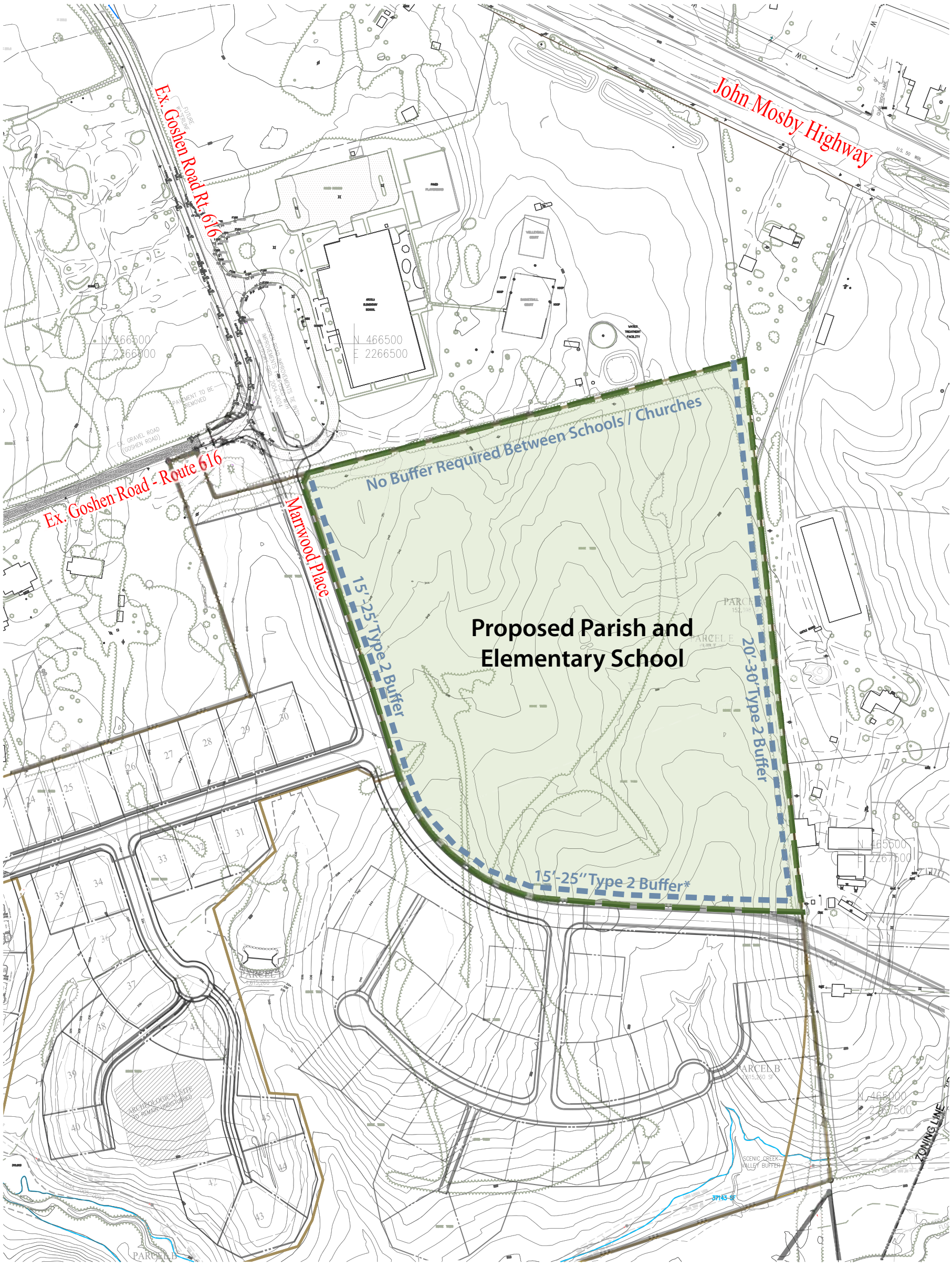
North

M-5

Catholic Diocese of Arlington
Loudoun County, Virginia

Wells + Associates, Inc.

XX



*Southern buffer, previously a 20'-30' Type 2 Buffer, increases in size due to the change in use south of Tall Cedars Parkway to residential.

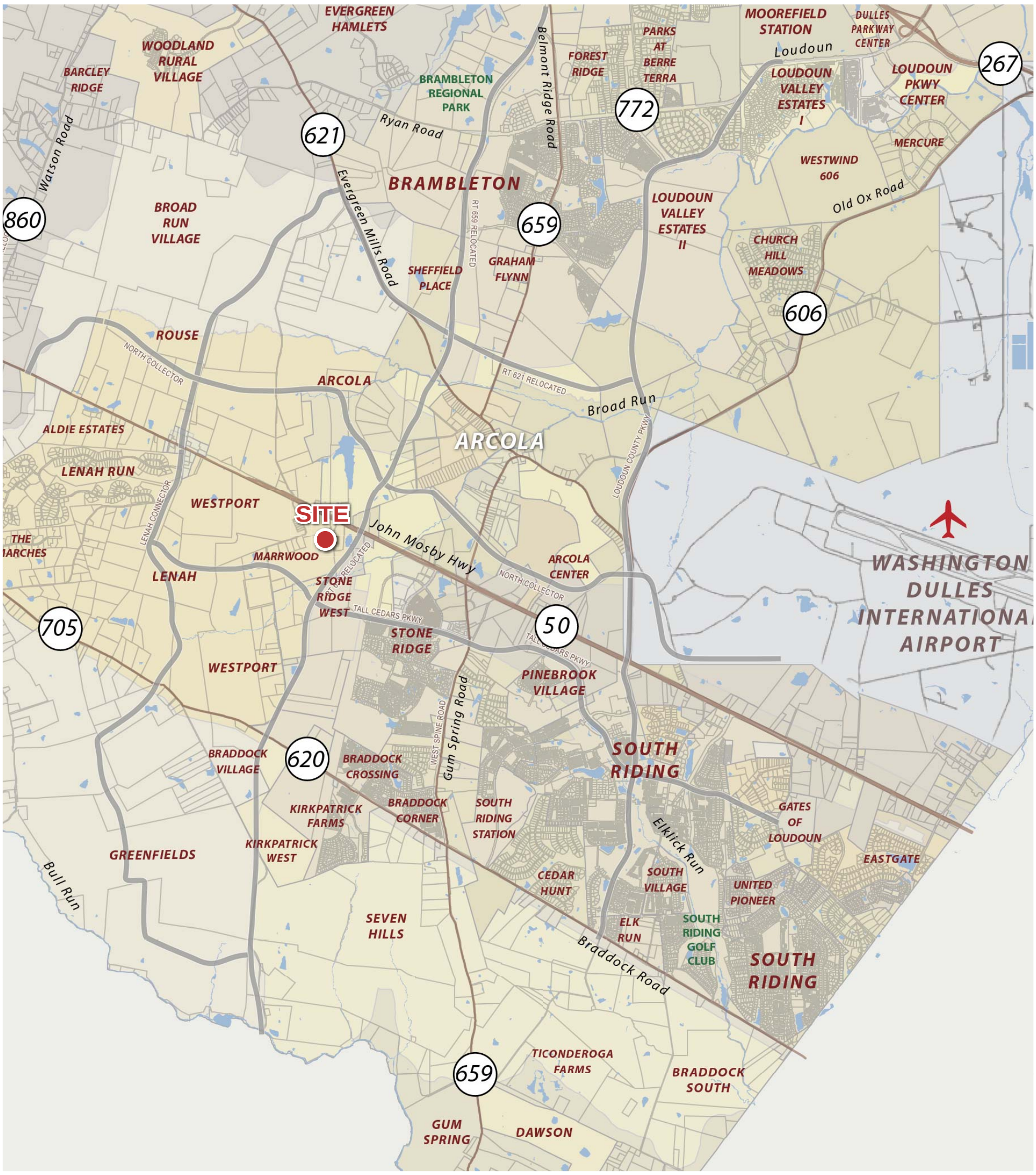
Area to Property Line and Right of Way: 17.9 Acres

Date: October, 2008
Scale: 1" = 200'

Proposed Catholic Parish and Elementary School Site

Exhibit

Bowman CONSULTING



Date: October, 2008
Scale: Not to scale

Proposed Catholic Parish and Elementary School Site

Bowman CONSULTING

Vicinity Map

Loudoun County Virginia
Office of Transportation Services

Application Name: Catholic Diocese of Arlington
Application Type: Special Exception
Attendees: George Phillips

Date: 10/30/08

Pauline Crowin
Mike Horkosky

(1) **Study Area**: Roadways internal or adjacent to the development site shall be included in the traffic study. The study area should be defined at the scoping meeting and as a guideline should include other external roads to the extent that the project's generated traffic is anticipated to exceed 10 percent of the road's current/existing traffic volumes (at the time of application).

Comments: Will provide South of Route 50, West of North Star Boulevard, accessed off of Goshen Road / Marrwood Place

See Arcola School Study by Wells dated May ~~20~~ 29, 2008

(2) **Traffic Count Locations**: Traffic counts are required on the adjacent roads, the adjacent intersections beyond the project's frontage on adjacent roads in the study area. The AM/PM peak period traffic counts shall not be more than twelve (12) months old at the time of the application submission. Twenty-four (24) hour weekday traffic counts are also required for roadway segments.

Comments: Will provide Include counts/analysis of all site intersections, Route 50 / Goshen Road, Goshen Road / Marrwood Place

(3) **Trip Generation**: As a general guide to vehicle trip generation, the latest edition of the Institute of Transportation Engineer's (I.T.E.). Trip Generation Report shall be used. These rates may be supplemented by additional information provided by the County. If the applicant chooses to use different rates, they shall be documented and agreed to at the scoping meeting prior to their use in the traffic analyses. Primary trip reductions associated with passby trips and methodologies for trip reductions associated with passby trips shall be discussed and agreed upon at the scoping meeting.

Comments: Will provide. Use ITE 7th Edition rates for appropriate Church and School facilities (K-8)
Include a trip generation comparison with the existing approved use. Based on the traffic volumes, ~~the~~ the 527 requirements are not required.

(4) **Traffic Volume Projections**: The traffic study shall include an agreed upon build out year and provide existing and projected traffic volumes, with and without the subject project, for Average Daily Traffic (ADT), as well as AM and PM peak hours. The peak hour of the project/individual land use(s) (as given in the ITE Trip Generation Report) should be added to the corresponding AM/PM existing peak hour of the adjacent roadway traffic volumes (to show the worst case scenario), if the peak hour of the project/individual land use(s) for the generator is greater than the peak hour of the adjacent roadway (per ITE Trip Generation Report). The existing peak hour of traffic on the roads adjacent to the subject project site shall be identified. These traffic volumes shall be provided at roadway intersections and commercial or private accessways/entrances.

Comments: Will provide. 2012 and 2015 phase conditions
2012 - Existing with Church
2015 - with Westport Reconstruction
Assume Church in 2012
Assume School in 2015

(5) **LOS Analysis**: Level of Service (LOS) calculations for existing and projected conditions, with and without the subject project, for highway segments, intersection legs, and entrances shall be provided. Calculations shall be in accordance with the Highway Capacity Manual (HCM) and/or the Highway Capacity Software (HCS), or as may be agreed at the scoping meeting. Traffic volumes and LOS information shall be provided for each phase of development, to include conditions at date of project completion. Projections shall also be made ~~for date of~~ completion plus ~~ten (10) years or to an agreed upon forecast year~~.

Comments: Will provide. No buildout plus 10 needed.
Doing 2012 and 2015 Scenarios

(6) **Minimum Roadway/Intersection LOS Standards**: Recommendations for phased improvements to the road network links in order to maintain an acceptable LOS (minimum LOS "D") shall be provided. For each phase up to and including buildout, a minimum approach and overall LOS "D" at intersections shall apply.

Comments: Will provide

(7) **Background Traffic Assumptions**: Assumptions which determine projected background traffic, including through traffic growth rate to be applied on roadway links, shall be confirmed at the scoping meeting. The sources for determining future traffic projections will include one or more of the following:

- The Loudoun County Growth Summary or similar documents from Loudoun County.
- The Loudoun County transportation model which incorporates COG's Cooperative Forecasts for Loudoun County.
- Approved developments in the vicinity of the proposed development.

Specific other approved development names and respective development square footage or residential units in the study shall be provided.

Comments: Will provide. See comment #4
Apply prorated growth from the Area's Study in light of the Loudoun Growth Summary
- existing network (2012)
- Phase 2 / 2015 Ultimate Conditions with Westport Blvd Construction, realignment of Goshen Post

(8) **Traffic/Trip Distribution**: Directional trip distribution information shall be provided for project entrances and collector and arterial intersections within the study area for the phases and categories (e.g., residential, office, retail, industrial and institutional) of development.

Comments: Will provide based on traffic count data / church service area / school area
See previous report

(9) **LOS Calculations Assumptions**: Traffic counts and LOS worksheets and projected traffic volume LOS analyses, using agreed upon analysis techniques, including existing AM/PM peak hour signal timing, shall be included as a part of the traffic study.

Comments: Will provide. Include disc with report text plus Synchro 7.

(10) **Mode Choice**: Modal split information shall be provided for the phases of the analysis, with sources of information identified (e.g., COG model).

Comments: N.A.

(11) **Safety Locations**: Road safety hazards, as identified by the ISTEA set-aside funding criteria and/or as identified by the County at the scoping meeting, within the study area shall be analyzed for all roadway links and intersections in the traffic study.

Comments: Will provide either way - Describe geometry / safety issues

(12) **Traffic Mitigation Measures**: If trip reduction factors are used in the study, measures necessary to implement the reduction must be specified, with supporting documentation.

Comments: N.A.

(13) **Bicycle & Pedestrian Accommodations**: When bicycle and pedestrian accommodations are used to reduce anticipated traffic volumes, a description of the physical and functional characteristics of the proposed bicycle and pedestrian accommodations shall be provided. If such separate bicycle accommodations (e.g., striped lanes or multi-purpose trails) are anticipated, they shall also be identified. A description of the functional characteristics shall be provided to identify the transportation options that these accommodations provide (e.g., pedestrian access to retail center, safe bicycle route to elementary school, inter-parcel connections to adjacent neighborhoods, access to W&OD trail, etc.)

Comments: N.A.

Staff Signature: George R. Phillips 10/30/08

Traffic Consultant Signature: 10.30.08

lmm/
G:\LCG\OTS\FSM Traffic Study Scoping Documents\FSM Study Guidelines Application (12-07 FSM Revisions).doc

Table 1
Arcola School Special Exception
Site Trip Generation Analysis **(1)**

Land Use	ITE Land Use Code	Size	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour (2) In	PM Peak Hour (2) Out	PM Peak Hour (2) Total
Approved Development									
Single Family Detached	210	19	D.U.	7	20	27	16	9	25
Proposed Development									
Church	560	30,000	SF	12	10	22	10	10	20
Private School K-8 **(3)**	534	200	Students	97	79	176	32	36	68
Total				109	89	198	42	46	88

Notes:

(1) Traffic estimates based on Institute of Transportation Engineers (ITE) Trip Generation, Seventh Edition.

(2) Peak Hour of Generator.

(3) PM Peak Hour based on Comparison of ITE rates & indipendent trips rates collected by W+A.

Appendix N

Existing Traffic Counts – Weekday Conditions

Wells & Associates, LLC

McLean, Virginia

Existing Traffic Count

PROJECT:	Arcola School	DATE:	2/21/2008	SOUTHBOUND ROAD:	Fleetwood Road
W & A JOB NO.:	4052	DAY:	Thursday	NORTHBOUND ROAD:	Goshen Road
INTERSECTION:	Route 50 & Goshen Rd.	WEATHER:	Clear	WESTBOUND ROAD:	John Mosby Highway
LOCATION:	Loudoun County,VA	COUNTED BY:	Jim & James	EASTBOUND ROAD:	John Mosby Highway
		INPUTED BY:	agan		

Time Period	Turning Movements																		Total	PHF	Time Period
	Southbound Fleetwood Road				Westbound John Mosby Highway				Northbound Goshen Road				Eastbound John Mosby Highway				North & South	East & West			
	1 Right	2 Thru	3 Left	Total	4 Right	5 Thru	6 Left	Total	7 Right	8 Thru	9 Left	Total	10 Right	11 Thru	12 Left	Total					
AM																					
6:00-6:15	0	0	0	0	0	14	1	15	1	1	0	2	0	231	0	231	2	246	248		6:00-6:15
6:15-6:30	0	0	1	1	1	32	2	35	1	2	0	3	1	234	1	236	4	271	275		6:15-6:30
6:30-6:45	0	0	1	1	1	32	4	37	0	3	0	3	1	278	1	280	4	317	321		6:30-6:45
6:45-7:00	0	1	0	1	0	51	3	54	10	4	1	15	2	298	1	301	16	355	371		6:45-7:00
7:00-7:15	1	0	3	4	3	65	1	69	10	10	0	20	0	207	5	212	24	281	305		7:00-7:15
7:15-7:30	0	0	1	1	3	61	5	69	3	4	0	7	1	257	6	264	8	333	341		7:15-7:30
7:30-7:45	0	1	0	1	3	67	4	74	5	10	0	15	0	260	5	265	16	339	355		7:30-7:45
7:45-8:00	0	0	1	1	5	89	9	103	7	5	2	14	1	271	3	275	15	378	393		7:45-8:00
8:00-8:15	1	0	0	1	10	84	10	104	10	1	2	13	2	200	4	206	14	310	324		8:00-8:15
8:15-8:30	1	0	3	4	9	59	8	76	3	3	1	7	3	241	3	247	11	323	334		8:15-8:30
8:30-8:45	0	1	2	3	11	65	20	96	9	6	4	19	2	211	2	215	22	311	333		8:30-8:45
8:45-9:00	0	1	1	2	3	95	30	128	7	0	1	8	4	177	3	184	10	312	322		8:45-9:00
3 Hour Totals	**3**	**4**	**13**	**20**	**49**	**714**	**97**	**860**	**66**	**49**	**11**	**126**	**17**	**2,865**	**34**	**2,916**	**146**	**3,776**	**3,922**		
1 Hour Totals																					
6:00-7:00	0	1	2	3	2	129	10	141	12	10	1	23	4	1,041	3	1,048	26	1,189	1,215	0.82	6:00-7:00
6:15-7:15	1	1	5	7	5	180	10	195	21	19	1	41	4	1,017	8	1,029	48	1,224	1,272	0.86	6:15-7:15
6:30-7:30	1	1	5	7	7	209	13	229	23	21	1	45	4	1,040	13	1,057	52	1,286	1,338	0.90	6:30-7:30
6:45-7:45	1	2	4	7	9	244	13	266	28	28	1	57	3	1,022	17	1,042	64	1,308	1,372	0.92	6:45-7:45
7:00-8:00	1	1	5	7	14	282	19	315	25	29	2	56	2	995	19	1,016	63	1,331	1,394	0.89	7:00-8:00
7:15-8:15	1	1	2	4	21	301	28	350	25	20	4	49	4	988	18	1,010	53	1,360	1,413	0.90	7:15-8:15
7:30-8:30	2	1	4	7	27	299	31	357	25	19	5	49	6	972	15	993	56	1,350	1,406	0.89	7:30-8:30
7:45-8:45	2	1	6	9	35	297	47	379	29	15	9	53	8	923	12	943	62	1,322	1,384	0.88	7:45-8:45
8:00-9:00	2	2	6	10	33	303	68	404	29	10	8	47	11	829	12	852	57	1,256	1,313	0.98	8:00-9:00
AM Peak 7:15-8:15	**1**	**1**	**2**	**4**	**21**	**301**	**28**	**350**	**25**	**20**	**4**	**49**	**4**	**988**	**18**	**1,010**	**53**	**1,360**	**1,413**	**0.90**	**AM Peak 7:15-8:15**
PM																					
4:00-4:15	1	1	0	2	5	274	11	290	4	1	1	6	0	75	1	76	8	366	374		4:00-4:15
4:15-4:30	1	3	0	4	1	301	8	310	5	0	1	6	0	81	0	81	10	391	401		4:15-4:30
4:30-4:45	1	5	0	6	1	262	15	278	7	0	1	8	0	93	0	93	14	371	385		4:30-4:45
4:45-5:00	0	3	2	5	0	284	18	302	0	1	2	3	0	81	2	83	8	385	393		4:45-5:00
5:00-5:15	2	2	0	4	4	280	10	294	1	0	0	1	1	72	0	73	5	367	372		5:00-5:15
5:15-5:30	1	4	0	5	0	319	11	330	7	0	1	8	3	103	1	107	13	437	450		5:15-5:30
5:30-5:45	0	4	2	6	0	260	15	275	6	0	2	8	2	88	3	93	14	368	382		5:30-5:45
5:45-6:00	1	1	0	2	4	269	14	287	7	2	0	9	1	93	0	94	11	381	392		5:45-6:00
6:00-6:15	0	2	1	3	1	237	11	249	4	0	0	4	0	74	0	74	7	323	330		6:00-6:15
6:15-6:30	5	1	0	6	1	250	4	255	2	1	0	3	0	77	0	77	9	332	341		6:15-6:30
6:30-6:45	6	2	1	9	2	216	6	224	3	2	1	6	0	72	0	72	15	296	311		6:30-6:45
6:45-7:00	4	2	1	7	0	199	15	214	2	1	2	5	1	75	1	77	12	291	303		6:45-7:00
3 Hour Totals	**22**	**30**	**7**	**59**	**19**	**3,151**	**138**	**3,308**	**48**	**8**	**11**	**67**	**8**	**984**	**8**	**1,000**	**126**	**4,308**	**4,434**		
1 Hour Totals																					
4:00-5:00	3	12	2	17	7	1,121	52	1,180	16	2	5	23	0	330	3	333	40	1,513	1,553	0.97	4:00-5:00
4:15-5:15	4	13	2	19	6	1,127	51	1,184	13	1	4	18	1	327	2	330	37	1,514	1,551	0.97	4:15-5:15
4:30-5:30	4	14	2	20	5	1,145	54	1,204	15	1	4	20	4	349	3	356	40	1,560	1,600	0.89	4:30-5:30
4:45-5:45	3	13	4	20	4	1,143	54	1,201	14	1	5	20	6	344	6	356	40	1,557	1,597	0.89	4:45-5:45
5:00-6:00	4	11	2	17	8	1,128	50	1,186	21	2	3	26	7	356	4	367	43	1,553	1,596	0.89	5:00-6:00
5:15-6:15	2	11	3	16	5	1,085	51	1,141	24	2	3	29	6	358	4	368	45	1,509	1,554	0.86	5:15-6:15
5:30-6:30	6	8	3	17	6	1,016	44	1,066	19	3	2	24	3	332	3	338	41	1,404	1,445	0.92	5:30-6:30
5:45-6:45	12	6	2	20	8	972	35	1,015	16	5	1	22	1	316	0	317	42	1,332	1,374	0.88	5:45-6:45
6:00-7:00	15	7	3	25	4	902	36	942	11	4	3	18	1	298	1	300	43	1,242	1,285	0.94	6:00-7:00
PM Peak 4:30-5:30	**4**	**14**	**2**	**20**	**5**	**1,145**	**54**	**1,204**	**15**	**1**	**4**	**20**	**4**	**349**	**3**	**356**	**40**	**1,560**	**1,600**	**0.89**	**PM Peak 4:30-5:30**

Appendix O

Existing Capacity Analyses – Weekday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	829	11	68	303	33	8	11	31	6	2	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	921	12	76	337	37	9	12	34	7	2	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	373			933			1271	1472	461	1016	1448	168
vC1, stage 1 conf vol							948	948		488	488	
vC2, stage 2 conf vol							323	524		528	960	
vCu, unblocked vol	373			933			1271	1472	461	1016	1448	168
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			90			96	95	94	97	99	100
cM capacity (veh/h)	1182			729			214	226	548	261	198	846

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	13	461	461	12	76	168	168	37	56	11
Volume Left	13	0	0	0	76	0	0	0	9	7
Volume Right	0	0	0	12	0	0	0	37	34	2
cSH	1182	1700	1700	1700	729	1700	1700	1700	350	282
Volume to Capacity	0.01	0.27	0.27	0.01	0.10	0.10	0.10	0.02	0.16	0.04
Queue Length 95th (ft)	1	0	0	0	9	0	0	0	14	3
Control Delay (s)	8.1	0.0	0.0	0.0	10.5	0.0	0.0	0.0	17.2	18.3
Lane LOS	A				B				C	C
Approach Delay (s)	0.1				1.8				17.2	18.3
Approach LOS									C	C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	28	0	17	12
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	35	0	22	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	94	35			35	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	94	35			35	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	894	1037			1576	

Direction, Lane #	NB 1	SB 1
Volume Total	35	37
Volume Left	0	22
Volume Right	0	0
cSH	1700	1576
Volume to Capacity	0.02	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	4.3
Lane LOS		A
Approach Delay (s)	0.0	4.3
Approach LOS		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	11.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	356	7	50	1128	8	3	2	23	2	11	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	400	8	56	1267	9	3	2	26	2	12	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1276			408			1166	1798	200	1616	1797	634
vC1, stage 1 conf vol							409	409		1380	1380	
vC2, stage 2 conf vol							757	1389		236	417	
vCu, unblocked vol	1276			408			1166	1798	200	1616	1797	634
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			95			99	99	97	98	92	99
cM capacity (veh/h)	540			1147			241	156	808	123	158	422

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	4	200	200	8	56	634	634	9	31	19
Volume Left	4	0	0	0	56	0	0	0	3	2
Volume Right	0	0	0	8	0	0	0	9	26	4
cSH	540	1700	1700	1700	1147	1700	1700	1700	521	178
Volume to Capacity	0.01	0.12	0.12	0.00	0.05	0.37	0.37	0.01	0.06	0.11
Queue Length 95th (ft)	1	0	0	0	4	0	0	0	5	9
Control Delay (s)	11.7	0.0	0.0	0.0	8.3	0.0	0.0	0.0	12.3	27.6
Lane LOS	B				A				B	D
Approach Delay (s)	0.1				0.3				12.3	27.6
Approach LOS									B	D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	11	1	11	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	0	12	1	12	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	88	13			13	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	88	13			13	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	906	1067			1605	

Direction, Lane #	NB 1	SB 1
Volume Total	13	63
Volume Left	0	12
Volume Right	1	0
cSH	1700	1605
Volume to Capacity	0.01	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	1.5
Lane LOS		A
Approach Delay (s)	0.0	1.5
Approach LOS		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	13.0%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix P

2012 and 2015 Background Development Trip Generation and Traffic Assignments – Weekday Conditions

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Scenario Report

Scenario:	2012 AM
Command:	2012
Volume:	2012 AM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	2012 AM
Trip Distribution:	2015
Paths:	2012 BG
Routes:	Default Route
Configuration:	AM Peak

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Trip Generation Report

Forecast for 2012 AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Stone Ridge	1.00	Residential	35.00	149.00	35	149	184	6.9
	Zone 1 Subtotal					35	149	184	6.9
2	Stone Ridge	1.00	Commercial	32.00	12.00	32	12	44	1.7
	Zone 2 Subtotal					32	12	44	1.7
4	Providence G	1.00	Residential	12.00	45.00	12	45	57	2.1
	Zone 4 Subtotal					12	45	57	2.1
5	Pinebrook	1.00	Residential	21.00	86.00	21	86	107	4.0
	Zone 5 Subtotal					21	86	107	4.0
12	Braddock Cor	1.00	Residential	10.00	38.00	10	38	48	1.8
	Zone 12 Subtotal					10	38	48	1.8
15	Kirkpatrick	1.00	Residential	104.00	330.00	104	330	434	16.4
	Zone 15 Subtotal					104	330	434	16.4
18	Glascock Fie	1.00	Employment	85.00	30.00	85	30	115	4.3
	Zone 18 Subtotal					85	30	115	4.3
20	Gum Spring V	1.00	Commercial	158.00	132.00	158	132	290	10.9
	Zone 20 Subtotal					158	132	290	10.9
23	Marrwood	1.00	Residential	15.00	46.00	15	46	61	2.3
	Zone 23 Subtotal					15	46	61	2.3
27	South Villag	1.00	Residential	2.00	15.00	2	15	17	0.6
	Zone 27 Subtotal					2	15	17	0.6
28	South Riding	1.00	Residential	18.00	77.00	18	77	95	3.6
	Zone 28 Subtotal					18	77	95	3.6
29	South Riding	1.00	Employment	103.00	14.00	103	14	117	4.4
	Zone 29 Subtotal					103	14	117	4.4
30	South Riding	1.00	Residential	32.00	128.00	32	128	160	6.0
	Zone 30 Subtotal					32	128	160	6.0
31	South Riding	1.00	Commercial	14.00	9.00	14	9	23	0.9
	Zone 31 Subtotal					14	9	23	0.9
36	Brambleton E	1.00	Employment	212.00	35.00	212	35	247	9.3
	Zone 36 Subtotal					212	35	247	9.3
37	Brambleton C	1.00	Commercial	12.00	8.00	12	8	20	0.8

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Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
	Zone 37 Subtotal					12	8	20	0.8
38	Brambleton R	1.00	Residential	133.00	440.00	133	440	573	21.6
	Zone 38 Subtotal					133	440	573	21.6
40	CDA By-Right	1.00	Residential	6.00	17.00	6	17	23	0.9
	Zone 40 Subtotal					6	17	23	0.9
41	Winsbury	1.00	Residential	9.00	28.00	9	28	37	1.4
	Zone 41 Subtotal					9	28	37	1.4
TOTAL						1013	1639	2652	100.0

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Trip Distribution Report

Percent Of Trips 2015

Zone	To Gates 1	2	3	4	5	6	7	8	9	10
1	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
2	6.0	5.0	35.0	6.0	5.0	5.0	10.0	5.0	5.0	18.0
4	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
5	5.0	2.0	45.0	4.0	13.0	0.0	2.0	5.0	10.0	14.0
9	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
12	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
13	5.0	5.0	25.0	4.0	10.0	10.0	9.0	5.0	5.0	22.0
15	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
17	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
18	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
20	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
21	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
22	5.0	0.0	20.0	5.0	20.0	5.0	15.0	5.0	0.0	25.0
23	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
27	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
28	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
29	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
30	5.0	5.0	35.0	6.0	0.0	5.0	15.0	5.0	5.0	19.0
31	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
35	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
36	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
37	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
38	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
40	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
41	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0

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Turning Movement By Zone Report
2012 AM

#68 Route 659 (Gum Spring Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=7.4,V/C=0.111)][+0.111 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	1	12	15	0	3	0	0	19	0	3	5	0	58
Zn 2	0	1	2	0	2	0	0	2	1	5	6	0	19
Zn 4	2	5	12	0	1	0	0	0	1	3	0	0	24
Zn 5	0	0	1	0	0	0	0	3	0	3	11	0	18
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	1	2	6	0	1	0	0	0	0	2	0	0	12
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	3	6	18	0	2	0	0	0	1	6	0	0	36
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	7	0	0	2	4	0	5	0	0	0	13	31
Zn 20	16	21	49	0	25	0	0	0	19	59	0	0	189
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	1	2	11	0	0	4	0	18
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 29	0	0	0	0	0	0	0	11	0	0	2	0	13
Zn 30	0	0	0	0	0	0	0	2	0	0	9	1	12
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	5	0	0	1	0	0	1	0	0	0	0	7
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	3	0	13	11	1	0	3	0	0	8	4	43
Zn 40	0	0	0	0	0	0	1	3	0	0	1	0	5
Zn 41	0	1	0	1	2	1	0	1	0	0	1	0	7
Added	24	63	103	15	50	7	4	63	23	82	50	18	502
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	24	63	103	15	50	7	4	63	23	82	50	18	502
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	24	63	103	15	50	7	4	63	23	82	50	18	502

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#75 Braddock Road/Gum Spring Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=6.7,V/C=0.168)][+0.168 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	4	0	19	16	17	4	0	0	0	0	4	64
Zn 2	0	2	0	2	1	1	3	0	0	0	0	5	14
Zn 4	0	1	0	11	5	7	2	0	0	0	0	3	29
Zn 5	0	1	0	0	3	0	0	0	0	0	0	0	4
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	2	0	12	9	7	2	0	0	0	0	3	35
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	24	0	0	0	0	9	27	151	76	0	48	0	335
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	11	0	2	4	0	0	0	0	0	0	6	23
Zn 20	0	36	0	6	30	9	11	0	0	0	0	7	99
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	0	0	4	1	0	1	0	6
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	2	0	0	7	0	9
Zn 29	0	0	7	0	0	0	0	9	0	1	1	0	18
Zn 30	0	0	2	0	0	0	0	1	0	6	4	0	13
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	5	0	0	1	0	0	0	0	0	0	0	6
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	3	0	0	11	0	0	0	0	0	0	0	14
Zn 40	0	0	0	0	0	0	0	2	1	0	1	0	4
Zn 41	0	1	0	0	2	0	0	0	0	1	0	0	4
Added	25	67	9	52	83	50	49	169	78	9	64	29	684
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	25	67	9	52	83	50	49	169	78	9	64	29	684
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	25	67	9	52	83	50	49	169	78	9	64	29	684

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#80 Route 616 (Fleetwood Road)/Route 50													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=2.7,V/C=0.029)][+0.029 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	2	0	0	0	5	0	0	23	10	40
Zn 2	0	0	0	0	0	0	0	5	0	0	2	0	7
Zn 4	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 5	0	0	0	0	0	0	0	3	0	0	11	0	14
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	1	0	0	0	0	0	0	0	0	1	0	2
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	3	7	0	0	2	0	0	1	1	0	3	0	17
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	1	0	0	0	0	18	0	0	6	0	25
Zn 20	0	0	0	2	0	0	0	17	0	0	14	2	35
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	7	7	16	0	2	0	0	0	2	5	0	0	39
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 29	0	0	0	0	0	0	0	11	0	0	1	0	12
Zn 30	0	0	0	0	0	0	0	2	0	0	8	1	11
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	2	0	0	0	0	2	2	0	0	0	0	6
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	2	1	6	0	0	20	0	29
Zn 40	3	3	5	0	1	0	0	0	1	2	0	0	15
Zn 41	0	0	0	0	0	1	0	2	0	0	6	0	9
Added	13	20	21	5	6	3	3	75	4	7	104	13	274
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	13	20	21	5	6	3	3	75	4	7	104	13	274
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	13	20	21	5	6	3	3	75	4	7	104	13	274

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#83 Goshen Road/Westport Blvd.
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=1.9,V/C=0.000)][+0.000 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	1	0	0	0	0	0	0	0	0	0	0	1
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	9	0	0	3	0	0	0	0	0	0	0	12
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	1	0	0	0	0	0	0	0	0	0	0	1
Zn 20	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	5	10	0	0	0	0	0	16	0	30	61
Zn 27	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 28	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 31	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	2	0	0	0	0	0	0	0	0	0	0	2
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 40	0	0	2	4	0	0	0	0	0	6	0	11	23
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	13	7	14	4	0	0	0	0	22	0	41	101
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	13	7	14	4	0	0	0	0	22	0	41	101
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	13	7	14	4	0	0	0	0	22	0	41	101

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#85 Braddock Road/Goshen Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=1.3,V/C=0.015)][+0.015 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	4	0	0	16	0	20
Zn 2	0	0	0	0	0	0	0	2	0	0	1	0	3
Zn 4	0	0	0	0	0	0	0	2	0	0	7	0	9
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	0	0	0	2	0	0	6	1	9
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	3	0	0	0	21	0	0	67	9	100
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	1	0	0	0	0	0	1
Zn 20	0	0	0	0	0	0	0	11	0	0	9	0	20
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	5	0	11	4	0	0	0	0	2	22
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	4	0	5
Zn 29	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 30	0	0	0	0	0	0	0	1	0	0	4	0	5
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	0	2	2
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 40	0	0	0	3	0	3	1	0	0	0	0	1	8
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	12	0	14	5	46	0	0	115	15	207
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	12	0	14	5	46	0	0	115	15	207
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	12	0	14	5	46	0	0	115	15	207

Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#94 Stone Springs Blvd./Route 50													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=5.1,V/C=0.049)][+0.049 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	31	18	19	0	4	0	0	0	7	5	1	0	85
Zn 2	2	1	2	0	3	0	0	1	4	6	0	0	19
Zn 4	1	2	0	0	1	0	0	1	0	0	2	0	7
Zn 5	0	0	0	0	0	0	0	3	0	0	11	0	14
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	1	0	0	0	0	0	0	0	0	1	0	2
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	11	0	5	4	3	19	0	0	0	4	0	46
Zn 20	0	0	0	0	0	0	0	19	0	0	16	0	35
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	1	3	13	0	0	4	0	21
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 29	0	0	0	1	0	0	0	11	0	0	1	0	13
Zn 30	0	0	0	0	0	0	0	2	0	0	9	0	11
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	2	0	0	0	0	2
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	11	3	3	0	0	9	0	26
Zn 40	0	0	0	0	0	0	1	4	0	0	1	0	6
Zn 41	0	0	0	1	0	4	1	0	0	0	2	0	8
Added	34	33	22	6	12	19	27	62	12	10	71	1	309
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	34	33	22	6	12	19	27	62	12	10	71	1	309
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	34	33	22	6	12	19	27	62	12	10	71	1	309

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Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#95 West Spine Road/ Route 50													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=0.0,V/C=0.001)][+0.001 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	34	0	0	8	0	42
Zn 2	0	0	0	0	0	0	0	4	0	0	11	0	15
Zn 4	0	0	0	0	0	0	0	12	0	0	3	0	15
Zn 5	0	0	0	0	0	0	0	4	0	0	15	0	19
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	0	0	0	6	0	0	2	0	8
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	18	0	0	6	0	24
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	0	5	0	0	13	0	18
Zn 20	0	0	0	0	0	0	0	49	0	0	59	0	108
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	0	0	11	0	0	4	0	15
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 29	0	0	0	1	0	0	0	11	0	0	2	0	14
Zn 30	0	0	0	0	0	0	0	2	0	0	10	0	12
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	16	0	0	12	0	28
Zn 40	0	0	0	0	0	0	0	3	0	0	1	0	4
Zn 41	0	0	0	0	0	0	0	2	0	0	1	0	3
Added	0	0	0	1	0	0	0	181	0	0	150	0	332
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	1	0	0	0	181	0	0	150	0	332
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	1	0	0	0	181	0	0	150	0	332

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Scenario Report

Scenario:	2012 PM
Command:	2012
Volume:	2012 PM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	2012 PM
Trip Distribution:	2015
Paths:	2012 BG
Routes:	Default Route
Configuration:	AM Peak

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Trip Generation Report

Forecast for 2012 PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Stone Ridge	1.00	Residential	141.00	72.00	141	72	213	5.6
	Zone 1 Subtotal					141	72	213	5.6
2	Stone Ridge	1.00	Commercial	109.00	119.00	109	119	228	5.9
	Zone 2 Subtotal					109	119	228	5.9
4	Providence G	1.00	Residential	42.00	22.00	42	22	64	1.7
	Zone 4 Subtotal					42	22	64	1.7
5	Pinebrook	1.00	Residential	92.00	48.00	92	48	140	3.7
	Zone 5 Subtotal					92	48	140	3.7
12	Braddock Cor	1.00	Residential	42.00	22.00	42	22	64	1.7
	Zone 12 Subtotal					42	22	64	1.7
15	Kirkpatrick	1.00	Residential	331.00	185.00	331	185	516	13.5
	Zone 15 Subtotal					331	185	516	13.5
18	Glascock Fie	1.00	Employment	116.00	186.00	116	186	302	7.9
	Zone 18 Subtotal					116	186	302	7.9
20	Gum Spring V	1.00	Commercial	327.00	325.00	327	325	652	17.0
	Zone 20 Subtotal					327	325	652	17.0
23	Marrwood	1.00	Residential	52.00	29.00	52	29	81	2.1
	Zone 23 Subtotal					52	29	81	2.1
27	South Villag	1.00	Residential	12.00	5.00	12	5	17	0.4
	Zone 27 Subtotal					12	5	17	0.4
28	South Riding	1.00	Residential	72.00	38.00	72	38	110	2.9
	Zone 28 Subtotal					72	38	110	2.9
29	South Riding	1.00	Employment	14.00	70.00	14	70	84	2.2
	Zone 29 Subtotal					14	70	84	2.2
30	South Riding	1.00	Residential	137.00	71.00	137	71	208	5.4
	Zone 30 Subtotal					137	71	208	5.4
31	South Riding	1.00	Commercial	47.00	50.00	47	50	97	2.5
	Zone 31 Subtotal					47	50	97	2.5
36	Brambleton E	1.00	Employment	49.00	215.00	49	215	264	6.9
	Zone 36 Subtotal					49	215	264	6.9
37	Brambleton C	1.00	Commercial	43.00	46.00	43	46	89	2.3

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Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
	Zone 37 Subtotal					43	46	89	2.3
38	Brambleton R	1.00	Residential	411.00	223.00	411	223	634	16.5
	Zone 38 Subtotal					411	223	634	16.5
40	CDA By-Right	1.00	Residential	15.00	9.00	15	9	24	0.6
	Zone 40 Subtotal					15	9	24	0.6
41	Winsbury	1.00	Residential	30.00	17.00	30	17	47	1.2
	Zone 41 Subtotal					30	17	47	1.2
TOTAL						2082	1752	3834	100.0

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Trip Distribution Report

Percent Of Trips 2015

Zone	To Gates 1	2	3	4	5	6	7	8	9	10
1	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
2	6.0	5.0	35.0	6.0	5.0	5.0	10.0	5.0	5.0	18.0
4	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
5	5.0	2.0	45.0	4.0	13.0	0.0	2.0	5.0	10.0	14.0
9	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
12	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
13	5.0	5.0	25.0	4.0	10.0	10.0	9.0	5.0	5.0	22.0
15	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
17	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
18	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
20	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
21	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
22	5.0	0.0	20.0	5.0	20.0	5.0	15.0	5.0	0.0	25.0
23	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
27	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
28	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
29	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
30	5.0	5.0	35.0	6.0	0.0	5.0	15.0	5.0	5.0	19.0
31	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
35	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
36	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
37	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
38	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
40	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
41	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0

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Turning Movement By Zone Report
2012 PM

#68 Route 659 (Gum Spring Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=14.4,V/C=0.333)][+0.333 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	1	6	7	0	11	0	0	9	1	14	18	0	67
Zn 2	4	7	20	0	6	0	0	21	3	19	20	0	100
Zn 4	1	2	6	0	5	0	0	0	2	11	0	0	27
Zn 5	0	0	3	0	0	0	0	12	0	2	6	0	23
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	1	1	3	0	2	0	0	0	1	7	0	0	15
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	1	4	10	0	6	0	0	0	3	18	0	0	42
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	9	0	0	15	22	0	28	0	0	0	17	91
Zn 20	40	52	121	0	52	0	0	0	40	122	0	0	427
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	2	1	7	0	0	13	0	23
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 29	0	0	0	0	0	0	0	2	0	0	8	0	10
Zn 30	0	0	0	1	0	0	0	10	0	0	5	0	16
Zn 31	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	1	0	0	5	0	0	0	0	0	1	0	7
Zn 37	0	1	0	1	1	0	0	0	0	0	0	1	4
Zn 38	0	11	0	7	6	0	1	8	0	0	4	12	49
Zn 40	0	0	0	0	0	1	0	2	0	0	3	0	6
Zn 41	0	2	0	1	1	1	1	1	0	0	1	2	10
Added	48	95	172	9	110	27	4	107	51	192	85	33	933
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	48	95	172	9	110	27	4	107	51	192	85	33	933
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	48	95	172	9	110	27	4	107	51	192	85	33	933

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#75 Braddock Road/Gum Spring Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=16.7,V/C=0.360)][+0.360 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	16	0	9	8	8	16	0	0	0	0	18	75
Zn 2	0	9	0	18	9	11	10	0	0	0	0	16	73
Zn 4	0	4	0	5	2	3	6	0	0	0	0	10	30
Zn 5	0	3	0	0	2	0	0	0	0	0	0	0	5
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	10	0	7	5	4	7	0	0	0	0	14	47
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	76	0	0	0	0	27	15	85	43	0	151	0	397
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	16	0	14	25	0	0	0	0	0	0	9	64
Zn 20	0	74	0	15	74	23	23	0	0	0	0	15	224
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	1	0	0	0	0	0	0	3	0	0	5	0	9
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	7	0	0	4	0	11
Zn 29	0	0	1	0	0	0	0	1	0	5	6	0	13
Zn 30	0	0	7	0	0	0	0	4	0	3	2	0	16
Zn 31	0	0	1	0	0	0	0	3	0	1	4	0	9
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	1	0	0	5	0	0	0	0	0	0	0	6
Zn 37	0	1	1	0	1	0	0	0	0	1	0	0	4
Zn 38	0	11	0	0	6	0	0	0	0	0	0	0	17
Zn 40	1	0	0	0	0	0	0	1	1	0	2	0	5
Zn 41	0	2	2	0	1	0	0	0	0	1	0	0	6
Added	78	147	11	68	138	77	79	105	44	11	173	82	1013
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	78	147	11	68	138	77	79	105	44	11	173	82	1013
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	78	147	11	68	138	77	79	105	44	11	173	82	1013

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume

#80 Route 616 (Fleetwood Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=2.4,V/C=0.039)][+0.039 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	9	0	0	0	22	0	0	11	5	47
Zn 2	0	0	0	2	0	0	0	17	0	0	18	2	39
Zn 4	0	0	0	0	0	0	0	3	0	0	1	0	4
Zn 5	0	0	0	0	0	0	0	12	0	0	6	0	18
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	1	0	0	1	0	0	1	0	0	1	0	4
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	1	4	0	0	7	0	0	3	3	0	1	0	19
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	1	0	0	0	0	24	0	2	39	0	66
Zn 20	0	0	0	5	0	0	0	35	0	0	35	5	80
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	4	5	10	0	8	0	0	0	8	18	0	0	53
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 29	0	0	0	0	0	0	0	1	0	0	7	0	8
Zn 30	0	0	0	1	0	0	0	9	0	0	5	0	15
Zn 31	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	1	0	0	2	2	0	0	0	0	2	0	7
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	1	2	18	0	0	10	0	31
Zn 40	2	2	2	0	3	0	0	0	3	4	0	0	16
Zn 41	0	0	0	0	0	0	1	6	0	0	4	0	11
Added	7	11	14	17	21	3	3	160	13	24	147	12	432
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	7	11	14	17	21	3	3	160	13	24	147	12	432
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	7	11	14	17	21	3	3	160	13	24	147	12	432

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#83 Goshen Road/Westport Blvd.													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=2.7,V/C=0.000)][+0.000 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	1	0	0	1	0	0	0	0	0	0	0	2
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	5	0	0	9	0	0	0	0	0	0	0	14
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	1	0	0	2	0	0	0	0	0	0	0	3
Zn 20	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	18	34	0	0	0	0	0	10	0	19	81
Zn 27	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 28	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 31	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	1	0	0	2	0	0	0	0	0	0	0	3
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 40	0	0	5	10	0	0	0	0	0	3	0	6	24
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	7	23	44	15	0	0	0	0	13	0	25	127
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	7	23	44	15	0	0	0	0	13	0	25	127
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	7	23	44	15	0	0	0	0	13	0	25	127

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#85 Braddock Road/Goshen Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=1.3,V/C=0.025)][+0.025 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	16	0	0	8	0	24
Zn 2	0	0	0	0	0	0	0	8	0	0	9	0	17
Zn 4	0	0	0	0	0	0	0	6	0	0	3	0	9
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	1	0	0	0	6	0	0	3	1	11
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	9	0	0	0	67	0	0	37	5	118
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	2	1	0	0	0	0	0	3
Zn 20	0	0	0	0	0	0	0	23	0	0	23	0	46
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	3	0	7	12	0	0	0	0	6	28
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	4	0	0	2	0	6
Zn 29	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 30	0	0	0	0	0	0	0	4	0	0	2	0	6
Zn 31	0	0	0	0	0	0	0	3	0	0	4	0	7
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	2	0	0	0	0	0	0	0	1	3
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 40	0	0	0	2	0	2	3	0	0	0	0	3	10
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	18	0	10	16	139	0	0	93	15	291
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	18	0	10	16	139	0	0	93	15	291
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	18	0	10	16	139	0	0	93	15	291

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume

#94 Stone Springs Blvd./Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=6.0,V/C=0.112)][+0.112 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	15	9	9	0	17	0	0	1	30	18	1	0	100
Zn 2	16	12	21	0	11	0	0	3	15	20	4	0	102
Zn 4	0	1	0	0	2	0	0	2	1	0	1	0	7
Zn 5	0	0	0	0	0	0	0	12	0	0	6	0	18
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	1	0	0	1	0	0	1	0	3
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	3	0	0	1	0	4
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	15	0	28	24	18	26	0	0	0	23	0	134
Zn 20	0	0	0	0	0	0	0	40	0	0	40	0	80
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	3	2	8	0	0	15	0	28
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 29	0	0	0	0	0	0	0	1	0	0	7	0	8
Zn 30	0	0	0	0	0	0	0	10	0	0	5	0	15
Zn 31	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	2	0	2
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	5	10	9	0	0	5	0	29
Zn 40	0	0	0	0	0	1	0	2	0	0	3	0	6
Zn 41	0	0	0	0	0	3	5	2	0	0	1	1	12
Added	32	38	31	29	55	30	42	102	45	38	121	1	564
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	32	38	31	29	55	30	42	102	45	38	121	1	564
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	32	38	31	29	55	30	42	102	45	38	121	1	564

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#95 West Spine Road/ Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=0.0,V/C=0.000)][+0.000 V/C]

Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	17	0	0	32	0	49
Zn 2	0	0	0	0	0	0	0	42	0	0	38	0	80
Zn 4	0	0	0	0	0	0	0	6	0	0	11	0	17
Zn 5	0	0	0	0	0	0	0	16	0	0	8	0	24
Zn 9	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 12	0	0	0	0	0	0	0	3	0	0	7	0	10
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	10	0	0	18	0	28
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	0	0	28	0	0	17	0	45
Zn 20	0	0	0	0	0	0	0	121	0	0	122	0	243
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 23	0	0	0	0	0	0	0	7	0	0	13	0	20
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 29	0	0	0	0	0	0	0	2	0	0	8	0	10
Zn 30	0	0	0	0	0	0	0	10	0	0	5	0	15
Zn 31	0	0	0	0	0	0	0	4	0	0	4	0	8
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	0	0	0	0	0	0	14	0	0	17	0	31
Zn 40	0	0	0	0	0	0	0	2	0	0	3	0	5
Zn 41	0	0	0	0	0	0	0	2	0	0	2	0	4
Added	0	0	0	0	0	0	0	288	0	0	310	0	598
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	0	0	0	0	288	0	0	310	0	598
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	0	0	0	0	288	0	0	310	0	598

Scenario Report

Scenario:	2015 AM
Command:	2015
Volume:	2015 AM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	2015 AM
Trip Distribution:	2015
Paths:	2015 BG
Routes:	Default Route
Configuration:	AM Peak

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Trip Generation Report

Forecast for 2015 AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Stone Ridge	1.00	Residential	28.00	209.00	28	209	237	4.3
	Zone 1 Subtotal					28	209	237	4.3
2	Stone Ridge	1.00	Commercial	584.00	466.00	584	466	1050	19.1
	Zone 2 Subtotal					584	466	1050	19.1
4	Providence G	1.00	Residential	12.00	45.00	12	45	57	1.0
	Zone 4 Subtotal					12	45	57	1.0
5	Pinebrook	1.00	Residential	21.00	86.00	21	86	107	1.9
	Zone 5 Subtotal					21	86	107	1.9
9	CD Smith Pro	1.00	Residential	25.00	92.00	25	92	117	2.1
	Zone 9 Subtotal					25	92	117	2.1
12	Braddock Cor	1.00	Residential	10.00	38.00	10	38	48	0.9
	Zone 12 Subtotal					10	38	48	0.9
13	Kirkpatrick	1.00	Residential	27.00	97.00	27	97	124	2.3
	Zone 13 Subtotal					27	97	124	2.3
15	Kirkpatrick	1.00	Residential	130.00	408.00	130	408	538	9.8
	Zone 15 Subtotal					130	408	538	9.8
17	Glascock Fie	1.00	Residential	11.00	56.00	11	56	67	1.2
	Zone 17 Subtotal					11	56	67	1.2
18	Glascock Fie	1.00	Employment	85.00	30.00	85	30	115	2.1
	Zone 18 Subtotal					85	30	115	2.1
20	Gum Spring V	1.00	Commercial	158.00	132.00	158	132	290	5.3
	Zone 20 Subtotal					158	132	290	5.3
21	West Spine P	1.00	By Right Emplo	95.00	13.00	95	13	108	2.0
	Zone 21 Subtotal					95	13	108	2.0
22	Westport By	1.00	Residential	142.00	427.00	142	427	569	10.4
	Zone 22 Subtotal					142	427	569	10.4
23	Marrwood	1.00	Residential	15.00	46.00	15	46	61	1.1
	Zone 23 Subtotal					15	46	61	1.1
27	South Villag	1.00	Residential	2.00	15.00	2	15	17	0.3
	Zone 27 Subtotal					2	15	17	0.3
28	South Riding	1.00	Residential	36.00	139.00	36	139	175	3.2

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Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
	Zone 28 Subtotal					36	139	175	3.2
29	South Riding	1.00	Employment	103.00	14.00	103	14	117	2.1
	Zone 29 Subtotal					103	14	117	2.1
30	South Riding	1.00	Residential	69.00	252.00	69	252	321	5.8
	Zone 30 Subtotal					69	252	321	5.8
31	South Riding	1.00	Commercial	18.00	11.00	18	11	29	0.5
	Zone 31 Subtotal					18	11	29	0.5
35	Arcola Cente	1.00	Commercial	95.00	61.00	95	61	156	2.8
	Zone 35 Subtotal					95	61	156	2.8
36	Brambleton E	1.00	Employment	212.00	35.00	212	35	247	4.5
	Zone 36 Subtotal					212	35	247	4.5
37	Brambleton C	1.00	Commercial	18.00	11.00	18	11	29	0.5
	Zone 37 Subtotal					18	11	29	0.5
38	Brambleton R	1.00	Residential	199.00	656.00	199	656	855	15.6
	Zone 38 Subtotal					199	656	855	15.6
40	CDA By-Right	1.00	Residential	6.00	17.00	6	17	23	0.4
	Zone 40 Subtotal					6	17	23	0.4
41	Winsbury	1.00	Residential	9.00	28.00	9	28	37	0.7
	Zone 41 Subtotal					9	28	37	0.7
TOTAL						2110	3384	5494	100.0

Trip Distribution Report

Percent Of Trips 2015

Zone	To Gates 1	2	3	4	5	6	7	8	9	10
1	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
2	6.0	5.0	35.0	6.0	5.0	5.0	10.0	5.0	5.0	18.0
4	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
5	5.0	2.0	45.0	4.0	13.0	0.0	2.0	5.0	10.0	14.0
9	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
12	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
13	5.0	5.0	25.0	4.0	10.0	10.0	9.0	5.0	5.0	22.0
15	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
17	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
18	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
20	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
21	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
22	5.0	0.0	20.0	5.0	20.0	5.0	15.0	5.0	0.0	25.0
23	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
27	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
28	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
29	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
30	5.0	5.0	35.0	6.0	0.0	5.0	15.0	5.0	5.0	19.0
31	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
35	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
36	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
37	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
38	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
40	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
41	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0

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Turning Movement By Zone Report
2015 AM

#68 Route 659 (Gum Spring Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=0.3,V/C=0.020)][+0.020 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	20	0	0	5	0	25
Zn 2	0	0	0	0	0	0	0	64	0	0	76	0	140
Zn 4	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 5	0	0	0	0	0	0	0	2	0	0	9	0	11
Zn 9	0	0	0	0	0	0	0	2	0	0	1	0	3
Zn 12	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	1	0	0	2	0	3
Zn 17	0	0	0	0	0	10	0	11	0	0	1	2	24
Zn 18	0	0	0	0	0	4	0	7	0	0	0	22	33
Zn 20	0	0	0	0	0	0	0	32	0	0	27	0	59
Zn 21	0	0	0	0	0	0	0	11	0	0	1	0	12
Zn 22	0	0	0	0	0	0	0	73	0	0	24	0	97
Zn 23	0	0	0	0	0	0	0	11	0	0	4	0	15
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	6	0	7
Zn 29	0	0	0	0	0	0	0	12	0	0	2	0	14
Zn 30	0	0	0	0	0	0	0	4	0	0	13	0	17
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	13	0	0	9	0	22
Zn 36	0	0	0	0	0	0	0	2	0	0	0	0	2
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	0	0	5	0	0	16	0	21
Zn 40	0	0	0	0	0	0	0	3	0	0	1	0	4
Zn 41	0	0	0	0	0	3	0	2	0	0	1	0	6
Added	0	0	0	0	0	17	0	278	0	0	202	24	521
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	0	0	17	0	278	0	0	202	24	521
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	0	0	17	0	278	0	0	202	24	521

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#75 Braddock Road/Gum Spring Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=441.9,V/C=2.755)][+2.755 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	4	0	27	31	26	4	0	0	0	0	4	96
Zn 2	0	70	0	77	56	41	52	0	0	0	0	96	392
Zn 4	0	1	0	11	5	7	2	0	0	0	0	3	29
Zn 5	0	0	0	0	1	3	1	0	0	0	0	0	5
Zn 9	2	0	0	0	0	4	16	39	6	0	11	0	78
Zn 12	0	2	0	12	9	7	2	0	0	0	0	3	35
Zn 13	0	0	0	0	0	3	13	22	1	0	6	0	45
Zn 15	28	0	0	0	0	20	64	156	88	0	50	0	406
Zn 17	0	3	0	3	10	0	0	0	0	0	0	1	17
Zn 18	0	11	0	2	3	0	0	0	0	0	0	4	20
Zn 20	0	36	0	6	30	9	11	0	0	0	0	7	99
Zn 21	0	15	0	1	2	2	14	0	0	0	0	9	43
Zn 22	0	0	0	0	0	18	56	51	0	0	17	0	142
Zn 23	0	0	0	0	0	0	1	5	0	0	2	0	8
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	3	0	0	13	0	16
Zn 29	0	0	7	0	0	0	0	9	0	1	1	0	18
Zn 30	0	1	0	0	5	0	0	5	0	1	19	0	31
Zn 31	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 35	0	1	0	0	1	0	0	0	0	0	0	0	2
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	1	0	0	3	0	0	0	0	0	0	0	4
Zn 40	0	0	0	0	0	0	0	2	1	0	1	0	4
Zn 41	0	0	0	0	0	0	0	0	0	1	0	0	1
Added	30	147	8	141	156	142	234	296	96	4	123	128	1505
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	30	147	8	141	156	142	234	296	96	4	123	128	1505
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	30	147	8	141	156	142	234	296	96	4	123	128	1505

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#80 Route 616 (Fleetwood Road)/Route 50													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=C,Del=7.6,V/C=0.187)][+0.187 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	2	0	0	0	4	0	0	26	14	46
Zn 2	0	0	0	18	0	0	0	65	0	0	52	14	149
Zn 4	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 5	0	0	0	0	0	0	0	2	0	0	9	0	11
Zn 9	0	5	1	0	1	0	0	0	0	0	0	0	7
Zn 12	0	1	0	0	0	0	0	0	0	0	1	0	2
Zn 13	0	4	0	0	1	0	0	0	0	0	0	0	5
Zn 15	3	8	0	0	3	0	0	1	1	0	2	0	18
Zn 17	0	0	0	0	0	0	0	2	0	0	16	0	18
Zn 18	0	0	6	0	0	0	0	13	0	2	6	0	27
Zn 20	0	0	0	5	0	0	0	17	0	0	14	4	40
Zn 21	0	0	0	0	0	0	0	10	0	0	1	0	11
Zn 22	68	53	77	0	18	0	0	0	23	26	0	0	265
Zn 23	7	6	14	0	2	0	0	0	2	5	0	0	36
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	6	0	7
Zn 29	0	0	0	0	0	0	0	11	0	0	1	0	12
Zn 30	0	0	0	1	0	0	0	3	0	0	11	3	18
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	14	0	0	9	0	23
Zn 36	0	5	0	0	1	0	0	3	0	0	0	0	9
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	4	0	0	14	0	0	10	0	0	32	0	60
Zn 40	3	3	5	0	1	0	0	0	1	2	0	0	15
Zn 41	0	0	0	0	0	1	0	2	0	0	8	0	11
Added	82	90	104	25	41	1	0	159	27	34	199	34	796
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	82	90	104	25	41	1	0	159	27	34	199	34	796
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	82	90	104	25	41	1	0	159	27	34	199	34	796

Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume

#83 Goshen Road/Westport Blvd.
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=3.0,V/C=0.000)][+0.000 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	6	0	0	2	0	0	0	0	0	0	0	8
Zn 12	0	1	0	0	0	0	0	0	0	0	0	0	1
Zn 13	0	4	0	0	1	0	0	0	0	0	0	0	5
Zn 15	0	11	0	0	4	0	0	0	0	0	0	0	15
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	6	0	0	2	0	0	0	0	0	0	0	8
Zn 20	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	66	199	0	0	0	0	0	265
Zn 23	0	0	6	9	0	0	0	0	0	18	0	28	61
Zn 27	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 28	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 31	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	5	0	0	1	0	0	0	0	0	0	0	6
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	4	0	0	14	0	0	0	0	0	0	0	18
Zn 40	0	0	2	4	0	0	0	0	0	6	0	11	23
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	38	8	13	24	66	199	0	0	24	0	39	411
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	38	8	13	24	66	199	0	0	24	0	39	411
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	38	8	13	24	66	199	0	0	24	0	39	411

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#85 Braddock Road/Goshen Road													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=1.2,V/C=0.069)][+0.069 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	3	0	0	25	0	28
Zn 2	0	0	0	0	0	0	0	41	0	0	33	0	74
Zn 4	0	0	0	0	0	0	0	1	0	0	4	0	5
Zn 5	0	0	0	0	0	0	0	1	0	0	3	0	4
Zn 9	0	0	0	2	0	0	0	4	0	0	16	6	28
Zn 12	0	0	0	0	0	0	0	1	0	0	5	1	7
Zn 13	0	0	0	1	0	0	0	4	0	0	14	4	23
Zn 15	0	0	0	4	0	0	0	19	0	0	60	11	94
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	2	6	0	0	0	0	0	8
Zn 20	0	0	0	0	0	0	0	11	0	0	9	0	20
Zn 21	0	0	0	0	0	0	0	8	0	0	1	0	9
Zn 22	0	0	0	0	0	0	0	128	0	0	43	0	171
Zn 23	0	0	0	12	0	7	2	0	0	0	0	4	25
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	2	0	0	7	0	9
Zn 29	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 30	0	0	0	0	0	0	0	2	0	0	7	0	9
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 36	0	0	0	1	0	0	0	0	0	0	0	5	6
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	14	0	0	0	0	0	0	0	4	18
Zn 40	0	0	0	3	0	3	1	0	0	0	0	1	8
Zn 41	0	0	0	0	0	0	0	1	0	0	0	0	1
Added	0	0	0	37	0	12	9	230	0	0	230	37	555
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	37	0	12	9	230	0	0	230	37	555
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	37	0	12	9	230	0	0	230	37	555

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#94 Stone Springs Blvd./Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=12.3,V/C=0.321)][+0.321 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	38	26	20	0	4	0	0	0	5	3	2	0	98
Zn 2	57	47	54	0	58	0	0	11	72	67	8	0	374
Zn 4	1	4	0	0	1	0	0	1	0	0	3	0	10
Zn 5	0	0	0	0	0	0	0	2	0	0	9	0	11
Zn 9	0	2	0	0	0	0	0	2	0	0	1	0	5
Zn 12	0	2	0	0	0	0	0	0	0	0	1	0	3
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	1	0	0	2	0	3
Zn 17	0	2	0	11	11	6	2	0	0	0	10	1	43
Zn 18	0	9	0	7	3	3	19	0	0	0	4	0	45
Zn 20	1	2	0	11	2	0	0	21	1	0	18	9	65
Zn 21	0	0	0	1	3	0	0	10	0	0	1	0	15
Zn 22	0	0	0	0	0	1	4	73	0	0	24	0	102
Zn 23	0	0	0	0	0	1	3	11	0	0	4	0	19
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	6	0	7
Zn 29	0	0	0	1	0	0	0	11	0	0	1	0	13
Zn 30	0	0	0	0	0	0	0	4	0	0	13	0	17
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	0	0	0	1	1	13	0	0	9	0	24
Zn 36	0	0	0	0	0	0	1	2	0	0	0	0	3
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	0	0	16	5	5	0	0	16	0	42
Zn 40	0	0	0	0	0	1	2	3	0	0	1	0	7
Zn 41	0	0	0	2	0	5	2	0	0	0	3	1	13
Added	96	94	73	33	83	34	39	171	78	70	138	11	920
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	96	94	73	33	83	34	39	171	78	70	138	11	920
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	96	94	73	33	83	34	39	171	78	70	138	11	920

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#95 West Spine Road/ Route 50													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=13.7,V/C=0.500)][+0.500 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	2	0	39	0	0	0	0	20	0	5	3	0	69
Zn 2	8	0	126	0	0	0	0	54	11	158	67	0	424
Zn 4	3	0	15	0	0	0	0	0	1	4	0	0	23
Zn 5	0	0	1	0	0	0	0	2	0	4	9	0	16
Zn 9	0	0	13	0	0	0	0	1	0	4	0	0	18
Zn 12	1	0	7	0	0	0	0	0	0	2	0	0	10
Zn 13	0	0	13	0	0	0	0	0	0	3	0	0	16
Zn 15	2	0	62	0	0	0	0	0	1	20	0	0	85
Zn 17	1	0	0	0	0	0	0	8	3	0	2	0	14
Zn 18	7	0	0	0	0	0	0	5	3	0	15	0	30
Zn 20	27	0	57	0	0	0	0	0	32	68	0	0	184
Zn 21	1	0	6	0	0	0	0	0	11	43	0	0	61
Zn 22	0	0	56	0	0	0	0	73	0	18	24	0	171
Zn 23	0	0	1	0	0	0	0	11	0	0	4	0	16
Zn 27	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 28	0	0	0	0	0	0	0	1	0	0	6	0	7
Zn 29	0	0	0	0	0	0	0	12	0	0	2	0	14
Zn 30	0	0	0	0	0	0	0	4	0	0	13	0	17
Zn 31	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 35	0	0	1	0	0	0	0	13	0	1	9	0	24
Zn 36	0	0	0	0	0	0	0	2	0	0	0	0	2
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	1	0	0	0	0	5	0	3	16	0	25
Zn 40	0	0	0	0	0	0	0	3	0	0	1	0	4
Zn 41	0	0	0	0	0	0	0	2	0	0	1	0	3
Added	53	0	398	0	0	0	0	217	61	333	173	0	1235
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	53	0	398	0	0	0	0	217	61	333	173	0	1235
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	53	0	398	0	0	0	0	217	61	333	173	0	1235

Scenario Report

Scenario:	2015 PM
Command:	2015
Volume:	2015 PM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	2015 PM
Trip Distribution:	2015
Paths:	2015 BG
Routes:	Default Route
Configuration:	AM Peak

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Trip Generation Report

Forecast for 2015 PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Stone Ridge	1.00	Residential	173.00	89.00	173	89	262	3.8
	Zone 1 Subtotal					173	89	262	3.8
2	Stone Ridge	1.00	Commercial	270.00	279.00	270	279	549	8.0
	Zone 2 Subtotal					270	279	549	8.0
4	Providence G	1.00	Residential	42.00	22.00	42	22	64	0.9
	Zone 4 Subtotal					42	22	64	0.9
5	Pinebrook	1.00	Residential	92.00	48.00	92	48	140	2.0
	Zone 5 Subtotal					92	48	140	2.0
9	CD Smith Pro	1.00	Residential	97.00	51.00	97	51	148	2.2
	Zone 9 Subtotal					97	51	148	2.2
12	Braddock Cor	1.00	Residential	42.00	22.00	42	22	64	0.9
	Zone 12 Subtotal					42	22	64	0.9
13	Kirkpatrick	1.00	Residential	103.00	55.00	103	55	158	2.3
	Zone 13 Subtotal					103	55	158	2.3
15	Kirkpatrick	1.00	Residential	405.00	226.00	405	226	631	9.2
	Zone 15 Subtotal					405	226	631	9.2
17	Glascock Fie	1.00	Residential	52.00	26.00	52	26	78	1.1
	Zone 17 Subtotal					52	26	78	1.1
18	Glascock Fie	1.00	Employment	116.00	186.00	116	186	302	4.4
	Zone 18 Subtotal					116	186	302	4.4
20	Gum Spring V	1.00	Commercial	327.00	325.00	327	325	652	9.5
	Zone 20 Subtotal					327	325	652	9.5
21	West Spine P	1.00	By Right Emplo	23.00	113.00	23	113	136	2.0
	Zone 21 Subtotal					23	113	136	2.0
22	Westport By	1.00	Residential	445.00	251.00	445	251	696	10.2
	Zone 22 Subtotal					445	251	696	10.2
23	Marrwood	1.00	Residential	52.00	29.00	52	29	81	1.2
	Zone 23 Subtotal					52	29	81	1.2
27	South Villag	1.00	Residential	12.00	5.00	12	5	17	0.2
	Zone 27 Subtotal					12	5	17	0.2
28	South Riding	1.00	Residential	128.00	68.00	128	68	196	2.9

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Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
	Zone 28 Subtotal					128	68	196	2.9
29	South Riding	1.00	Employment	14.00	70.00	14	70	84	1.2
	Zone 29 Subtotal					14	70	84	1.2
30	South Riding	1.00	Residential	269.00	143.00	269	143	412	6.0
	Zone 30 Subtotal					269	143	412	6.0
31	South Riding	1.00	Commercial	69.00	75.00	69	75	144	2.1
	Zone 31 Subtotal					69	75	144	2.1
35	Arcola Cente	1.00	Commercial	300.00	326.00	300	326	626	9.1
	Zone 35 Subtotal					300	326	626	9.1
36	Brambleton E	1.00	Employment	49.00	215.00	49	215	264	3.9
	Zone 36 Subtotal					49	215	264	3.9
37	Brambleton C	1.00	Commercial	63.00	68.00	63	68	131	1.9
	Zone 37 Subtotal					63	68	131	1.9
38	Brambleton R	1.00	Residential	607.00	330.00	607	330	937	13.7
	Zone 38 Subtotal					607	330	937	13.7
40	CDA By-Right	1.00	Residential	15.00	9.00	15	9	24	0.4
	Zone 40 Subtotal					15	9	24	0.4
41	Winsbury	1.00	Residential	30.00	17.00	30	17	47	0.7
	Zone 41 Subtotal					30	17	47	0.7
TOTAL						3795	3048	6843	100.0

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Trip Distribution Report

Percent Of Trips 2015

Zone	To Gates 1	2	3	4	5	6	7	8	9	10
1	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
2	6.0	5.0	35.0	6.0	5.0	5.0	10.0	5.0	5.0	18.0
4	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
5	5.0	2.0	45.0	4.0	13.0	0.0	2.0	5.0	10.0	14.0
9	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
12	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
13	5.0	5.0	25.0	4.0	10.0	10.0	9.0	5.0	5.0	22.0
15	5.0	5.0	27.0	4.0	10.0	5.0	14.0	5.0	5.0	20.0
17	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0
18	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
20	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
21	5.0	2.0	20.0	5.0	15.0	5.0	15.0	5.0	5.0	23.0
22	5.0	0.0	20.0	5.0	20.0	5.0	15.0	5.0	0.0	25.0
23	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
27	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
28	5.0	5.0	40.0	5.0	0.0	5.0	9.0	11.0	5.0	15.0
29	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
30	5.0	5.0	35.0	6.0	0.0	5.0	15.0	5.0	5.0	19.0
31	9.0	5.0	25.0	6.0	10.0	5.0	15.0	0.0	3.0	22.0
35	5.0	0.0	25.0	5.0	10.0	5.0	10.0	10.0	10.0	20.0
36	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
37	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
38	2.0	0.0	15.0	2.0	25.0	10.0	20.0	0.0	15.0	11.0
40	5.0	0.0	15.0	5.0	20.0	5.0	15.0	5.0	5.0	25.0
41	5.0	5.0	25.0	5.0	10.0	5.0	15.0	0.0	5.0	25.0

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Turning Movement By Zone Report
2015 PM

#68 Route 659 (Gum Spring Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=0.5,V/C=0.045)][+0.045 V/C]

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	10	0	0	17	0	27
Zn 2	0	0	0	0	0	0	0	37	0	0	36	0	73
Zn 4	0	0	0	0	0	0	0	3	0	0	1	0	4
Zn 5	0	0	0	0	0	0	0	10	0	0	5	0	15
Zn 9	0	0	0	0	0	0	0	1	0	0	2	0	3
Zn 12	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	2	0	0	1	0	3
Zn 17	0	0	0	0	0	5	0	5	0	0	5	9	24
Zn 18	0	0	0	0	0	26	0	44	0	0	0	30	100
Zn 20	0	0	0	0	0	0	0	66	0	0	66	0	132
Zn 21	0	0	0	0	0	0	0	3	0	0	13	0	16
Zn 22	0	0	0	0	0	0	0	43	0	0	76	0	119
Zn 23	0	0	0	0	0	0	0	7	0	0	13	0	20
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	5	0	0	3	0	8
Zn 29	0	0	0	0	0	0	0	2	0	0	8	0	10
Zn 30	0	0	0	0	0	0	0	14	0	0	7	0	21
Zn 31	0	0	0	0	0	0	0	5	0	0	6	0	11
Zn 35	0	0	0	0	0	0	0	42	0	0	46	0	88
Zn 36	0	0	0	0	0	0	0	0	0	0	2	0	2
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	0	0	0	0	0	0	15	0	0	8	0	23
Zn 40	0	0	0	0	0	0	0	2	0	0	3	0	5
Zn 41	0	0	0	0	0	2	0	1	0	0	2	2	7
Added	0	0	0	0	0	32	0	319	0	0	321	40	712
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	0	0	32	0	319	0	0	321	40	712
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	0	0	32	0	319	0	0	321	40	712

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#75 Braddock Road/Gum Spring Road
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=1586.2,V/C=8.211)][+8.211 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	26	0	12	13	11	22	0	0	0	0	22	106
Zn 2	0	32	0	46	33	25	24	0	0	0	0	45	205
Zn 4	0	4	0	5	2	3	6	0	0	0	0	10	30
Zn 5	0	1	0	0	0	2	3	0	0	0	0	0	6
Zn 9	6	0	0	0	0	16	9	21	3	0	41	0	96
Zn 12	0	10	0	7	5	4	7	0	0	0	0	14	47
Zn 13	2	0	0	0	0	13	7	13	1	0	24	0	60
Zn 15	87	0	0	0	0	63	35	87	49	0	155	0	476
Zn 17	0	13	0	2	5	0	0	0	0	0	0	3	23
Zn 18	0	16	0	14	21	0	0	0	0	0	0	6	57
Zn 20	0	74	0	15	74	23	23	0	0	0	0	15	224
Zn 21	0	4	0	11	18	16	3	0	0	0	0	2	54
Zn 22	0	0	0	0	0	58	33	30	0	0	53	0	174
Zn 23	0	0	0	0	0	1	1	3	0	0	6	0	11
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	12	0	0	6	0	18
Zn 29	0	0	1	0	0	0	0	1	0	5	6	0	13
Zn 30	0	5	1	0	3	0	0	20	0	1	11	0	41
Zn 31	0	0	0	0	0	0	0	10	0	0	11	0	21
Zn 35	0	3	0	0	3	2	2	0	0	0	0	0	10
Zn 36	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 37	0	1	1	0	1	0	0	0	0	1	0	0	4
Zn 38	0	2	0	0	1	0	0	0	0	0	0	0	3
Zn 40	1	0	0	0	0	0	0	1	0	0	2	0	4
Zn 41	0	0	2	0	0	0	2	0	0	1	0	0	5
Added	96	192	5	112	181	238	176	200	53	8	315	117	1693
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	96	192	5	112	181	238	176	200	53	8	315	117	1693
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	96	192	5	112	181	238	176	200	53	8	315	117	1693

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume

#80 Route 616 (Fleetwood Road)/Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=D,Del=9.5,V/C=0.331)][+0.331 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	11	0	0	0	22	0	0	11	6	50
Zn 2	0	0	0	8	0	0	0	30	0	0	31	8	77
Zn 4	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 5	0	0	0	0	0	0	0	10	0	0	5	0	15
Zn 9	0	2	1	0	5	0	0	0	0	1	0	0	9
Zn 12	0	1	0	0	1	0	0	1	0	0	1	0	4
Zn 13	0	2	0	0	4	0	0	0	0	0	0	0	6
Zn 15	2	5	0	0	8	0	0	2	3	0	1	0	21
Zn 17	0	0	0	0	0	0	0	11	0	0	7	0	18
Zn 18	0	0	8	0	0	0	0	17	0	9	35	0	69
Zn 20	0	0	0	10	0	0	0	35	0	0	35	10	90
Zn 21	0	0	0	0	0	0	0	2	0	0	12	0	14
Zn 22	40	31	45	0	56	0	0	0	71	80	0	0	323
Zn 23	4	4	9	0	7	0	0	0	8	16	0	0	48
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	5	0	0	3	0	8
Zn 29	0	0	0	0	0	0	0	1	0	0	7	0	8
Zn 30	0	0	0	3	0	0	0	11	0	0	6	1	21
Zn 31	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 35	0	0	2	0	0	0	0	44	0	2	47	0	95
Zn 36	0	1	0	0	5	0	0	1	0	0	3	0	10
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	13	0	0	7	0	0	30	0	0	16	0	66
Zn 40	2	1	2	0	2	0	0	0	3	4	0	0	14
Zn 41	0	0	0	0	0	0	1	7	0	0	5	0	13
Added	48	61	67	32	96	1	1	238	86	113	233	25	1001
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	48	61	67	32	96	1	1	238	86	113	233	25	1001
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	48	61	67	32	96	1	1	238	86	113	233	25	1001

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume

#83 Goshen Road/Westport Blvd.
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=A,Del=3.6,V/C=0.000)][+0.000 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 5	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 9	0	3	0	0	7	0	0	0	0	0	0	0	10
Zn 12	0	1	0	0	1	0	0	0	0	0	0	0	2
Zn 13	0	2	0	0	4	0	0	0	0	0	0	0	6
Zn 15	0	6	0	0	11	0	0	0	0	0	0	0	17
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	8	0	0	9	0	0	0	0	0	0	0	17
Zn 20	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 21	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 22	0	0	0	0	0	207	117	0	0	0	0	0	324
Zn 23	0	0	21	31	0	0	0	0	0	12	0	17	81
Zn 27	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 28	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 29	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 30	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 31	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 35	0	2	0	0	2	0	0	0	0	0	0	0	4
Zn 36	0	1	0	0	5	0	0	0	0	0	0	0	6
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	13	0	0	7	0	0	0	0	0	0	0	20
Zn 40	0	0	5	10	0	0	0	0	0	3	0	6	24
Zn 41	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	37	26	41	47	207	117	0	0	15	0	23	513
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	37	26	41	47	207	117	0	0	15	0	23	513
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	37	26	41	47	207	117	0	0	15	0	23	513

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#85 Braddock Road/Goshen Road													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=B,Del=1.4,V/C=0.099)][+0.099 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	0	0	0	0	0	0	0	21	0	0	11	0	32
Zn 2	0	0	0	0	0	0	0	19	0	0	20	0	39
Zn 4	0	0	0	0	0	0	0	4	0	0	2	0	6
Zn 5	0	0	0	0	0	0	0	3	0	0	2	0	5
Zn 9	0	0	0	7	0	0	0	17	0	0	9	3	36
Zn 12	0	0	0	1	0	0	0	5	0	0	3	1	10
Zn 13	0	0	0	4	0	0	0	15	0	0	8	2	29
Zn 15	0	0	0	11	0	0	0	60	0	0	33	6	110
Zn 17	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 18	0	0	0	0	0	9	8	0	0	0	0	0	17
Zn 20	0	0	0	0	0	0	0	23	0	0	23	0	46
Zn 21	0	0	0	0	0	0	0	2	0	0	10	0	12
Zn 22	0	0	0	0	0	0	0	75	0	0	133	0	208
Zn 23	0	0	0	7	0	4	8	0	0	0	0	13	32
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	6	0	0	3	0	9
Zn 29	0	0	0	0	0	0	0	0	0	0	1	0	1
Zn 30	0	0	0	0	0	0	0	8	0	0	4	0	12
Zn 31	0	0	0	0	0	0	0	5	0	0	5	0	10
Zn 35	0	0	0	2	0	0	0	2	0	0	2	2	8
Zn 36	0	0	0	5	0	0	0	0	0	0	0	1	6
Zn 37	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 38	0	0	0	7	0	0	0	0	0	0	0	13	20
Zn 40	0	0	0	2	0	2	3	0	0	0	0	3	10
Zn 41	0	0	0	0	0	0	0	2	0	0	0	0	2
Added	0	0	0	46	0	15	19	267	0	0	269	44	660
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	0	0	0	46	0	15	19	267	0	0	269	44	660
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	0	0	0	46	0	15	19	267	0	0	269	44	660

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Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume

#94 Stone Springs Blvd./Route 50
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=E,Del=13.5,V/C=0.343)][+0.343 V/C]

Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	16	11	8	0	22	0	0	2	31	16	1	0	107
Zn 2	34	28	32	0	27	0	0	5	33	31	5	0	195
Zn 4	0	2	0	0	4	0	0	3	1	0	1	0	11
Zn 5	0	0	0	0	0	0	0	10	0	0	5	0	15
Zn 9	0	1	0	0	2	0	0	1	0	0	2	0	6
Zn 12	0	1	0	0	2	0	0	1	0	0	1	0	5
Zn 13	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 15	0	0	0	0	0	0	0	2	0	0	1	0	3
Zn 17	0	10	0	5	5	3	11	0	0	0	5	5	44
Zn 18	0	12	0	44	20	18	26	0	0	0	27	0	147
Zn 20	2	5	0	23	5	0	0	43	2	0	43	23	146
Zn 21	0	3	0	0	1	0	0	2	0	0	12	1	19
Zn 22	0	0	0	0	0	4	3	43	0	0	76	0	126
Zn 23	0	0	0	0	0	3	2	7	0	0	13	0	25
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	5	0	0	3	0	8
Zn 29	0	0	0	0	0	0	0	1	0	0	7	1	9
Zn 30	0	0	0	0	0	0	0	14	0	0	7	0	21
Zn 31	0	0	0	1	0	0	0	5	0	0	5	1	12
Zn 35	0	0	0	0	0	3	3	42	0	0	46	0	94
Zn 36	0	0	0	0	0	1	0	0	0	0	2	0	3
Zn 37	0	0	0	0	0	0	0	1	0	0	1	0	2
Zn 38	0	0	0	0	0	8	15	15	0	0	8	0	46
Zn 40	0	0	0	0	0	1	1	2	0	0	3	0	7
Zn 41	0	0	0	1	0	3	7	0	0	0	2	2	15
Added	52	73	41	74	86	45	67	205	67	47	274	33	1064
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	52	73	41	74	86	45	67	205	67	47	274	33	1064
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	52	73	41	74	86	45	67	205	67	47	274	33	1064

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Volume Type	Northbound Left	Northbound Thru	Northbound Right	Southbound Left	Southbound Thru	Southbound Right	Eastbound Left	Eastbound Thru	Eastbound Right	Westbound Left	Westbound Thru	Westbound Right	Total Volume
#95 West Spine Road/ Route 50													
[Base(LOS= ,Del=0.0,V/C=0.000)][Future(LOS=F,Del=98.5,V/C=1.046)][+1.046 V/C]													
Base	0	0	0	0	0	0	0	0	0	0	0	0	0
Growth	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
InitBs	0	0	0	0	0	0	0	0	0	0	0	0	0
Zn 1	1	0	16	0	0	0	0	8	2	32	16	0	75
Zn 2	5	0	75	0	0	0	0	32	5	73	31	0	221
Zn 4	1	0	7	0	0	0	0	0	3	14	0	0	25
Zn 5	0	0	4	0	0	0	0	10	0	2	5	0	21
Zn 9	0	0	7	0	0	0	0	1	0	14	1	0	23
Zn 12	1	0	4	0	0	0	0	0	1	8	0	0	14
Zn 13	0	0	7	0	0	0	0	0	0	13	0	0	20
Zn 15	1	0	34	0	0	0	0	0	2	62	0	0	99
Zn 17	7	0	0	0	0	0	0	4	1	0	8	0	20
Zn 18	9	0	0	0	0	0	0	28	16	0	20	0	73
Zn 20	66	0	141	0	0	0	0	0	66	142	0	0	415
Zn 21	13	0	51	0	0	0	0	0	3	10	0	0	77
Zn 22	0	0	33	0	0	0	0	43	0	58	76	0	210
Zn 23	0	0	1	0	0	0	0	7	0	1	13	0	22
Zn 27	0	0	0	0	0	0	0	1	0	0	0	0	1
Zn 28	0	0	0	0	0	0	0	5	0	0	3	0	8
Zn 29	0	0	0	0	0	0	0	2	0	0	8	0	10
Zn 30	0	0	0	0	0	0	0	14	0	0	7	0	21
Zn 31	0	0	0	0	0	0	0	5	0	0	6	0	11
Zn 35	0	0	5	0	0	0	0	42	0	5	46	0	98
Zn 36	0	0	0	0	0	0	0	0	0	0	2	0	2
Zn 37	0	0	1	0	0	0	0	1	0	1	1	0	4
Zn 38	0	0	2	0	0	0	0	15	0	1	8	0	26
Zn 40	0	0	0	0	0	0	0	2	0	0	3	0	5
Zn 41	2	0	0	0	0	0	0	1	0	0	2	0	5
Added	105	0	389	0	0	0	0	220	99	436	256	0	1505
PassBy	0	0	0	0	0	0	0	0	0	0	0	0	0
Future	105	0	389	0	0	0	0	220	99	436	256	0	1505
UseAdj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Total	105	0	389	0	0	0	0	220	99	436	256	0	1505

Appendix Q

2012 Capacity Analyses Approved Program – Weekday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	962	62	170	429	49	63	40	154	11	15	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	1069	69	189	477	54	70	44	171	12	17	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	531			1138			1734	2013	534	1618	2028	238
vC1, stage 1 conf vol							1104	1104		854	854	
vC2, stage 2 conf vol							630	909		763	1173	
vCu, unblocked vol	531			1138			1734	2013	534	1618	2028	238
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			69			44	66	65	52	73	99
cM capacity (veh/h)	1032			610			125	132	490	25	61	763

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	18	534	534	69	189	238	238	54	286	34
Volume Left	18	0	0	0	189	0	0	0	70	12
Volume Right	0	0	0	69	0	0	0	54	171	6
cSH	1032	1700	1700	1700	610	1700	1700	1700	229	45
Volume to Capacity	0.02	0.31	0.31	0.04	0.31	0.14	0.14	0.03	1.25	0.77
Queue Length 95th (ft)	1	0	0	0	33	0	0	0	362	75
Control Delay (s)	8.5	0.0	0.0	0.0	13.5	0.0	0.0	0.0	186.2	206.6
Lane LOS	A				B				F	F
Approach Delay (s)	0.1				3.5				186.2	206.6
Approach LOS									F	F

Intersection Summary			
Average Delay	28.7		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	7	7	0	6	11	22	41	7	67	14	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.92	0.92	0.79	0.79	0.92	0.92	0.92	0.79	0.92	0.79
Hourly flow rate (vph)	63	9	8	0	8	14	24	45	8	85	15	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	316	302	32	310	315	48	49			52		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316	302	32	310	315	48	49			52		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	98	99	100	99	99	98			95		
cM capacity (veh/h)	589	569	1041	597	559	1020	1557			1554		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	22	76	134
Volume Left	63	0	24	85
Volume Right	8	14	8	34
cSH	612	790	1557	1554
Volume to Capacity	0.13	0.03	0.02	0.05
Queue Length 95th (ft)	11	2	1	4
Control Delay (s)	11.8	9.7	2.4	4.9
Lane LOS	B	A	A	A
Approach Delay (s)	11.8	9.7	2.4	4.9
Approach LOS	B	A		

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	0	0	0	0	17	0	18	0	6	6	9
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)	30	0	0	0	0	18	0	20	0	7	7	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	62	44	11	44	49	20	16			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62	44	11	44	49	20	16			20		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	98	100			100		
cM capacity (veh/h)	913	844	1069	955	839	1058	1601			1597		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	18	20	23
Volume Left	30	0	0	7
Volume Right	0	18	0	10
cSH	913	1058	1601	1597
Volume to Capacity	0.03	0.02	0.00	0.00
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	9.1	8.5	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s)	9.1	8.5	0.0	2.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	0	0	0	0	0	0	0	0	0	6
Sign Control		Free			Free			Stop			Stop	
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)	20	0	0	0	0	0	0	0	0	0	0	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			46	39	0	39	39	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			46	39	0	39	39	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	99
cM capacity (veh/h)	1623			1623			941	843	1085	956	843	1085

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	0	0	7
Volume Left	20	0	0	0
Volume Right	0	0	0	7
cSH	1623	1700	1700	1085
Volume to Capacity	0.01	0.00	0.00	0.01
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	7.2	0.0	0.0	8.3
Lane LOS	A		A	A
Approach Delay (s)	7.2	0.0	0.0	8.3
Approach LOS			A	A

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	542	47	141	1359	21	47	19	105	19	37	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	602	52	157	1510	23	52	21	117	21	41	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1533			654			1714	2464	301	2267	2493	755
vC1, stage 1 conf vol							618	618		1823	1823	
vC2, stage 2 conf vol							1097	1847		444	670	
vCu, unblocked vol	1533			654			1714	2464	301	2267	2493	755
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			83			38	73	83	60	48	98
cM capacity (veh/h)	430			929			85	78	695	52	79	351

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	8	301	301	52	157	755	755	23	190	70
Volume Left	8	0	0	0	157	0	0	0	52	21
Volume Right	0	0	0	52	0	0	0	23	117	8
cSH	430	1700	1700	1700	929	1700	1700	1700	180	74
Volume to Capacity	0.02	0.18	0.18	0.03	0.17	0.44	0.44	0.01	1.05	0.95
Queue Length 95th (ft)	1	0	0	0	15	0	0	0	227	122
Control Delay (s)	13.5	0.0	0.0	0.0	9.7	0.0	0.0	0.0	135.3	186.9
Lane LOS	B				A				F	F
Approach Delay (s)	0.2				0.9				135.3	186.9
Approach LOS									F	F

Intersection Summary			
Average Delay	15.5		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	12	23	0	3	5	13	25	0	44	44	72
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.92	0.92	0.79	0.79	0.92	0.92	0.92	0.79	0.92	0.79
Hourly flow rate (vph)	20	15	25	0	4	6	14	27	0	56	48	91
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	268	260	93	293	306	27	139			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268	260	93	293	306	27	139			27		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	98	97	100	99	99	99			96		
cM capacity (veh/h)	654	616	964	609	581	1048	1445			1587		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	60	10	41	195
Volume Left	20	0	14	56
Volume Right	25	6	0	91
cSH	741	805	1445	1587
Volume to Capacity	0.08	0.01	0.01	0.04
Queue Length 95th (ft)	7	1	1	3
Control Delay (s)	10.3	9.5	2.6	2.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.3	9.5	2.6	2.3
Approach LOS	B	A		

Intersection Summary				
Average Delay		4.2		
Intersection Capacity Utilization		27.5%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	0	0	0	0	9	0	12	0	15	21	31
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)	18	0	0	0	0	10	0	13	0	16	23	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	95	85	40	85	102	13	57			13		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95	85	40	85	102	13	57			13		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	99	100			99		
cM capacity (veh/h)	873	797	1032	894	780	1067	1548			1605		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	10	13	73
Volume Left	18	0	0	16
Volume Right	0	10	0	34
cSH	873	1067	1548	1605
Volume to Capacity	0.02	0.01	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	9.2	8.4	0.0	1.7
Lane LOS	A	A		A
Approach Delay (s)	9.2	8.4	0.0	1.7
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	0	0	0	0	0	0	0	0	0	0	21
Sign Control		Free			Free			Stop			Stop	
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)	13	0	0	0	0	0	0	0	0	0	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			49	26	0	26	26	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			49	26	0	26	26	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	98
cM capacity (veh/h)	1623			1623			926	860	1085	978	860	1085

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	0	0	23
Volume Left	13	0	0	0
Volume Right	0	0	0	23
cSH	1623	1700	1700	1085
Volume to Capacity	0.01	0.00	0.00	0.02
Queue Length 95th (ft)	1	0	0	2
Control Delay (s)	7.2	0.0	0.0	8.4
Lane LOS	A		A	A
Approach Delay (s)	7.2	0.0	0.0	8.4
Approach LOS			A	A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix R

2015 Capacity Analyses Approved Program – Weekday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1101	93	173	544	72	140	111	209	32	50	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.98	
Satd. Flow (prot)	1770	3139	1583	1770	3139	1583		1812	1583		1820	
Flt Permitted	0.42	1.00	1.00	0.11	1.00	1.00		0.77	1.00		0.75	
Satd. Flow (perm)	789	3139	1583	212	3139	1583		1440	1583		1389	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	1223	103	192	604	80	156	123	232	36	56	3
RTOR Reduction (vph)	0	0	34	0	0	33	0	0	17	0	1	0
Lane Group Flow (vph)	16	1223	69	192	604	47	0	279	215	0	94	0
Heavy Vehicles (%)	2%	15%	2%	2%	15%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	51.9	50.6	50.6	66.3	61.0	61.0		27.3	39.0		27.3	
Effective Green, g (s)	51.9	50.6	50.6	66.3	61.0	61.0		27.3	39.0		27.3	
Actuated g/C Ratio	0.50	0.49	0.49	0.64	0.59	0.59		0.26	0.38		0.26	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	408	1533	773	312	1848	932		379	657		366	
v/s Ratio Prot	0.00	c0.39		c0.07	0.19				c0.04			
v/s Ratio Perm	0.02		0.04	0.32		0.03		c0.19	0.10		0.07	
v/c Ratio	0.04	0.80	0.09	0.62	0.33	0.05		0.74	0.33		0.26	
Uniform Delay, d1	13.0	22.2	14.2	14.2	10.8	9.0		34.9	23.0		30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	3.0	0.0	3.6	0.1	0.0		7.3	0.3		0.4	
Delay (s)	13.1	25.2	14.2	17.7	10.9	9.0		42.1	23.3		30.5	
Level of Service	B	C	B	B	B	A		D	C		C	
Approach Delay (s)		24.2			12.3			33.6			30.5	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	103.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	8	259	199	7	251	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	282	216	8	273	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						422
pX, platoon unblocked						
vC, conflicting volume	838	112			224	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	838	112			224	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	69			80	
cM capacity (veh/h)	243	920			1342	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	290	144	80	273	72
Volume Left	9	0	0	273	0
Volume Right	282	0	8	0	0
cSH	849	1700	1700	1342	1700
Volume to Capacity	0.34	0.08	0.05	0.20	0.04
Queue Length 95th (ft)	38	0	0	19	0
Control Delay (s)	11.4	0.0	0.0	8.4	0.0
Lane LOS	B			A	
Approach Delay (s)	11.4	0.0		6.6	
Approach LOS	B				

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	77	22	8	0	11	6	24	39	0	82	13	57
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	97	28	10	0	14	8	30	49	0	104	16	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	385	370	53	394	406	49	89			49		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	385	370	53	394	406	49	89			49		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	95	99	100	97	99	98			93		
cM capacity (veh/h)	521	512	1015	502	488	1019	1507			1557		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	135	22	80	192
Volume Left	97	0	30	104
Volume Right	10	8	0	72
cSH	538	598	1507	1557
Volume to Capacity	0.25	0.04	0.02	0.07
Queue Length 95th (ft)	25	3	2	5
Control Delay (s)	13.9	11.2	2.9	4.3
Lane LOS	B	B	A	A
Approach Delay (s)	13.9	11.2	2.9	4.3
Approach LOS	B	B		

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	0	0	0	0	17	0	18	0	6	6	9
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)	30	0	0	0	0	18	0	20	0	7	7	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	62	44	11	44	49	20	16			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	62	44	11	44	49	20	16			20		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	98	100			100		
cM capacity (veh/h)	913	844	1069	955	839	1058	1601			1597		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	18	20	23
Volume Left	30	0	0	7
Volume Right	0	18	0	10
cSH	913	1058	1601	1597
Volume to Capacity	0.03	0.02	0.00	0.00
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	9.1	8.5	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s)	9.1	8.5	0.0	2.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	0	0	0	0	0	0	0	0	0	6
Sign Control		Free			Free			Stop			Stop	
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)	20	0	0	0	0	0	0	0	0	0	0	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			46	39	0	39	39	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			46	39	0	39	39	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	99
cM capacity (veh/h)	1623			1623			941	843	1085	956	843	1085

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	0	0	7
Volume Left	20	0	0	0
Volume Right	0	0	0	7
cSH	1623	1700	1700	1085
Volume to Capacity	0.01	0.00	0.00	0.01
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	7.2	0.0	0.0	8.3
Lane LOS	A		A	A
Approach Delay (s)	7.2	0.0	0.0	8.3
Approach LOS			A	A

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	644	124	216	1520	34	92	69	138	34	113	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)	1770	3139	1583	1770	3139	1583		1811	1583		1832	
Flt Permitted	0.08	1.00	1.00	0.30	1.00	1.00		0.67	1.00		0.90	
Satd. Flow (perm)	144	3139	1583	559	3139	1583		1244	1583		1674	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	7	724	139	243	1708	38	103	78	155	38	127	7
RTOR Reduction (vph)	0	0	68	0	0	15	0	0	100	0	1	0
Lane Group Flow (vph)	7	724	71	243	1708	23	0	181	55	0	171	0
Heavy Vehicles (%)	2%	15%	2%	2%	15%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	52.2	51.6	51.6	66.3	61.7	61.7		24.9	35.6		24.9	
Effective Green, g (s)	52.2	51.6	51.6	66.3	61.7	61.7		24.9	35.6		24.9	
Actuated g/C Ratio	0.52	0.51	0.51	0.66	0.61	0.61		0.25	0.35		0.25	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	84	1601	807	494	1914	965		306	619		412	
v/s Ratio Prot	0.00	0.23		c0.05	c0.54				0.01			
v/s Ratio Perm	0.04		0.04	0.27		0.01		c0.15	0.03		0.10	
v/c Ratio	0.08	0.45	0.09	0.49	0.89	0.02		0.59	0.09		0.42	
Uniform Delay, d1	14.7	15.8	12.7	7.9	16.9	7.8		33.7	21.9		32.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.2	0.0	0.8	5.7	0.0		3.0	0.1		0.7	
Delay (s)	15.1	16.0	12.8	8.7	22.7	7.8		36.7	22.0		32.7	
Level of Service	B	B	B	A	C	A		D	C		C	
Approach Delay (s)		15.5			20.7			29.9			32.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	6	184	117	4	247	207
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	200	127	4	268	225
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						442
pX, platoon unblocked						
vC, conflicting volume	891	66			132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	891	66			132	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	80			82	
cM capacity (veh/h)	230	984			1451	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	207	85	47	268	225
Volume Left	7	0	0	268	0
Volume Right	200	0	4	0	0
cSH	892	1700	1700	1451	1700
Volume to Capacity	0.23	0.05	0.03	0.18	0.13
Queue Length 95th (ft)	22	0	0	17	0
Control Delay (s)	10.2	0.0	0.0	8.0	0.0
Lane LOS	B			A	
Approach Delay (s)	10.2	0.0		4.4	
Approach LOS	B				

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	15	26	0	5	3	15	23	0	54	41	115
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	61	17	29	0	6	3	17	26	0	61	46	129
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	298	292	111	329	356	26	175			26		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	298	292	111	329	356	26	175			26		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	97	97	100	99	100	99			96		
cM capacity (veh/h)	623	588	943	569	541	1050	1401			1588		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	107	9	43	236
Volume Left	61	0	17	61
Volume Right	29	3	0	129
cSH	680	661	1401	1588
Volume to Capacity	0.16	0.01	0.01	0.04
Queue Length 95th (ft)	14	1	1	3
Control Delay (s)	11.3	10.5	3.1	2.1
Lane LOS	B	B	A	A
Approach Delay (s)	11.3	10.5	3.1	2.1
Approach LOS	B	B		

Intersection Summary				
Average Delay		4.9		
Intersection Capacity Utilization		32.7%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	0	0	0	0	9	0	12	0	15	21	31
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)	18	0	0	0	0	10	0	13	0	16	23	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	95	85	40	85	102	13	57			13		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95	85	40	85	102	13	57			13		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	99	100			99		
cM capacity (veh/h)	873	797	1032	894	780	1067	1548			1605		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	10	13	73
Volume Left	18	0	0	16
Volume Right	0	10	0	34
cSH	873	1067	1548	1605
Volume to Capacity	0.02	0.01	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	9.2	8.4	0.0	1.7
Lane LOS	A	A		A
Approach Delay (s)	9.2	8.4	0.0	1.7
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	24.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	0	0	0	0	0	0	0	0	0	0	21
Sign Control		Free			Free			Stop			Stop	
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)	13	0	0	0	0	0	0	0	0	0	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			49	26	0	26	26	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			49	26	0	26	26	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	98
cM capacity (veh/h)	1623			1623			926	860	1085	978	860	1085

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	0	0	23
Volume Left	13	0	0	0
Volume Right	0	0	0	23
cSH	1623	1700	1700	1085
Volume to Capacity	0.01	0.00	0.00	0.02
Queue Length 95th (ft)	1	0	0	2
Control Delay (s)	7.2	0.0	0.0	8.4
Lane LOS	A		A	A
Approach Delay (s)	7.2	0.0	0.0	8.4
Approach LOS			A	A

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix S

2012 Signal Warrant Analyses for U.S. Route 50/Goshen Road Approved Program – Weekday Conditions

Table S-1
Goshen Road/Route 50
CDA Loudoun Property
2012 Warrants 1A, 1B, 1C

Approved Development - 2012	Route 50			Goshen Road			
	Projected ADT	Min. Required EADT	Satisfied	Projected ADT	Min. Required EADT	Satisfied	Warrant Satisfied
Goshen Road/Route 50							
Warrant 1A - Minimum Vehicular Volume	21,170	9,600	Yes	1,710	3,200	No	No
Warrant 1B - Interruption of Continuos Traffic	21,170	14,400	Yes	1,710	1,600	Yes	Yes
Warrant 1C - Combination 80%	21,170	7,680	Yes	1,710	2,560	No	No
	21,170	11,520	Yes	1,710	1,280	Yes	

Source: Institute of Traffic Engineers, Manual of Traffic Signal Design, 2nd Edition.

Appendix T

Trip Generation Information – Weekday Conditions

Table T-1
Catholic Diocese of Arlington - Loudoun Property
Trip Generation Rate Comparison

Land Use	ITE Land Use Code	Size	Units		PM School Peak In	PM School Peak Out	PM School Peak Total	PM Commuter Peak In	PM Commuter Peak Out	PM Commuter Peak Total	Percent Difference (2)
Middle School	522	284	Students	Trips/Student	0.14	0.17	0.3	0.08	0.07	0.15	50%
				Trips	38	47	85	22	20	43	
High School	530	284	Students	Trips/Student	0.09	0.19	0.28	0.07	0.07	0.14	50%
				Trips	25	54	80	19	21	40	
The Langley School (1)	N/A	451	Students	Trips/Student	0.34	0.35	0.69	0.16	0.27	0.43	63%
				Trips	153	157	310	72	122	194	
Wakefield School (1)	N/A	491	Students	Trips/Student	0.23	0.32	0.55	0.09	0.18	0.26	48%
				Trips	111	159	270	42	87	129	
										Average	**53%**

Note:
(1) Based on counts conducted by Wells + Associates.
(2) Compares PM Commuter Peak *Total* to PM School Peak *Total.*

Appendix U

2012 Capacity Analyses Proposed Program – Weekday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	962	62	173	429	49	61	37	154	11	14	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	1069	69	192	477	54	68	41	171	12	16	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	531			1138			1741	2020	534	1623	2034	238
vC1, stage 1 conf vol							1104	1104		861	861	
vC2, stage 2 conf vol							636	916		762	1173	
vCu, unblocked vol	531			1138			1741	2020	534	1623	2034	238
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			68			45	68	65	52	73	99
cM capacity (veh/h)	1032			610			124	130	490	25	58	763

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	18	534	534	69	192	238	238	54	280	33
Volume Left	18	0	0	0	192	0	0	0	68	12
Volume Right	0	0	0	69	0	0	0	54	171	6
cSH	1032	1700	1700	1700	610	1700	1700	1700	231	44
Volume to Capacity	0.02	0.31	0.31	0.04	0.32	0.14	0.14	0.03	1.21	0.75
Queue Length 95th (ft)	1	0	0	0	34	0	0	0	344	73
Control Delay (s)	8.5	0.0	0.0	0.0	13.6	0.0	0.0	0.0	172.3	206.6
Lane LOS	A				B				F	F
Approach Delay (s)	0.1				3.6				172.3	206.6
Approach LOS									F	F

Intersection Summary			
Average Delay	26.4		
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	7	6	0	6	11	17	35	7	67	15	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.92	0.92	0.79	0.79	0.92	0.92	0.92	0.79	0.92	0.79
Hourly flow rate (vph)	8	9	7	0	8	14	18	38	8	85	16	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	300	286	33	293	299	42	50			46		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300	286	33	293	299	42	50			46		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	98	99	100	99	99	99			95		
cM capacity (veh/h)	606	583	1040	615	573	1029	1556			1562		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	23	22	64	135
Volume Left	8	0	18	85
Volume Right	7	14	8	34
cSH	676	803	1556	1562
Volume to Capacity	0.03	0.03	0.01	0.05
Queue Length 95th (ft)	3	2	1	4
Control Delay (s)	10.5	9.6	2.2	4.8
Lane LOS	B	A	A	A
Approach Delay (s)	10.5	9.6	2.2	4.8
Approach LOS	B	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	0	0	0	0	6	0	18	0	6	6	9
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)	30	0	0	0	0	7	0	20	0	7	7	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	51	44	11	44	49	20	16			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51	44	11	44	49	20	16			20		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	99	100			100		
cM capacity (veh/h)	940	844	1069	955	839	1058	1601			1597		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	7	20	23
Volume Left	30	0	0	7
Volume Right	0	7	0	10
cSH	940	1058	1601	1597
Volume to Capacity	0.03	0.01	0.00	0.00
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	9.0	8.4	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s)	9.0	8.4	0.0	2.1
Approach LOS	A	A		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	18	0	0	0	0	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	0	0	0	0	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3	3	7			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3	3	7			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	1019	1081	1614			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	20	0	7
Volume Left	20	0	0
Volume Right	0	0	7
cSH	1019	1700	1700
Volume to Capacity	0.02	0.00	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	542	45	142	1359	21	46	17	107	19	34	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	602	50	158	1510	23	51	19	119	21	38	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage veh)		1			1							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1533			652			1715	2467	301	2271	2493	755
vC1, stage 1 conf vol							618	618		1826	1826	
vC2, stage 2 conf vol							1097	1849		445	668	
vCu, unblocked vol	1533			652			1715	2467	301	2271	2493	755
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			83			42	76	83	60	52	98
cM capacity (veh/h)	430			930			89	77	695	52	78	351

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	8	301	301	50	158	755	755	23	189	67
Volume Left	8	0	0	0	158	0	0	0	51	21
Volume Right	0	0	0	50	0	0	0	23	119	8
cSH	430	1700	1700	1700	930	1700	1700	1700	191	73
Volume to Capacity	0.02	0.18	0.18	0.03	0.17	0.44	0.44	0.01	0.99	0.91
Queue Length 95th (ft)	1	0	0	0	15	0	0	0	208	115
Control Delay (s)	13.5	0.0	0.0	0.0	9.7	0.0	0.0	0.0	113.5	176.6
Lane LOS	B				A				F	F
Approach Delay (s)	0.2				0.9				113.5	176.6
Approach LOS									F	F

Intersection Summary			
Average Delay	13.4		
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	12	24	0	3	5	14	29	0	44	49	72
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.92	0.92	0.79	0.79	0.92	0.92	0.92	0.79	0.92	0.79
Hourly flow rate (vph)	20	15	26	0	4	6	15	32	0	56	53	91
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	280	272	99	306	318	32	144			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	280	272	99	306	318	32	144			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	97	97	100	99	99	99			96		
cM capacity (veh/h)	641	606	957	596	571	1042	1438			1581		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	10	47	200
Volume Left	20	0	15	56
Volume Right	26	6	0	91
cSH	733	796	1438	1581
Volume to Capacity	0.08	0.01	0.01	0.04
Queue Length 95th (ft)	7	1	1	3
Control Delay (s)	10.4	9.6	2.5	2.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.4	9.6	2.5	2.3
Approach LOS	B	A		

Intersection Summary				
Average Delay		4.1		
Intersection Capacity Utilization		28.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	0	0	0	0	5	0	12	0	6	21	31
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)	18	0	0	0	0	5	0	13	0	7	23	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	71	66	40	66	83	13	57			13		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	71	66	40	66	83	13	57			13		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	99	100			100		
cM capacity (veh/h)	913	822	1032	925	804	1067	1548			1605		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	5	13	63
Volume Left	18	0	0	7
Volume Right	0	5	0	34
cSH	913	1067	1548	1605
Volume to Capacity	0.02	0.01	0.00	0.00
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.0	8.4	0.0	0.8
Lane LOS	A	A		A
Approach Delay (s)	9.0	8.4	0.0	0.8
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	0	0	0	0	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	0	0	0	0	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11	11	23			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11	11	23			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	1008	1069	1592			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	13	0	23
Volume Left	13	0	0
Volume Right	0	0	23
cSH	1008	1700	1700
Volume to Capacity	0.01	0.00	0.01
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix V

2015 Capacity Analyses Proposed Conditions – Weekday Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1101	124	229	544	72	166	115	255	32	55	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.98	
Satd. Flow (prot)	1770	3139	1583	1770	3139	1583		1809	1583		1822	
Flt Permitted	0.42	1.00	1.00	0.10	1.00	1.00		0.75	1.00		0.70	
Satd. Flow (perm)	789	3139	1583	193	3139	1583		1400	1583		1292	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	1223	138	254	604	80	184	128	283	36	61	3
RTOR Reduction (vph)	0	0	48	0	0	33	0	0	17	0	1	0
Lane Group Flow (vph)	16	1223	90	254	604	47	0	312	266	0	99	0
Heavy Vehicles (%)	2%	15%	2%	2%	15%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	55.2	53.9	53.9	73.1	67.8	67.8		31.4	46.6		31.4	
Effective Green, g (s)	55.2	53.9	53.9	73.1	67.8	67.8		31.4	46.6		31.4	
Actuated g/C Ratio	0.48	0.47	0.47	0.64	0.59	0.59		0.27	0.41		0.27	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	392	1478	745	333	1859	937		384	700		354	
v/s Ratio Prot	0.00	c0.39		c0.10	0.19				0.05			
v/s Ratio Perm	0.02		0.06	0.39		0.03		c0.22	0.12		0.08	
v/c Ratio	0.04	0.83	0.12	0.76	0.32	0.05		0.81	0.38		0.28	
Uniform Delay, d1	15.5	26.3	17.0	24.4	11.8	9.8		38.8	23.8		32.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.0	4.0	0.1	9.9	0.1	0.0		12.3	0.3		0.4	
Delay (s)	15.5	30.2	17.1	34.3	11.9	9.8		51.1	24.2		33.1	
Level of Service	B	C	B	C	B	A		D	C		C	
Approach Delay (s)		28.7			17.8			38.3			33.1	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	27.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	334	199	12	344	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	363	216	13	374	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						440
pX, platoon unblocked						
vC, conflicting volume	1042	115			229	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1042	115			229	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	60			72	
cM capacity (veh/h)	162	916			1336	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	376	144	85	374	72
Volume Left	13	0	0	374	0
Volume Right	363	0	13	0	0
cSH	789	1700	1700	1336	1700
Volume to Capacity	0.48	0.08	0.05	0.28	0.04
Queue Length 95th (ft)	65	0	0	29	0
Control Delay (s)	13.7	0.0	0.0	8.7	0.0
Lane LOS	B			A	
Approach Delay (s)	13.7	0.0		7.3	
Approach LOS	B				

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	77	22	30	0	11	6	43	118	0	82	111	57
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	97	28	38	0	14	8	54	149	0	104	141	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	657	642	177	694	678	149	213			149		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	657	642	177	694	678	149	213			149		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	92	96	100	96	99	96			93		
cM capacity (veh/h)	333	349	867	294	333	897	1358			1432		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	163	22	204	316
Volume Left	97	0	54	104
Volume Right	38	8	0	72
cSH	392	428	1358	1432
Volume to Capacity	0.42	0.05	0.04	0.07
Queue Length 95th (ft)	50	4	3	6
Control Delay (s)	20.6	13.9	2.3	3.0
Lane LOS	C	B	A	A
Approach Delay (s)	20.6	13.9	2.3	3.0
Approach LOS	C	B		

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	0	0	0	0	68	0	35	0	83	26	9
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)	30	0	0	0	0	74	0	38	0	90	28	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	326	252	33	252	257	38	38			38		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	326	252	33	252	257	38	38			38		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	93	100			94		
cM capacity (veh/h)	557	614	1040	671	610	1034	1572			1572		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	74	38	128
Volume Left	30	0	0	90
Volume Right	0	74	0	10
cSH	557	1034	1572	1572
Volume to Capacity	0.05	0.07	0.00	0.06
Queue Length 95th (ft)	4	6	0	5
Control Delay (s)	11.8	8.7	0.0	5.4
Lane LOS	B	A		A
Approach Delay (s)	11.8	8.7	0.0	5.4
Approach LOS	B	A		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	0	0	0	0	17	0	0	0	20	0	6
Sign Control		Free			Free			Stop			Stop	
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)	20	0	0	0	0	18	0	0	0	22	0	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	18			0			55	58	0	48	48	9
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	18			0			55	58	0	48	48	9
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	98	100	99
cM capacity (veh/h)	1598			1623			928	823	1085	943	833	1072

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	18	0	28
Volume Left	20	0	0	22
Volume Right	0	18	0	7
cSH	1598	1623	1700	970
Volume to Capacity	0.01	0.00	0.00	0.03
Queue Length 95th (ft)	1	0	0	2
Control Delay (s)	7.3	0.0	0.0	8.8
Lane LOS	A		A	A
Approach Delay (s)	7.3	0.0	0.0	8.8
Approach LOS			A	A

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	644	144	255	1520	34	115	72	180	34	116	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.99	
Satd. Flow (prot)	1770	3139	1583	1770	3139	1583		1807	1583		1833	
Flt Permitted	0.08	1.00	1.00	0.30	1.00	1.00		0.63	1.00		0.90	
Satd. Flow (perm)	148	3139	1583	552	3139	1583		1168	1583		1665	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	7	724	162	287	1708	38	129	81	202	38	130	7
RTOR Reduction (vph)	0	0	81	0	0	15	0	0	129	0	1	0
Lane Group Flow (vph)	7	724	81	287	1708	23	0	210	73	0	174	0
Heavy Vehicles (%)	2%	15%	2%	2%	15%	2%	2%	2%	2%	2%	2%	2%
Turn Type	pm+pt		Perm	pm+pt		Perm	Perm		pm+ov	Perm		
Protected Phases	7	4		3	8			2	3		6	
Permitted Phases	4		4	8		8	2		2	6		
Actuated Green, G (s)	51.1	50.5	50.5	66.3	61.7	61.7		24.9	36.7		24.9	
Effective Green, g (s)	51.1	50.5	50.5	66.3	61.7	61.7		24.9	36.7		24.9	
Actuated g/C Ratio	0.50	0.50	0.50	0.66	0.61	0.61		0.25	0.36		0.25	
Clearance Time (s)	4.0	6.0	6.0	4.0	6.0	6.0		4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	84	1566	790	504	1914	965		287	637		410	
v/s Ratio Prot	0.00	0.23		c0.07	c0.54				0.01			
v/s Ratio Perm	0.04		0.05	0.31		0.01		c0.18	0.03		0.10	
v/c Ratio	0.08	0.46	0.10	0.57	0.89	0.02		0.73	0.11		0.42	
Uniform Delay, d1	15.0	16.5	13.4	8.3	16.9	7.8		35.1	21.4		32.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.4	0.2	0.1	1.5	5.7	0.0		9.2	0.1		0.7	
Delay (s)	15.4	16.7	13.4	9.8	22.7	7.8		44.3	21.5		32.8	
Level of Service	B	B	B	A	C	A		D	C		C	
Approach Delay (s)		16.1			20.6			33.1			32.8	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	21.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	9	251	117	7	310	207
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	273	127	8	337	225
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						455
pX, platoon unblocked						
vC, conflicting volume	1030	67			135	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1030	67			135	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	72			77	
cM capacity (veh/h)	176	982			1447	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	283	85	50	337	225
Volume Left	10	0	0	337	0
Volume Right	273	0	8	0	0
cSH	848	1700	1700	1447	1700
Volume to Capacity	0.33	0.05	0.03	0.23	0.13
Queue Length 95th (ft)	37	0	0	23	0
Control Delay (s)	11.4	0.0	0.0	8.2	0.0
Lane LOS	B			A	
Approach Delay (s)	11.4	0.0		4.9	
Approach LOS	B				

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	15	41	0	5	3	32	93	0	54	107	115
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	61	17	46	0	6	3	36	104	0	61	120	129
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	489	483	185	537	547	104	249			104		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	489	483	185	537	547	104	249			104		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	96	95	100	99	100	97			96		
cM capacity (veh/h)	458	451	857	397	415	950	1316			1487		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	124	9	140	310
Volume Left	61	0	36	61
Volume Right	46	3	0	129
cSH	553	526	1316	1487
Volume to Capacity	0.22	0.02	0.03	0.04
Queue Length 95th (ft)	21	1	2	3
Control Delay (s)	13.4	12.0	2.2	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	13.4	12.0	2.2	1.8
Approach LOS	B	B		

Intersection Summary				
Average Delay		4.5		
Intersection Capacity Utilization		38.9%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	0	0	0	0	59	0	27	0	54	34	31
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)	18	0	0	0	0	64	0	29	0	59	37	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	265	201	54	201	217	29	71			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	265	201	54	201	217	29	71			29		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	94	100			96		
cM capacity (veh/h)	628	670	1013	736	655	1045	1530			1584		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	64	29	129
Volume Left	18	0	0	59
Volume Right	0	64	0	34
cSH	628	1045	1530	1584
Volume to Capacity	0.03	0.06	0.00	0.04
Queue Length 95th (ft)	2	5	0	3
Control Delay (s)	10.9	8.7	0.0	3.5
Lane LOS	B	A		A
Approach Delay (s)	10.9	8.7	0.0	3.5
Approach LOS	B	A		

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	0	0	0	0	15	0	0	0	13	0	21
Sign Control		Free			Free			Stop			Stop	
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)	13	0	0	0	0	16	0	0	0	14	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	16			0			57	42	0	34	34	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	16			0			57	42	0	34	34	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	99	100	98
cM capacity (veh/h)	1601			1623			914	843	1085	966	851	1074

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	16	0	37
Volume Left	13	0	0	14
Volume Right	0	16	0	23
cSH	1601	1623	1700	1030
Volume to Capacity	0.01	0.00	0.00	0.04
Queue Length 95th (ft)	1	0	0	3
Control Delay (s)	7.3	0.0	0.0	8.6
Lane LOS	A		A	A
Approach Delay (s)	7.3	0.0	0.0	8.6
Approach LOS			A	A

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix W

2012 Signal Warrant Analyses for U.S. Route 50/Goshen Road Proposed Program – Weekday Conditions

Table W-1
Goshen Road/Route 50
CDA Loudoun Property
2012 Warrants 1A, 1B, 1C

Proposed Development - 2012	Route 50			Goshen Road			
	Projected ADT	Min. Required EADT	Satisfied	Projected ADT	Min. Required EADT	Satisfied	Warrant Satisfied
Goshen Road/Route 50							
Warrant 1A - Minimum Vehicular Volume	21,160	9,600	Yes	1,700	3,200	No	No
Warrant 1B - Interruption of Continuos Traffic	21,160	14,400	Yes	1,700	1,600	Yes	Yes
Warrant 1C - Combination 80%	21,160	7,680	Yes	1,700	2,560	No	No
	21,160	11,520	Yes	1,700	1,280	Yes	

Source: Institute of Traffic Engineers, Manual of Traffic Signal Design, 2nd Edition.

Appendix X

Left Turn Lane Warrant Analyses – Weekday Conditions

Table X-1
CDA Property
Loudoun County, Virginia
2012 Left Turn Lane Warrant Analysis

2012 AM Peak Hour

Left Turn Lane Warrant

Marrwood Place
CDA North Site Driveway

2012 AM Peak Hour
Site Buildout

1. Enter operating speed of 40, 50, or 60 mph > 40 mph

2. Enter advancing volumes

		Lefts	>	6 vph
		Throughs	>	6 vph
Percent left turns=	29%	Rights	>	9 vph
		Total	>	21 vph

3. Enter opposing volume > 18 vph

The maximum allowable advancing volume = > 480 vph
A left turn lane is not warranted.

Exhibit 9-75
A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2001. (AASHTO)

Opposing Volume	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
		Advancing Volume/Hour		
		40-mph Operating Speed (60 km/h)		
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
		50-mph Operating Speed (80 km/h)		
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
		60-mph Operating Speed (100 km/h)		
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

Table X-2
CDA Property
Loudoun County, Virginia
2015 Left Turn Lane Warrant Analysis

2012 PM Peak Hour

Left Turn Lane Warrant

Marrwood Place
CDA North Site Driveway

2012 PM Peak Hour
Site Buildout

1. Enter operating speed of 40, 50, or 60 mph > 40 mph

2. Enter advancing volumes

		Lefts	>	6 vph
		Throughs	>	21 vph
Percent left turns=	10%	Rights	>	31 vph
		Total	>	58 vph

3. Enter opposing volume > 12 vph

The maximum allowable advancing volume = > 480 vph
A left turn lane is not warranted.

Exhibit 9-75
A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2001. (AASHTO)

Opposing Volume	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
		Advancing Volume/Hour		
		40-mph Operating Speed (60 km/h)		
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
		50-mph Operating Speed (80 km/h)		
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
		60-mph Operating Speed (100 km/h)		
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

Table X-3
CDA Property
Loudoun County, Virginia
2012 Left Turn Lane Warrant Analysis

2015 AM Peak Hour

Left Turn Lane Warrant

Marrwood Place
CDA North Site Driveway

2015 AM Peak Hour
Site Buildout

1. Enter operating speed of 40, 50, or 60 mph > 40 mph

2. Enter advancing volumes

		Lefts	>	96 vph
		Throughs	>	30 vph
Percent left turns=	71%	Rights	>	9 vph
		Total	>	135 vph

3. Enter opposing volume > 38 vph

The maximum allowable advancing volume = > 480 vph
A left turn lane is not warranted.

Exhibit 9-75
A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2001. (AASHTO)

Opposing Volume	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
		Advancing Volume/Hour		
		40-mph Operating Speed (60 km/h)		
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
		50-mph Operating Speed (80 km/h)		
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
		60-mph Operating Speed (100 km/h)		
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

Table X-4
CDA Property
Loudoun County, Virginia
2015 Left Turn Lane Warrant Analysis

2015 PM Peak Hour

Left Turn Lane Warrant

Marrwood Place
CDA North Site Driveway

2015 PM Peak Hour
Site Buildout

1. Enter operating speed of 40, 50, or 60 mph > 40 mph

2. Enter advancing volumes

		Lefts	>	65 vph
		Throughs	>	37 vph
Percent left turns=	49%	Rights	>	31 vph
		Total	>	133 vph

3. Enter opposing volume > 30 vph

The maximum allowable advancing volume = > 480 vph
A left turn lane is not warranted.

Exhibit 9-75
A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 2001. (AASHTO)

Opposing Volume	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
		Advancing Volume/Hour		
		40-mph Operating Speed (60 km/h)		
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
		50-mph Operating Speed (80 km/h)		
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
		60-mph Operating Speed (100 km/h)		
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240