AGENDA
JAMES CITY COUNTY PLANNING COMMISSION
September 3, 2014 – 7:00 p.m.

1. ROLL CALL
2. PUBLIC COMMENT
3. CONSENT AGENDA
   A. Minutes from the August 6, 2014 Regular Meeting
   B. Development Review Committee
      i. S-0037-2014, New Town, Section 3 & 6, Block 21, Parcels A & C
      (DRC Recommendation: Denial 4-1)
4. REPORTS OF THE COMMISSION
   A. Policy Committee
   B. Regional Issues Committee/Other Commission Reports
5. PUBLIC HEARINGS
   A. Case No. SUP-0008-2014, Gilley Enterprises Equipment Storage
6. PLANNING COMMISSION CONSIDERATIONS
   A. Longhill Road Corridor Study
7. PLANNING DIRECTOR'S REPORT
8. COMMISSION DISCUSSIONS AND REQUESTS
9. ADJOURNMENT

A REGULAR MEETING OF THE PLANNING COMMISSION OF THE COUNTY OF JAMES CITY, VIRGINIA, WAS HELD ON THE SIXTH DAY OF AUGUST, TWO-THOUSAND AND FOURTEEN, AT 7:00 P.M. IN THE COUNTY GOVERNMENT CENTER BOARD ROOM, 101-F MOUNTS BAY ROAD, JAMES CITY COUNTY, VIRGINIA.

1. ROLL CALL

Planning Commissioners Present:	Staff Present:
Rich Krapf	Paul Holt, Planning Director
Tim O'Connor	Scott Whyte, Senior Landscape Planner II
Chris Basic	Luke Vinciguerra, Planner
Robin Bledsoe	Leo Rogers, County Attorney
George Drummond	
John Wright, III	

Absent:
Heath Richardson

Mr. Rich Krapf called the meeting to order at 7:00 p.m.

Mr. Rogers introduced new staff attorneys Max Hlavin and Allie Kotula.

Mr. Krapf recognized Mr. Richard Bradshaw, Commissioner of the Revenue who was also in attendance.

2. PUBLIC COMMENT

Mr. Krapf opened the public comment.

There being none, Mr. Krapf closed the public comment.

3. CONSENT AGENDA

A. Minutes from the July 2, 2014, Planning Commission meeting

B. Development Review Committee

i. SP-0045-2014, Lightfoot Marketplace
ii. SP-0050-2014, Whitehall Clubhouse Site Plan Amendment

Mr. George Drummond moved to approve the Consent Agenda, with the recommended revisions to the minutes.

In a unanimous vote, the Commission approved the Consent Agenda 6-0; Mr. Heath Richardson being absent.

4. REPORTS TO THE COMMISSION

A. Policy Committee

Mr. Tim O'Connor stated that the Policy Committee met on July 10, 2014 with Robin Bledsoe, Rich Krapf and Tim O'Connor in attendance to consider Case No. ZO-001-2014, Chicken Keeping in General Residential District, R-2 and Residential Redevelopment District, R-3.

Mr. O'Connor stated that at its June 24, 2014 meeting the Board of Supervisors approved an initiating resolution to reconsider chicken keeping in the R-2 and R-3 zoning districts. Staff provided the Policy Committee with copies of all previous materials and minutes from earlier discussions. Staff also provided information on R-2 parcels located outside the Primary Service Area (PSA), the only community being Chickahominy Haven. Of the 390 lots in Chickahominy Haven, there are approximately 187 lots zoned R-2 with 77 of those lots having RPA to the rear of the structures. Of the remaining 110 lots, approximately 80 of those lots have restrictive covenants that prohibit the keeping of chickens, leaving a net of 30 lots eligible to be considered for chicken keeping.

Mr. O'Connor noted that currently there are no areas zoned R-3.

Mr. O'Connor stated that as there was minimal benefit from considering lots zoned R-2 which are outside the PSA, the Policy Committee recommends not limiting a draft ordinance to lots outside the PSA in R-2.

Mr. O'Connor stated that at the time of the meeting no applications had been received to keep chickens in R-1 and there had only been one general inquiry.

Mr. O'Connor stated that the Policy Committee's reconsideration also included review of previously submitted materials such as York, Poquoson, Fauquier and Prince William counties ordinances for chicken keeping. Mr. O'Connor noted that the City of Williamsburg does not permit chicken keeping in their Zoning Ordinance but elects to enforce nuisances through Animal Control. The policy Committee directed staff to create draft ordinances for R-2 and R-3 as separate zoning applications without the language allowing for the dispatch of chickens. It was not the Policy Committee's intention that the dispatch of chickens be included in the ordinance for chicken keeping.

Mr. O'Connor stated that by a vote of 2-1 the Policy Committee voted to move the ordinances forward for the benefit of a public hearing.

B. Regional Issues Committee

Ms. Robin Bledsoe stated that the Regional Issues Committee met on July 22, 2014. The main focus of the meeting was a presentation by Mr. Jeffrey Lunsford, Deputy Executive Director of Administration, for the Jamestown-Yorktown Foundation. Mr. Lunsford discussed the continued popularity of Historic Jamestown and highlighted the American Revolution Museum at Historic Yorktown which replaces the Yorktown Victory Center. Mrs. Bledsoe state that the Committee

was also provided the final summary report of the Historic Triangle Coordinated Comprehensive Plan review. Ms. Bledsoe noted that the Committee was also given an update on Virginia Department of Transportation projects.

5. PUBLIC HEARING CASES

Mr. Krapf noted that the first thirteen cases for Public Hearing were Agricultural and Forestal District (AFD) renewals or additions and that the process would be to hold one Public Hearing; however, each case would be voted on separately.

Mr. Paul Holt noted that the Commission had two documents in front of them; one being an FAQ sheet on Agricultural and Forestal Districts and the second a copy of an e-mail from Mr. Carter Cowles, III in support of renewing the Mill Creek AFD.

A.- M. Agricultural and Forestal District Renewals and Additions.

Mr. Luke Vinciguerra, Planner, provided the Commission with a summary of the AFD renewal process and the districts under review. Mr. Vinciguerra also provided an overview of the property being considered for addition in the Mill Creek AFD.

Mr. Krapf opened the floor for questions from the Commission.

Mr. O'Connor inquired if there was only one AFD withdrawal.

Mr. Vinciguerra stated that the property owner of the parcels in the Williamsburg Farms AFD has requested not to renew the district; therefore the district will cease to exist.

Mr. Krapf opened the public Hearing for the following cases:

Case No. AFD-01-89-1-2014, Armistead Agricultural & Forestal District Renewal
Case No. AFD-05-86-1-2014, Barnes Swamp Agricultural & Forestal District Renewal
Case No. AFD-01-02-1-2014, Carter's Grove Agricultural & Forestal District Renewal
Case No. AFD-10-86-1-2014, Christenson's Corner Agricultural & Forestal District Renewal
Case No. AFD-06-86-1-2014, Cranston's Pond Agricultural & Forestal District Renewal
Case No. AFD-02-86-1-2014, Croaker Agricultural & Forestal District Renewal
Case No. AFD-09-86-1-2014, Gordon Creek Agricultural & Forestal District Renewal
Case No. AFD-12-86-1-2014, Gospel Spreading Church Farm Agricultural & Forestal District Renewal
Case No. AFD-03-86-1-2014, Hill Pleasant Farm Agricultural & Forestal District Renewal
Case No. AFD-07-86-1-2014, Mill Creek Agricultural & Forestal District Renewal
Case No. AFD-11-86-1-2014, Yarmouth Creek Agricultural & Forestal District Renewal
Case No. AFD-09-86-4-2014, 4346 Centerville Rd., Gordon Creek Addition
Case No. AFD-07-86-2-2014, 8557 Diascund Rd., Mill Creek Addition

Mr. Krapf noted that he would recuse himself from the vote on Case No. AFD-07-86-1-2014, Mill Creek Agricultural & Forestal District Renewal as he resides within that district.

There being no speakers, Mr. Krapf closed the public hearing.

Mr. Krapf opened the floor for discussion by the commission for motions.

Mr. Basic inquired if the motions were to be for individual districts.

Mr. Krapf confirmed.

Mr. John Wright inquired if there were residences on any of the parcels enrolled in an AFD and could more properties be added by a property owner.

Mr. Holt stated that additional properties could be added. Mr. Holt further stated that information on adding properties to an AFD had been included with the property owner and adjacent property owner notification letters which were sent out at the beginning of the renewal process.

Mr. Wright inquired about limitations on commercial enterprises on land enrolled in an AFD.

Mr. Holt responded that commercial agricultural or silvicultural activities are permitted. Mr. Holt stated that any other activities are reviewed on an individual basis and the activity must be directly related to an agricultural or forestal use.

Mr. Basic moved to recommend approval of Case No. AFD-01-89-1-2014, Armistead Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. Wright moved to recommend approval of Case No. AFD-05-86-1-2014, Barnes Swamp Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. Drummond moved to recommend approval of Case No. AFD-01-02-1-2014, Carter's Grove Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Ms. Bledsoe moved to approve Case No. AFD-10-86-1-2014, Christenson's Corner Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. O'Connor moved to recommend approval of Case No. AFD-06-86-1-2014, Cranston's Pond Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. Wright moved to recommend approval of Case No. AFD-02-86-1-2014, Croaker Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. Drummond moved to recommend approval of Case No. AFD-09-86-1-2014, Gordon Creek Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Ms. Bledsoe move to recommend approval of Case No. AFD-12-86-1-2014, Gospel Spreading Church Farm Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. Basic moved to recommend approval of Case No. AFD-03-86-1-2014, Hill Pleasant Farm Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. O'Connor moved to recommend approval of Case No. AFD-07-86-1-2014, Mill Creek Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 5-0-1; Mr. Krapf abstaining and Mr. Richardson being absent.

Mr. Wright moved to recommend approval of Case No. AFD-11-86-1-2014, Yarmouth Creek Agricultural & Forestal District Renewal.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

Mr. Holt noted that Case No. AFD-09-86-4-2014, 4346 Centerville Rd., Gordon Creek Addition had been withdrawn after it had been advertised and while the required public hearing was held, no vote was required.

Mr. Drummond moved to recommend approval of Case No. AFD-07-86-2-2014, 8557 Diascund Rd., Mill Creek Addition.

On a roll call vote, the Planning Commission voted to recommend approval of the application with the conditions listed in the staff report by a vote of 6-0; Mr. Richardson being absent.

N. Case Nos. ZO-0001-2014, ZO-0002-2014, ZO-0003-2014, Zoning Ordinance Amendments for the Keeping of Chickens in R-2, General Residential and R-3, Residential Redevelopment Zoned Areas of the County

Mr. Krapf stated that one public hearing would be held for all of the cases listed; however, each case would require a separate vote.

Mr. Holt noted that there had been a typographical error on page 121 and a corrected page has been provided. Mr. Holt further clarified that Case No. ZO-00001-2014 related to amendments to Special Regulations, Z0-0002-2014 related to amendments to the R-2, General Residential District and ZO-0003-2014 related to the R-3, Residential Redevelopment District.

Mr. Scott Whyte, Senior Landscape Planner II, presented a report to the Commission on the proposed ordinance amendments.

Mr. Krapf opened the floor to questions by the Commissioners.

Mr. Wright stated that he did not see any language in the proposed ordinances stipulating that the regulations were subject to being superseded by HOA covenants and restrictions.

Mr. Whyte responded that HOA covenants and restrictions were not addressed at the recommendation of the County Attorney and that violations of HOA covenants and restrictions would be a civil matter. Mr. Whyte further stated that the County would not approve chicken keeping applications where there was a conflict with HOA restrictions.

Mr. Wright inquired whether County staff would be checking to determine if HOA restrictions existed.

Mr. Whyte stated that the applicant would be required to state on the application whether there are HOA restrictions.

Mr. Wright stated that he is concerned that the County could incur costs if involved in litigation related to an HOA violation.

Mr. Krapf inquired if the application requires the applicant to state whether there are HOA restrictions.

Mr. Whyte confirmed.

Mr. Krapf inquired if the applicant is required to provide a copy of the HOA covenants and restrictions.

Mr. Whyte stated that a copy of the HOA covenants and restrictions is not required.
Ms. Bledsoe inquired how many applications have been filed to date.

Mr. Whyte responded that no applications have been received.

Mr. Krapf clarified that currently the ordinance only allows for chicken keeping in R-1, Limited Residential District.

Mr. Drummond stated that he has a concern about the five-foot setback for coops.

Mr. Krapf stated that this portion of the ordinance is for R-1, Limited Residential District and has already been approved by the Board of Supervisors.

Mr. Whyte confirmed and stated that the setbacks are five feet from the property line and twenty-five feet from any adjacent dwelling.

Mr. Krapf suggested that since the setbacks had already acted on by the Board, if Mr. Drummond had a concern about the setbacks he could make a comment for the record during Commission Discussions and Requests for review of the setbacks.

Mr. Wright inquired whether a chicken keeping permit could be revoked if it is later found that HOA restrictions exist.

Mr. Whyte confirmed.

Mr. Wright stated that this would give the HOA recourse through the County to abate a violation.

Ms. Bledsoe requested clarification whether the County would act on violations.

Mr. Krapf stated that the County would revoke the permit; however, violations of HOA covenants and restrictions would remain a civil matter.

Mr. O'Connor inquired about the lot size requirement for R-3, Residential Redevelopment District.

Mr. Holt stated that no applications have been submitted for an R-3 district to be able to gauge potential lot size. Mr. Holt further stated that it was the desire of the Policy Committee to keep the requirements the same across the three districts.

Mr. Basic noted that currently there is no land zoned R-3.

Mr. Krapf opened the floor for disclosure by the Commissioners regarding any conversations with applicants.

No disclosures were noted.

Mr. Krapf opened the public hearing for Case Nos. ZO-0001-2014, ZO-0002-2014 and ZO-0003-2014.

There being no speakers, Mr. Krapf closed the public hearing.

Mr. Krapf opened the floor for discussion by the Commission. Mr. Krapf requested that the cases be discussed individually, starting with ZO-0003-2014.

Mr. Wright inquired whether chicken keeping could be reconsidered when an application for an R-3 development plan is reviewed.

Mr. Holt clarified that, if the ordinance amendments are approved, then it could not be reconsidered as part of a development plan review. Mr. Holt noted that any changes would require a separate legislative action for an ordinance amendment.

Ms. Bledsoe inquired whether there was an advantage or disadvantage to creating an ordinance for a zoning designation that is not currently in use.

Mr. Rogers responded that this is done frequently and the regulations provide a framework for the future use of the land.

Mr. Holt noted that the same situation exists with the EO district. The zoning designation exists and regulations have been established for land in that district; however, there are currently no properties with that designation.

Ms. Bledsoe noted that she did not find an advantage to regulating chickens in R-3 when there were no property owners requesting to keep chickens.

Mr. Basic concurred but noted that establishing such land use regulations would give more definition to the district which could be used to determine compatibility with surrounding land use during consideration of rezoning cases.

Mr. O'Connor noted that the subdivision ordinance would apply to any R-3 development plan and the subdivision ordinance requires there to be an HOA.

Mr. Rogers confirmed.

Mr. Krapf noted that the HOA might or might not allow chickens.

Ms. Bledsoe noted that the primary reason for not recommending chicken keeping in the R-3 district during the first review was the land use issue.

Mr. O'Connor noted that one of the concerns was the potential for there to be cluster developments in R-3 where lots were close together.

Ms. Bledsoe inquired whether there had been any recent changes to warrant a different analysis.

Mr. Basic stated that the Policy Committee's earlier determination was on target.

Ms. Bledsoe moved to recommend denial of ZO-0003-2014.

Mr. Holt noted that a yes vote would be to deny ZO-0003-2014.

On a roll call vote, the Planning Commission voted to recommend denial of ZO-0003-2014 by a vote of 6-0; Mr. Richardson being absent.

Mr. Krapf requested that the next item for discussion be the draft ordinance for Z0-0002-2014, R-2, General Residential District.

Mr. Basic noted that neighboring jurisdictions have not had a large number of applications for chicken keeping and the County has not yet received any applications. Mr. Basic stated that, regardless of the benefits of backyard chicken keeping, the impact of making sweeping changes for a large portion of the County was too great.

Mr. Krapf stated that when chicken keeping was considered in R-1, he voted in favor of it because of the low density in that district. Mr. Krapf also stated that he had been interested to see how many applications were generated and what types of complaints were reported using chicken keeping in R-1 as a test case.

Mr. Krapf further stated that the Statement of Intent for the R-2, General Residential District calls for the district to be composed of certain quiet, low-density residential areas plus certain open areas where similar residential development is likely to occur. The regulations for this district are designed to stabilize and protect the essential characteristics of the district, to promote and encourage the clustering of residential developments to maximize shared and purposeful open space. Mr. Krapf noted that the emphasis on clustering the residential development was contrary to the criteria he considered when reviewing the ordinance to allow chicken Keeping in R-1, Limited Residential. Mr. Krapf stated that he would not be supportive of permitting chicken keeping in the R-2 district.

Mr. Wright stated that he is reluctant to encourage something that might result in legal disputes. Mr. Wright further noted that he does not see a need for allowing chicken keeping in the R-2 district where the density is higher.

Mr. O'Connor stated that it would be possible for a master planned R-2 community to have town homes or clustered homes, apartments and single family residences. Mr. O'Connor further stated that based on the results of the survey, with a majority opposed to chicken keeping, he would not support chicken keeping in the R-2 district.

Ms. Bledsoe stated that she believes individuals choose to reside in a neighborhood based on the experience they expect to get. For example, someone choosing to live in New Town would anticipate a different lifestyle than a person choosing to live in Kingsmill. Ms. Bledsoe further noted that changing that experience for those residents who are currently in a neighborhood because a few individuals want to keep chickens is the wrong way to proceed. Ms. Bledsoe stated that she believed the discussion should occur when the majority of residents favor or request the change. Ms. Bledsoe noted that she was anticipating the County receiving more applications for chicken keeping and individuals asking when chicken keeping would be allowed in R-2 and R-3. Ms. Bledsoe stated that the lack of interest indicates that there is not a large interest in chicken keeping. Ms. Bledsoe further noted that she appreciated the diligence and passion of the group that supported chicken keeping; however, she did not feel they represented a majority of the citizens. Ms. Bledsoe stated that she did not support allowing chicken keeping in R-2.

Ms. Bledsoe moved to recommend denial of ZO-0002-2014.

Mr. Krapf clarified that a yes vote would be to deny ZO-0002-2014.

On a roll call vote, the Planning Commission voted to recommend denial of ZO-0002-2014 by a vote of 6-0; Mr. Richardson being absent.

Mr. Krapf called for discussion of ZO-001-2014.

Mr. Holt clarified that staff understood that the recommendation of the Policy Committee was that in drafting ordinances, R-1, R-2 and R-3 should have the same stipulations on chicken keeping. Mr. Holt stated that staff also understood that the Policy Committe requested that the harvesting of chickens not be permitted in the residential districts. Mr. Holt stated that the proposed ordinance amends the existing language so that harvesting of chickens would not be permitted in R-1, R-2 or R-3.

Mr. O'Connor stated the dispatching of chickens which many people consider to be pets was inconsistent with the nature of residential communities.

Ms. Bledsoe moved to recommend approval of the ordinance amendment for ZO-0001-2014.

Mr. Drummond asked for confirmation that the motion was to approve an ordinance amendment to prohibit the harvesting of chickens in any of the residential districts.

Mr. Holt confirmed.

On a roll call vote, the Planning Commission voted to recommend approval of ZO-00012-2014 by a vote of 6-0; Mr. Richardson being absent.

6. PLANNING DIRECTOR'S REPORT

Mr. Holt noted that FEMA is in the process of updating the flood insurance rate maps for James City County and that there would be an open house on August 13 at Legacy Hall from 5 to 7 p.m. to allow citizens to review the preliminary maps and learn more about their flood risk. FEMA and staff will be on hand to answer questions. Mr. Holt further noted that the maps could also be viewed at the Development Management office.

Mr. Holt noted that the first Planning Commission Work Session on the draft text for the Comprehensive Plan update would take place on August 7 at 4 p.m.

7. COMMISSION DISCUSSION AND REQUESTS

Mr. Krapf noted that Ms. Bledsoe would be the Planning Commission representative to the Board of Supervisors meeting for August and would be filling in for Mr. Richardson who is on two week active duty.

Mr. Krapf stated that even though the Planning Commission Working Group would be meeting in the Board Room and would be televised, it would be appropriate to wear the less formal attire as for subcommittees such as the Development Review Committee or Policy Committee.

Mr. O'Connor inquired if the Policy Committee would be meeting in August.

Mr. Holt stated that the Policy Committee would not meet in August.

8. ADJOURNMENT

Mr. O'Connor moved to adjourn to August 7, 2014 at 4 p.m.

The meeting was adjourned at approximately 7:54 p.m.

_____ _____

Richard Krapf, Chairman Paul D. Holt, III, Secretary

Case No. SUP-0008-2014, Gilley Enterprises Equipment Storage
Staff Report for the September 3, 2014, Planning Commission Public Hearing

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

PUBLIC HEARINGS	**Building F Board Room; County Government Complex**
Planning Commission:	September 3, 2014 7:00 p.m.
Board of Supervisors:	October 14, 2014 7:00 p.m. (tentative)

SUMMARY FACTS

Applicant:	Mr. Gregory R. Davis of Kaufman & Canoles, P.C.
Land Owner:	REGJAG, L.L.C.
Proposal:	To allow storage of heavy equipment
Location:	131 Smokehouse Lane
Tax Map/Parcel:	4740100042E
Parcel Size:	±56.49 acres
Existing Zoning:	R-1, Limited Residential and A-1, General Agricultural, with proffers
Comprehensive Plan:	Low Density Residential and Conservation Area
Primary Service Area:	Inside

STAFF RECOMMENDATION

With the proposed conditions, staff finds the proposed use to be compatible with the surrounding zoning and development and consistent with the 2009 Comprehensive Plan. Staff recommends the Planning Commission recommend approval of this application to the Board of Supervisors with the conditions listed in the staff report.

Staff Contact: Jose Ribeiro, Senior Planner II Phone: 253-6690

PROJECT DESCRIPTION

Mr. Gregory Davis, on behalf of REGJAG L.L.C., has applied for a special use permit (SUP) to allow for the storage of heavy equipment on a portion of the Gilley family farm commonly know as "Gatehouse Farm." The property is split zoned R-1, Limited Residential and A-1, General Agricultural, with proffers and designated Low Density Residential and Conservation Area by the 2009 Comprehensive Plan. To the north and east of the property are Mill Creek and its tributaries and tidal marsh areas. The Gatehouse Farms residential neighborhood is located to the west, and to the

south is property which is currently undeveloped. The property has frontage on Smokehouse Lane; however, vehicular access to and from the property is currently through an existing 50-foot ingress/egress easement which connects with Gate House Boulevard. The property is part of the Gospel Spreading Church Farm Agricultural and Forestal District (AFD). The area where the storage of equipment is proposed is zoned A-1, General Agricultural. According to the Zoning Ordinance, storage and repair of heavy equipment requires issuance of a SUP in areas zoned A-1.

According to the applicant, activities related to farming were established on the property as far back as 1905; however, the Gilley family has also been operating a general contracting business from Gatehouse Farm, such as clearing and grading and other site work requiring heavy equipment, for many years. All of the vehicles and equipment associated with farming and the business have been stored on the Gatehouse Farm property.

On March 14, 2011, a home occupation permit was issued to Mr. Edwin Gilley as he started his own company (Gilley Enterprises) in the tradition of his family business. As Mr. Gilley's business has outgrown the standards established for a home occupation permit, as defined in the Zoning Ordinance, issuance of a SUP is required specifically to allow the storage of heavy equipment. Currently, Mr. Gilley stores the following equipment and vehicles at Gatehouse Farm: a GMC single Axle Dump Truck, a twenty-ton trailer, a John Deere Skid Loader, a twenty-four feet Haulmark trailer, and a John Deere 75 excavator (attachment #4). Mr. Gilley proposes to limit storage of these and future equipment to a 3,200 square feet area (graveled parking area to provide an all-weather surface) as shown on the attached master plan.

History of the Property

On July 30, 1987, the Board of Supervisors rezoned approximately 173 acres of property located behind the Gatehouse Farms residential neighborhood between Gatehouse Boulevard and Smoke House Lane from A-1, General Agricultural, A-2, Limited Agricultural, and R-1, Limited Residential, to R-1 and A-1, with proffers. It was anticipated that the 173-acre property would be developed in accordance with the residential zoning ordinance provisions in place at that time and the proffers accepted by the Board limited the number of dwelling units on the property to 136.

On June 25, 2013, the Board of Supervisors approved a resolution authorizing the purchase of a conservation easement as part of the purchase of development rights program ("PDR") with the County covering a total of 242.5 acres on the Gilley property between the Gatehouse farms subdivision and Mill Creek. Approximately 68 acres are zoned R-1, Limited Residential, and 174 acres are zoned A-1, General Agricultural. The reminder of the land is located in tidal marshes along Mill Creek. The conservation agreement permits the owners to subdivide three lots estimated at ± 50 acre each. No further subdivision rights have been retained and future development of 136 dwelling units no longer attainable.

On July 22, 2014, the Board of Supervisors approved a proffer amendment eliminating the need for a recreational lot and comprehensive drainage analysis for the subject property based on the number of dwelling units being limited to three ± 50 acres lot.

The property subject to this SUP application is part of the Gospel Spreading Church Farm AFD. The district was approved by the Board of Supervisors on December 1986 and in 1987 ± 100 acres of the Gilley's property was added to the district with subsequent additions in 1991 (± 65 acres) and in 2004 (± 71 acres). Pursuant to restrictions established by the policies governing AFDs subdivision of lands is limited to 25 acre or more. Staff notes that a subdivision and boundary line adjustment plat creating three parcels (each of approximately 56 acres) was granted final approval by the County on August 11, 2014. The exhibit (the "Master Plan") attached to this report shows the new configuration of Parcel No.2 which is subject to this SUP application (attachment #2).

Further restrictions set forth by policies governing AFDs state that "no special use permit shall be issued except for agricultural, forestall, or other activities and uses consistent with Virginia Code, which are not in conflict with the policies of the District." So as not to conflict with AFD requirements the property owner has requested that ±3,200 square feet of area proposed to be used for the storage of equipment and vehicles associated with commercial uses not be included in the current renewal process for the Gospel Spreading Church Farm AFD (attachment #3). On August 6, 2014, the Planning Commission recommended approval of the Gospel Spreading Church Farm AFD renewal which did not include the request for removal of the aforementioned 3,200 square feet area; however, this request has been included for consideration at the next Board of Supervisors meeting on September 9, 2014.

PUBLIC IMPACTS

Archaeological Impacts

The subject property is not located within an area identified as a highly sensitive area in the James City County Archaeological Assessment and therefore an archaeological study is not required.

Environmental

Watershed: Powhatan Creek

The Engineering and Resource Protection Division (ERP) has reviewed the application and has issued comments that will be addressed by the applicant at the development plan design stage should this application be approved. Staff will also be consulting the 2014 Federal Emergency Management Agency (FEMA) flood maps at the development plan stage to ensure that the location of the storage area is placed outside a flood plain area.

Parts of the property, particularly areas located near Mill Creek and its tributaries, and the tidal marsh areas are designated as resource protection areas (RPA) by the County and as conservation sites by the Department of Conservation and Recreation (DCR). The conservation natural heritage resource with this site is the Rare skipper, a small, yellow-orange butterfly species that inhabits tidal marshes. According to the DCR, there are no State Natural Area Preserves under DCR's jurisdiction

in the project vicinity and that the current activity will not affect any documented state-listed plants or insects. To ensure that the location of the storage area will not encroach into the RPA and the conservation site staff has proposed a SUP condition that requires placement of the storage area no closer than15-feet of a RPA buffer and areas designated by the Department of Conservation and Recreation (DCR) as containing natural heritage resources (condition #9).

Public Utilities

The site is located inside the Primary Service Area. The James City Service Authority (JCSA) staff has reviewed this SUP application and has no objections to the proposal.

Transportation:

The proposal is expected to generate low daily traffic and therefore have minimal impact to the local road system. According to the applicant, equipment associated with Mr. Gilley's business are typically moved from work site to work site and are not taken to and from Gatehouse Farm on a daily basis therefore minimizing vehicular trips through Gatehouse Boulevard from where access to Neck-O-Land Rod is obtained.

VDOT Staff comments: VDOT staff has reviewed the application and has issued comments that will be addressed by the applicant at the development plan design stage particularly the reconstruction, relocation, and/or upgrading of existing commercial entrances.

COMPREHENSIVE PLAN

The site is designated by the 2009 Comprehensive Plan as Low Density Residential and Conservation Area (areas along the proximity to Mill Creek and its tributaries). Recommended uses in Low Density Residential areas include residential, school, churches, very limited commercial and community-oriented facilities. Recommended uses in Conservation Areas include hunting and fishing clubs, fish and game preserves, parks, and other open space that complement the natural environment. For very limited commercial activities in Low Density Residential areas, the Comprehensive Plan establishes the following standards (with staff's comments in *italics*):

a. Complement the residential character of the area.
   Staff finds the storage of heavy equipment will be located on an area distant from any residential units. A foreseeable impact to adjacent residential areas is vehicular traffic through Gate House Boulevard; however, the applicant has maintained that traffic should be limited as vehicles and equipment are typically moved from work site to work site.
b. Have traffic, noise, lighting and other impacts similar to surrounding residential uses.
   Staff finds that this small scale business operation will have limited impacts to surrounding residential areas. As vehicles and equipment are not typically moved from Mr. Gilley's property on a daily basis impacts to traffic and noise will be limited. Proposed SUP condition # 6 requires all new lighting to be recessed fixtures with no lens, bulb, or globe extending below the casing.
c. Generally be located on collector or arterial roads at intersections.
   Part of the vehicular traffic will occur inside the Gilley's properties. Neck-O-Land Road is the main thoroughfare which will be accessed via Gate House Boulevard.

d. Provide adequate screening and buffering to protect the character of nearby residential areas; *The equipment storage area is located at the center of Mr. Gilley's property and distant from the nearest residential neighborhoods of Gatehouse Farms and Peleg's Point.*
e. Generally located to support the residential community in which they area located. *Mr. Gilley business provides support not only to adjacent areas but to the County as a whole.*

Staff finds that the low density residential character of this neighborhood will not be affected by this proposal and potential impacts will be mitigated by the proposed SUP conditions.

RECOMMENDATION

With the proposed conditions, staff finds the proposed use to be compatible with the surrounding zoning and development and consistent with the 2009 Comprehensive Plan. Staff recommends the Planning Commission recommend approval of this application to the Board of Supervisors with the conditions listed in the staff report.

1. This Special Use Permit (the "SUP") shall be valid for the storage of construction equipment and vehicles on an area of up to 3,200 square-feet area (the "Proposal"), on a property located at 131 SmokeHouse Lane and further identified as JCC RE Tax Map No. 4740100042E (the "Property"). The SUP shall also permit use of an existing farm road and a 50-feet ingress and egress easement located on a parcel at 227 Gate House Boulevard and further identified as JCC RE Tax Map No. 4740100042F for ingress/egress of such construction equipment. Development of the Property shall be generally in accordance with the Master Plan titled "Exhibit Showing Proposed Parcel 2 of the Properties of REGJAG, L.L.C. & Leigh Ann Gilley" dated May 5, 2014 (the "Master Plan"), with such minor changes as the Planning Director determines does not change the basic concept or character of the development.

2. No work associated with the Proposal, except for maintenance of equipment and vehicles, storage, and loading of materials on trucks shall be conducted at the Property.

3. Transportation of equipment to and from the construction equipment storage site shall be limited to 8 a.m. to 5 p.m. Monday through Friday, except for occasional after hours transportation related to storm damage work, snow removal jobs and the like.

4. Storage of equipment and vehicles associated with the Proposal shall be contained within the 3,200 square-feet area as shown on the Master Plan.

5. No outdoor signage advertising the Proposal shall be allowed on the Property.

6. All new exterior light fixtures, including building lighting, on the Property shall have recessed fixtures with no lens, bulb, or globe extending below the casing. In addition, a lighting plan shall be submitted to and approved by the Planning Director or his designee, which indicates no glare outside the property lines. All light poles shall not exceed 20 feet in height unless otherwise approved by the Planning Director prior to final site plan approval. "Glare" shall be defined as more than 0.1 foot-candle at the boundary of the Property or any direct view of the lighting source from the adjoining properties.

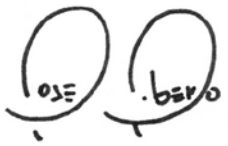
7. An amendment to this SUP application shall be necessary should the number of vehicles and/or machinery associated with the Proposal exceed the storage capacity of the 3,200 square-feet area.

8. Prior to final site plan approval, a spill prevention and containment plan which addresses chemical handling including but not limited to oil, diesel and gasoline, shall be submitted to the Environmental Director and the Fire Chief for their respective review and approval.

9. No soil disturbance, parking and/or storage of equipment and/or vehicles shall occur within 15-feet of a RPA buffer and/or areas designated by the Department of Conservation and Recreation (DCR) as containing natural heritage resources.

10. A site plan shall be required for this Proposal. Final approval of the site plan shall be obtained within 18 months of issuance of this SUP, or the SUP shall become void.

11. This special use permit is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.



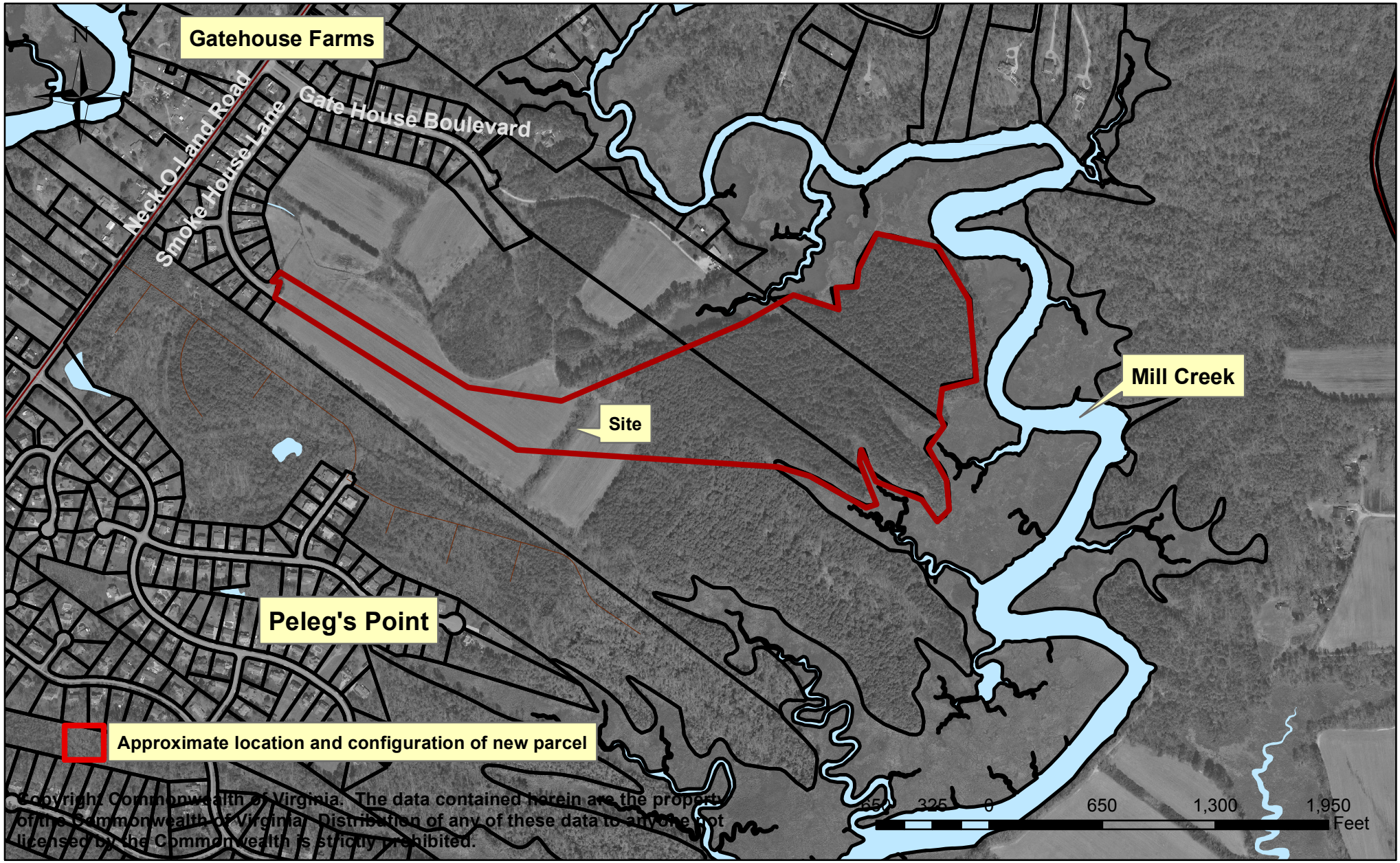
_____

Jose Ribeiro, Senior Planner II

ATTACHMENTS:

1. Location Map
2. Master Plan (under separate cover)
3. Letter from the applicant regarding AFD
4. Pictures of equipment and vehicles

JCC-Case No. SUP-0008-2014
Gilley Enterprises Equipment Storage



Copyright Commonwealth of Virginia. The data contained herein are the property of the Commonwealth of Virginia. Distribution of any of these data to anyone not licensed by the Commonwealth is strictly prohibited.

EXHIBIT SHOWING PROPOSED PARCEL 2
OF THE PROPERTIES OF
REGJAG, L.L.C. & LEIGH ANN GILLEY

JAMES CITY COUNTY | JAMESTOWN DISTRICT | VIRGINIA

DATE: 05/05/2014 | SCALE: 1"=250'' | JOB #08-109

LandTech Resources, Inc.
Surveying • Engineering • GPS
3925 Midlands Road, Suite E, Williamsburg, Virginia 23188
Phone: (757) 565-1677 Fax: (757) 565-0782
web: landtechresources.com

SHEET: 1 OF 1

ADJOINING PROPERTY INFORMATION

① PARCEL 'C'
P.B. 45, PG. 54

② PARCEL 'B'
P.B. 45, PG. 27

③ PARCEL 'A'
P.B. 45, PG. 66

④ PARCEL 'A-1'
LEIGH ANN GILLEY
INSTR. #080025894 (DEED)
INSTR. #050002188 (PLAT)

⑤ PARCEL 'C' & PART OF PARCEL 'A'
ROBERT E. GILLEY, II &
MEREDITH H. GILLEY
INSTR. #000017549 (DEED)
P.B. 78, PG. 62 (PLAT)

Ⓐ *EXISTING 20' INGRESS/EGRESS & UTILITY EASEMENT P.B. 78, PG. 62*

PLANNING DIVISION
AUG 18 2014
RECEIVED

SURVEY TIE LINE
(T3)-(T4)

N 18°41'44" E	120.43'
S 71°16'54" E	251.66'
N 30°55'25" E	461.14'
S 83°53'47" E	373.34'
S 38°51'15" E	351.55'
S 03°56'08" E	582.47'
S 83°47'33" W	202.34'
S 02°59'51" E	143.95'
S 58°57'02" W	61.43'

SURVEY TIE LINE
(T4)-(T5)

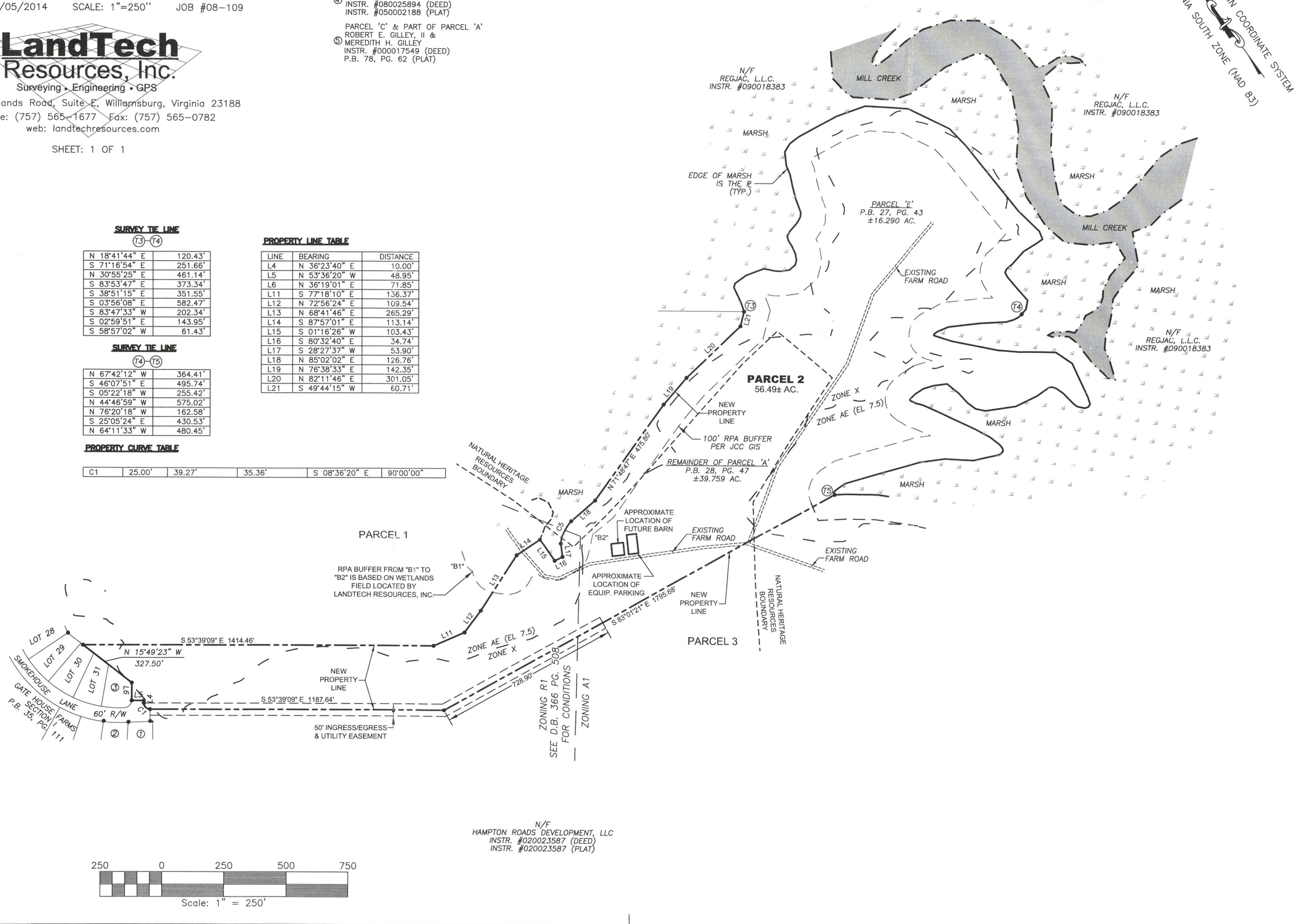
N 67°42'12" W	364.41'
S 46°07'51" E	495.74'
S 05°22'18" W	255.42'
N 44°46'59" W	575.02'
N 76°20'18" W	162.58'
S 25°05'24" E	430.53'
N 64°11'33" W	480.45'

PROPERTY CURVE TABLE

C1	25.00'	39.27'	35.36'	S 08°36'20" E	90°00'00"

PROPERTY LINE TABLE

LINE	BEARING	DISTANCE
L4	N 36°23'40" E	10.00'
L5	N 53°36'20" W	48.95'
L6	N 36°19'01" E	71.85'
L11	S 77°18'10" E	136.37'
L12	N 72°56'24" E	109.54'
L13	N 68°41'46" E	265.29'
L14	S 87°57'01" E	113.14'
L15	S 01°16'26" W	103.43'
L16	S 80°32'40" E	34.74'
L17	S 28°27'37" W	53.90'
L18	N 85°02'02" E	126.76'
L19	N 76°38'33" E	142.35'
L20	N 82°11'46" E	301.05'
L21	S 49°44'15" W	60.71'



KAUFMAN & CANOLES
attorneys at law

Kaufman & Canoles, P.C.
4801 Courthouse Street
Suite 300
Williamsburg, VA 23188

Mailing Address
Post Office Box 6000
Williamsburg, VA 23188

T (757) 259.3800
F (757) 259.3838

kaufCAN.com

Gregory R. Davis
(757) 259.3820
grdavis@kaufcan.com

August 14, 2014

Via e-mail

Paul Holt
Director of Planning
James City County
101-A Mount Bays Road
Williamsburg, VA 23185

Re: SUP – 0008-2014
R. Edwin Gilley

Dear Paul:

On behalf of my client Edwin Gilley, I write to request that the area which is the subject of the above-referenced special use permit application not be included within the Gospel Spreading Church Agricultural and Forestal district when the same is renewed. The details of this request are as follows.

My client has applied for a special use permit which will allow the parking of construction equipment associated with his business on a gravel parking area approximately 40 x 80 feet in size, as more particularly shown on the illustrative plan submitted with the SUP application entitled: "EXHIBIT SHOWING PROPOSED PARCEL 2 OF THE PROPERTIES OF REGJAG, LLC & LEIGH ANN GILLEY" dated May 5, 2014 made by LandTech Resources, Inc. The remainder of Mr. Gilley's property will remain in agricultural and forestal use. Accordingly, this request is that, upon renewal of the subject AFD this fall, the County not include the 40 x 80 foot area described above in the renewed AFD.

In the event that, after renewal of the AFD excluding the subject 40 x 80 foot area, the Board of Supervisors does not approve the SUP at issue, my client will seek to place the 40 x 80 foot portion of his property into the AFD.

This letter has been signed below by Robert Edwin Gilley II manifesting his consent to the request. Thank you for your kind attention to this matter.

Very truly yours,

Gregory R. Davis

GRD:fmy

cc: Luke Vinceiguerra, Planner

SEEN AND AGREED TO:

ROBERT EDWIN GILLEY II

Single Axle Dump Truck and Trailer



Skid Loader



Twenty-four feet Haulmark Trailer



Excavator



CONSIDERATION ITEM

MEMORANDUM

DATE: September 3, 2014

TO: The Planning Commission

FROM: Ellen Cook, Senior Planner II

SUBJECT: Longhill Road Corridor Study Report

Longhill Road is a major travel corridor in the community that has seen increases in traffic volumes over the years leading to congestion and safety issues. The circumstance was reflected in the County's 2009 Comprehensive Plan, which included a vision statement for Longhill Road that suggested conducting a study to explore needs along the corridor and context-sensitive transportation solutions. In response, the Department of Development Management applied to the Hampton Roads Transportation Organization for an allocation of Federal Regional Surface Transportation Program (RSTP) funds to conduct a study of the Longhill Road Corridor. The County received an allocation in FY12 and an additional allocation in FY13 to fully fund the study. These federal RSTP funds are fully reimbursable by VDOT and require no local match. The Board of Supervisors appropriated the funds in July of 2012 and the Board authorized the award of a contract to Kimley Horn and Associates, Inc. in April of 2013, allowing work on the study to begin. The study has included the following elements:

- Technical analysis. Kimley Horn and Associates, Inc. conducted an extensive technical analysis. The first step was to document existing conditions, including conducting traffic count data collection, and to compile a variety of other data such as crash reports, environmental and historic features, and existing pedestrian, bicycle and transit facilities and operations to give a broad assessment of the conditions along the corridor. The technical analysis continued as the consultant analyzed land uses and market conditions to forecast future traffic volumes on the corridor, then determine areas where levels of service may decline and become deficient. Using this analysis, Kimley Horn developed proposed typical sections for the corridor, an access management plan, and an intersection design plan. Together, these were used to produce concept renderings for the whole length of the corridor, as well as a listing of the recommended improvements and phasing recommendations.

- Public input. At various stages of the study, the consultant and the County held four public meetings (October, November, February and May). Additional activities included five meetings of the Project Advisory Committee (which consists of representatives of various agencies and stakeholders along the corridor), seventeen stakeholder interviews, and creation of a website (http://www.jamescitycountyva.gov/longhillcorridorstudy). In addition to these general opportunities, and in response to requests, staff and the

consultant also met with a number of individuals and organizations along Longhill to discuss the specifics of the recommendations in relation to their properties.

- Check-ins with the Policy Committee and Board of Supervisors. Staff and the consultant provided updates and opportunities for feedback to the Policy Committee at their meetings in October 2013 and March and May of 2014. Staff and the consultant provided updates to the Board of Supervisors at its work sessions in October 2013 and May 2014. A reading file item was also provided to the Board in March 2014.

The results of the work on these individual components have now been compiled into the Longhill Road Corridor Study Report, which is attached. Also included are new items added since the last update to the Policy Committee and Board in May which include: cost estimates for the sets of recommended improvements and the list of "quick hitter" possible items (i.e., those items that could potentially be accomplished in a shorter timeframe). Both of these can be found in Chapter 9. In addition, since the last update, staff has continued to work on access options for the portion of the corridor in the vicinity of Lafayette High School and Season's Trace. A number of additional options were developed with input from School Division staff, and an update on the options was presented to the School Board at its August 19, 2014 meeting. The School Board provided input, which has been included in the public input appendix, and noted in Chapter 9. Due to the complexity of this situation, staff and the consultant have determined that for the purpose of the Longhill Road Corridor Study, it would be most appropriate for the text to discuss the options (see appendices), but not make a final recommendation on this matter. County staff anticipates additional discussion with the School Division and Board over time as implementation of improvements to Longhill Road proceeds.

Now that the process has reached conclusion and the report has been compiled, the consultant and staff are bringing it forward for adoption. Should the report be adopted, such action will designate the Report as the official vision for improvement of Longhill Road, thereby setting the stage for implementation actions such as seeking funding and considering the report recommendations during review of legislative cases. Adoption will also signal to the Virginia Department of Transportation that design work (preliminary engineering) for the widening of the first phase of the corridor (from Route 199 to Olde Towne Road), which was delayed pending completion of the study, should commence. As the work on the preliminary engineering proceeds for the first phase of the corridor and the vision in the report is translated into the specifics of an engineered design, there may be necessary alteration in some details and aspects, and that the design process (which is administered by VDOT) will also include opportunities for public comment. This would also be the case for the other two phases of road improvements.

Recommendation:
Staff recommends that the Planning Commission recommend that the Board of Supervisors adopt the Longhill Road Corridor Study Report.

Ellen Cook

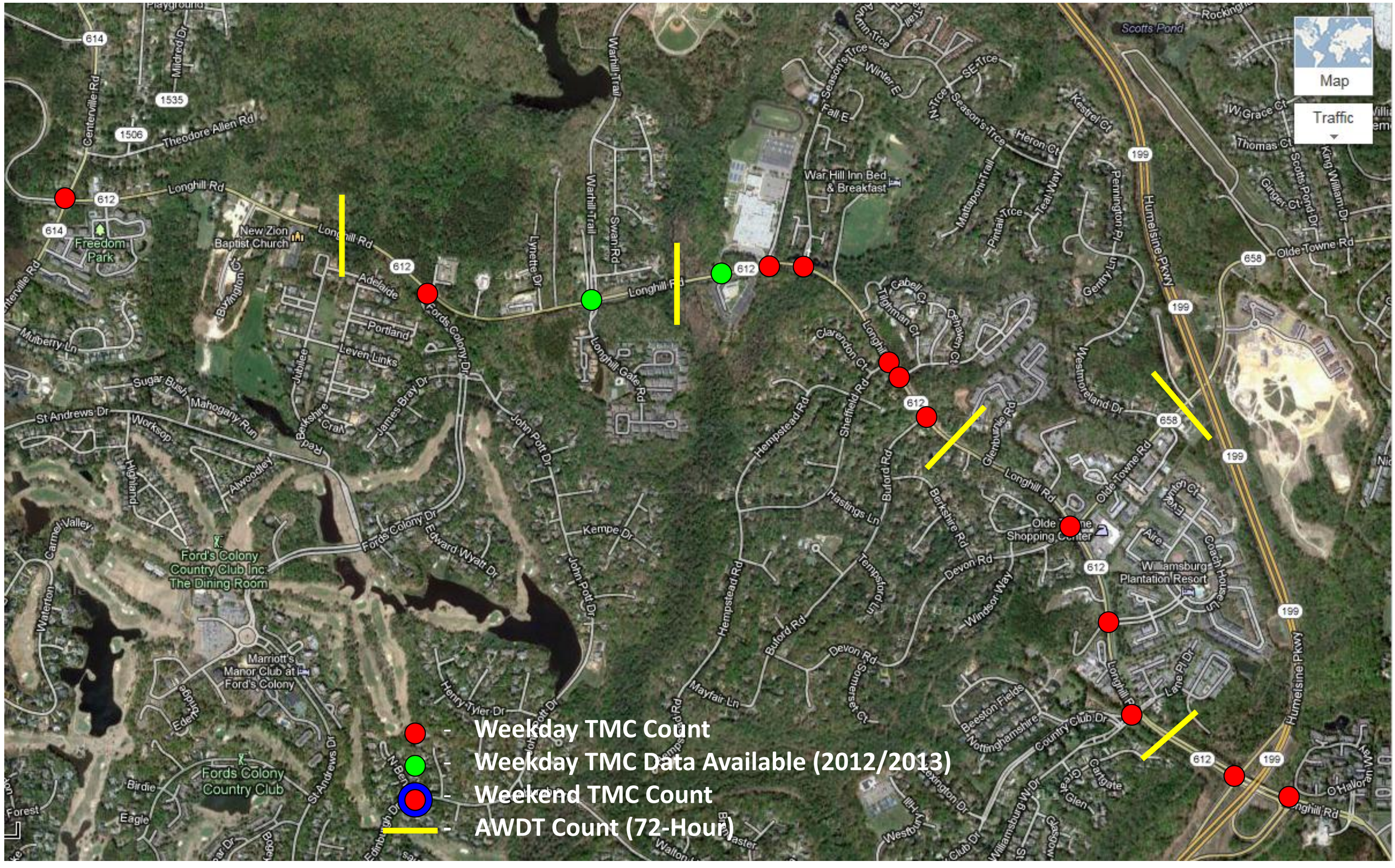
Ellen Cook

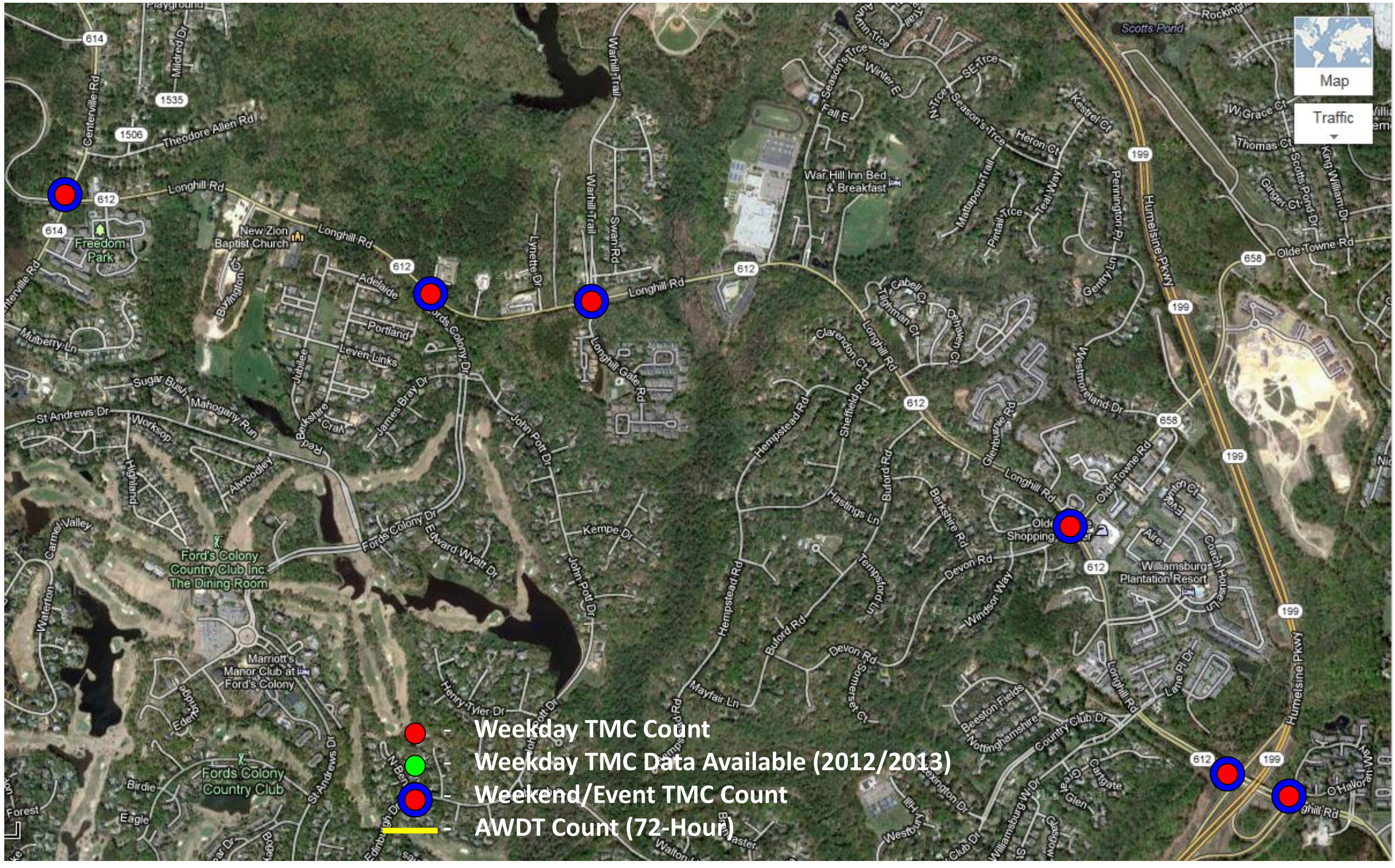
Attachments

1. Longhill Road Corridor Study Report (posted on Planning Commission agenda page)

Appendix A

Data Collection


Map
Traffic
- Weekday TMC Count
- Weekday TMC Data Available (2012/2013)
- Weekend TMC Count
- AWDT Count (72-Hour)


Map
Traffic
- Weekday TMC Count
- Weekday TMC Data Available (2012/2013)
- Weekend/Event TMC Count
- AWDT Count (72-Hour)

Peggy Malone & Associates, Inc.

File Name : 1_Longhill Rd. and Centerville Rd. AM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Car

	Centerville Rd. Southbound					Longhill Rd. Westbound					Centerville Rd. Northbound					Freedom Park Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	23	20	0	43	18	0	7	1	26	7	35	0	0	42	0	0	0	0	0	111
06:45 AM	1	37	31	0	69	31	0	5	0	36	24	37	0	0	61	0	0	0	0	0	166
Total	1	60	51	0	112	49	0	12	1	62	31	72	0	0	103	0	0	0	0	0	277
07:00 AM	0	12	24	0	36	27	1	14	0	42	15	50	1	0	66	0	1	0	0	1	145
07:15 AM	0	37	39	0	76	44	1	7	0	52	16	46	0	0	62	0	0	0	0	0	190
07:30 AM	0	24	36	0	60	38	2	12	0	52	13	63	0	0	76	1	0	0	0	1	189
07:45 AM	1	54	49	0	104	71	2	7	0	80	13	86	0	0	99	0	1	0	0	1	284
Total	1	127	148	0	276	180	6	40	0	226	57	245	1	0	303	1	2	0	0	3	808
08:00 AM	0	58	53	0	111	38	0	18	0	56	24	38	1	0	63	0	0	0	0	0	230
08:15 AM	1	43	33	0	77	31	0	44	0	75	22	44	0	0	66	0	0	0	0	0	218
Grand Total	3	288	285	0	576	298	6	114	1	419	134	399	2	0	535	1	2	0	0	3	1533
Apprch %	0.5	50	49.5	0		71.1	1.4	27.2	0.2		25	74.6	0.4	0		33.3	66.7	0	0		
Total %	0.2	18.8	18.6	0	37.6	19.4	0.4	7.4	0.1	27.3	8.7	26	0.1	0	34.9	0.1	0.1	0	0	0.2	

	Centerville Rd. Southbound				Longhill Rd. Westbound				Centerville Rd. Northbound				Freedom Park Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	24	36	60	38	**2**	12	52	13	63	0	76	**1**	0	0	**1**	189
07:45 AM	**1**	54	49	104	**71**	2	7	**80**	13	**86**	0	**99**	0	**1**	0	1	**284**
08:00 AM	0	**58**	**53**	**111**	38	0	18	56	**24**	38	**1**	63	0	0	0	0	230
08:15 AM	1	43	33	77	31	0	**44**	75	22	44	0	66	0	0	0	0	218
Total Volume	2	179	171	352	178	4	81	263	72	231	1	304	1	1	0	2	921
% App. Total	0.6	50.9	48.6		67.7	1.5	30.8		23.7	76	0.3		50	50	0		
PHF	.500	.772	.807	.793	.627	.500	.460	.822	.750	.672	.250	.768	.250	.250	.000	.500	.811

Peggy Malone & Associates, Inc.

File Name : 1_Longhill Rd. and Centerville Rd. AM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Truck

	Centerville Rd. Southbound					Longhill Rd. Westbound					Centerville Rd. Northbound					Freedom Park Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	1	1	0	2	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5
06:45 AM	0	2	4	0	6	3	0	1	0	4	2	1	0	0	3	0	0	0	0	0	13
Total	0	3	5	0	8	6	0	1	0	7	2	1	0	0	3	0	0	0	0	0	18
07:00 AM	0	2	1	0	3	2	0	2	0	4	0	3	0	0	3	0	0	0	0	0	10
07:15 AM	0	4	5	0	9	1	0	0	0	1	1	3	0	0	4	0	0	0	0	0	14
07:30 AM	0	3	4	0	7	4	0	0	0	4	0	11	0	0	11	0	0	0	0	0	22
07:45 AM	0	7	0	0	7	4	0	0	0	4	0	8	0	0	8	0	1	0	0	1	20
Total	0	16	10	0	26	11	0	2	0	13	1	25	0	0	26	0	1	0	0	1	66
08:00 AM	0	3	2	0	5	4	0	2	0	6	0	2	0	0	2	0	0	0	0	0	13
08:15 AM	0	6	1	0	7	4	0	7	0	11	3	4	0	0	7	0	0	0	0	0	25
Grand Total	0	28	18	0	46	25	0	12	0	37	6	32	0	0	38	0	1	0	0	1	122
Apprch %	0	60.9	39.1	0		67.6	0	32.4	0		15.8	84.2	0	0		0	100	0	0		
Total %	0	23	14.8	0	37.7	20.5	0	9.8	0	30.3	4.9	26.2	0	0	31.1	0	0.8	0	0	0.8	

	Centerville Rd. Southbound				Longhill Rd. Westbound				Centerville Rd. Northbound				Freedom Park Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	3	**4**	**7**	**4**	0	0	4	0	**11**	0	**11**	0	0	0	0	22
07:45 AM	0	**7**	0	7	4	0	0	4	0	8	0	8	0	**1**	0	**1**	20
08:00 AM	0	3	2	5	4	0	2	6	0	2	0	2	0	0	0	0	13
08:15 AM	0	6	1	7	4	0	**7**	**11**	**3**	4	0	7	0	0	0	0	**25**
Total Volume	0	19	7	26	16	0	9	25	3	25	0	28	0	1	0	1	80
% App. Total	0	73.1	26.9		64	0	36		10.7	89.3	0		0	100	0		
PHF	.000	.679	.438	.929	1.00	.000	.321	.568	.250	.568	.000	.636	.000	.250	.000	.250	.800

Peggy Malone & Associates, Inc.

File Name : 1_Longhill Rd. and Centerville Rd. AM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Combined

	Centerville Rd. Southbound					Longhill Rd. Westbound					Centerville Rd. Northbound					Freedom Park Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	24	21	0	45	21	0	7	1	29	7	35	0	0	42	0	0	0	0	0	116
06:45 AM	1	39	35	0	75	34	0	6	0	40	26	38	0	0	64	0	0	0	0	0	179
Total	1	63	56	0	120	55	0	13	1	69	33	73	0	0	106	0	0	0	0	0	295
07:00 AM	0	14	25	0	39	29	1	16	0	46	15	53	1	0	69	0	1	0	0	1	155
07:15 AM	0	41	44	0	85	45	1	7	0	53	17	49	0	0	66	0	0	0	0	0	204
07:30 AM	0	27	40	0	67	42	2	12	0	56	13	74	0	0	87	1	0	0	0	1	211
07:45 AM	1	61	49	0	111	75	2	7	0	84	13	94	0	0	107	0	2	0	0	2	304
Total	1	143	158	0	302	191	6	42	0	239	58	270	1	0	329	1	3	0	0	4	874
08:00 AM	0	61	55	0	116	42	0	20	0	62	24	40	1	0	65	0	0	0	0	0	243
08:15 AM	1	49	34	0	84	35	0	51	0	86	25	48	0	0	73	0	0	0	0	0	243
Grand Total	3	316	303	0	622	323	6	126	1	456	140	431	2	0	573	1	3	0	0	4	1655
Apprch %	0.5	50.8	48.7	0		70.8	1.3	27.6	0.2		24.4	75.2	0.3	0		25	75	0	0		
Total %	0.2	19.1	18.3	0	37.6	19.5	0.4	7.6	0.1	27.6	8.5	26	0.1	0	34.6	0.1	0.2	0	0	0.2	

	Centerville Rd. Southbound				Longhill Rd. Westbound				Centerville Rd. Northbound				Freedom Park Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	27	40	67	42	**2**	12	56	13	74	0	87	**1**	0	0	1	211
07:45 AM	**1**	**61**	49	111	**75**	2	7	84	13	**94**	0	**107**	0	**2**	0	**2**	**304**
08:00 AM	0	61	**55**	**116**	42	0	20	62	24	40	**1**	65	0	0	0	0	243
08:15 AM	1	49	34	84	35	0	**51**	**86**	**25**	48	0	73	0	0	0	0	243
Total Volume	2	198	178	378	194	4	90	288	75	256	1	332	1	2	0	3	1001
% App. Total	0.5	52.4	47.1		67.4	1.4	31.2		22.6	77.1	0.3		33.3	66.7	0		
PHF	.500	.811	.809	.815	.647	.500	.441	.837	.750	.681	.250	.776	.250	.250	.000	.375	.823

Peggy Malone & Associates, Inc.

File Name : 1_Longhill Rd. and Centerville Rd. PM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Car

	Centerville Rd. Southbound					Longhill Rd. Westbound					Centerville Rd. Northbound					Freedom Park Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	51	60	0	111	53	1	18	1	73	31	50	1	0	82	0	1	1	0	2	268
04:15 PM	0	48	44	0	92	52	0	20	0	72	32	63	0	0	95	0	0	3	0	3	262
04:30 PM	3	39	52	0	94	63	2	22	1	88	23	69	0	0	92	0	2	0	0	2	276
04:45 PM	0	33	68	0	101	47	2	17	1	67	33	55	0	0	88	1	1	0	0	2	258
Total	3	171	224	0	398	215	5	77	3	300	119	237	1	0	357	1	4	4	0	9	1064
05:00 PM	1	54	62	0	117	61	2	21	0	84	27	47	1	0	75	1	3	1	0	5	281
05:15 PM	0	52	80	0	132	53	3	25	0	81	56	52	1	0	109	2	3	2	0	7	329
05:30 PM	0	51	57	0	108	61	0	26	0	87	37	70	1	0	108	0	1	3	0	4	307
05:45 PM	1	40	53	0	94	63	0	16	0	79	33	48	1	0	82	0	3	6	0	9	264
Total	2	197	252	0	451	238	5	88	0	331	153	217	4	0	374	3	10	12	0	25	1181
Grand Total	5	368	476	0	849	453	10	165	3	631	272	454	5	0	731	4	14	16	0	34	2245
Apprch %	0.6	43.3	56.1	0		71.8	1.6	26.1	0.5		37.2	62.1	0.7	0		11.8	41.2	47.1	0		
Total %	0.2	16.4	21.2	0	37.8	20.2	0.4	7.3	0.1	28.1	12.1	20.2	0.2	0	32.6	0.2	0.6	0.7	0	1.5	

	Centerville Rd. Southbound				Longhill Rd. Westbound				Centerville Rd. Northbound				Freedom Park Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**1**	**54**	62	117	61	2	21	84	27	47	**1**	75	1	**3**	1	5	281
05:15 PM	0	52	**80**	**132**	53	**3**	25	81	**56**	52	1	**109**	**2**	3	2	7	**329**
05:30 PM	0	51	57	108	61	0	**26**	**87**	37	**70**	1	108	0	1	3	4	307
05:45 PM	1	40	53	94	**63**	0	16	79	33	48	1	82	0	3	**6**	**9**	264
Total Volume	2	197	252	451	238	5	88	331	153	217	4	374	3	10	12	25	1181
% App. Total	0.4	43.7	55.9		71.9	1.5	26.6		40.9	58	1.1		12	40	48		
PHF	.500	.912	.788	.854	.944	.417	.846	.951	.683	.775	1.00	.858	.375	.833	.500	.694	.897

Peggy Malone & Associates, Inc.

File Name : 1_Longhill Rd. and Centerville Rd. PM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Truck

	Centerville Rd. Southbound					Longhill Rd. Westbound					Centerville Rd. Northbound					Freedom Park Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	3	4	0	7	0	0	0	0	0	6	3	0	0	9	0	0	0	0	0	16
04:15 PM	0	4	4	0	8	3	0	2	0	5	0	7	0	0	7	0	0	0	0	0	20
04:30 PM	0	3	0	0	3	5	0	0	0	5	0	7	0	0	7	0	0	0	0	0	15
04:45 PM	0	2	3	0	5	3	0	0	0	3	1	1	0	0	2	0	0	0	0	0	10
Total	0	12	11	0	23	11	0	2	0	13	7	18	0	0	25	0	0	0	0	0	61
05:00 PM	0	1	4	0	5	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9
05:15 PM	0	1	0	0	1	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	4
05:30 PM	0	0	1	0	1	2	0	0	0	2	1	1	0	0	2	0	0	0	0	0	5
05:45 PM	0	0	1	0	1	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	3
Total	0	2	6	0	8	7	0	0	0	7	2	4	0	0	6	0	0	0	0	0	21
Grand Total	0	14	17	0	31	18	0	2	0	20	9	22	0	0	31	0	0	0	0	0	82
Apprch %	0	45.2	54.8	0		90	0	10	0		29	71	0	0		0	0	0	0		
Total %	0	17.1	20.7	0	37.8	22	0	2.4	0	24.4	11	26.8	0	0	37.8	0	0	0	0	0	

	Centerville Rd. Southbound				Longhill Rd. Westbound				Centerville Rd. Northbound				Freedom Park Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	3	**4**	7	0	0	0	0	**6**	3	0	**9**	0	0	0	0	16
04:15 PM	0	**4**	4	**8**	3	0	**2**	**5**	0	**7**	0	7	0	0	0	0	**20**
04:30 PM	0	3	0	3	**5**	0	0	5	0	7	0	7	0	0	0	0	15
04:45 PM	0	2	3	5	3	0	0	3	1	1	0	2	0	0	0	0	10
Total Volume	0	12	11	23	11	0	2	13	7	18	0	25	0	0	0	0	61
% App. Total	0	52.2	47.8		84.6	0	15.4		28	72	0		0	0	0		
PHF	.000	.750	.688	.719	.550	.000	.250	.650	.292	.643	.000	.694	.000	.000	.000	.000	.763

Peggy Malone & Associates, Inc.

File Name : 1_Longhill Rd. and Centerville Rd. PM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Combined

	Centerville Rd. Southbound					Longhill Rd. Westbound					Centerville Rd. Northbound					Freedom Park Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	54	64	0	118	53	1	18	1	73	37	53	1	0	91	0	1	1	0	2	284
04:15 PM	0	52	48	0	100	55	0	22	0	77	32	70	0	0	102	0	0	3	0	3	282
04:30 PM	3	42	52	0	97	68	2	22	1	93	23	76	0	0	99	0	2	0	0	2	291
04:45 PM	0	35	71	0	106	50	2	17	1	70	34	56	0	0	90	1	1	0	0	2	268
Total	3	183	235	0	421	226	5	79	3	313	126	255	1	0	382	1	4	4	0	9	1125
05:00 PM	1	55	66	0	122	65	2	21	0	88	27	47	1	0	75	1	3	1	0	5	290
05:15 PM	0	53	80	0	133	54	3	25	0	82	56	54	1	0	111	2	3	2	0	7	333
05:30 PM	0	51	58	0	109	63	0	26	0	89	38	71	1	0	110	0	1	3	0	4	312
05:45 PM	1	40	54	0	95	63	0	16	0	79	34	49	1	0	84	0	3	6	0	9	267
Total	2	199	258	0	459	245	5	88	0	338	155	221	4	0	380	3	10	12	0	25	1202
Grand Total	5	382	493	0	880	471	10	167	3	651	281	476	5	0	762	4	14	16	0	34	2327
Apprch %	0.6	43.4	56	0		72.4	1.5	25.7	0.5		36.9	62.5	0.7	0		11.8	41.2	47.1	0		
Total %	0.2	16.4	21.2	0	37.8	20.2	0.4	7.2	0.1	28	12.1	20.5	0.2	0	32.7	0.2	0.6	0.7	0	1.5	

	Centerville Rd. Southbound				Longhill Rd. Westbound				Centerville Rd. Northbound				Freedom Park Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	35	71	106	50	2	17	69	34	56	0	90	1	1	0	2	267
05:00 PM	**1**	**55**	66	122	**65**	2	21	88	27	47	**1**	75	1	**3**	1	5	290
05:15 PM	0	53	**80**	**133**	54	**3**	25	82	**56**	54	1	**111**	**2**	3	2	**7**	**333**
05:30 PM	0	51	58	109	63	0	**26**	**89**	38	**71**	1	110	0	1	**3**	4	312
Total Volume	1	194	275	470	232	7	89	328	155	228	3	386	4	8	6	18	1202
% App. Total	0.2	41.3	58.5		70.7	2.1	27.1		40.2	59.1	0.8		22.2	44.4	33.3		
PHF	.250	.882	.859	.883	.892	.583	.856	.921	.692	.803	.750	.869	.500	.667	.500	.643	.902

Peggy Malone & Associates, Inc.

File Name : 2_Fords Colony Dr. and Longhill Rd. AM
Site Code : 00003004
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Dominion Village Entrance/Exit Southbound					Longhill Rd. Westbound					Ford's Colony Dr. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	0	0	0	2	21	6	0	29	12	0	5	0	17	3	32	0	0	35	81
06:45 AM	0	0	1	0	1	2	18	10	0	30	14	0	4	0	18	5	51	1	0	57	106
Total	0	0	1	0	1	4	39	16	0	59	26	0	9	0	35	8	83	1	0	92	187
07:00 AM	0	0	0	0	0	1	44	17	0	62	45	0	11	0	56	4	48	1	0	53	171
07:15 AM	1	0	1	0	2	0	41	18	0	59	18	0	15	0	33	9	42	0	0	51	145
07:30 AM	1	0	0	0	1	0	46	16	0	62	28	0	10	0	38	5	49	0	0	54	155
07:45 AM	0	0	1	0	1	1	69	39	0	109	29	0	22	0	51	12	69	1	0	82	243
Total	2	0	2	0	4	2	200	90	0	292	120	0	58	0	178	30	208	2	0	240	714
08:00 AM	0	0	0	0	0	0	42	26	0	68	33	0	12	0	45	11	55	1	0	67	180
08:15 AM	0	0	0	0	0	2	57	25	0	84	28	0	16	0	44	7	65	0	0	72	200
Grand Total	2	0	3	0	5	8	338	157	0	503	207	0	95	0	302	56	411	4	0	471	1281
Apprch %	40	0	60	0		1.6	67.2	31.2	0		68.5	0	31.5	0		11.9	87.3	0.8	0		
Total %	0.2	0	0.2	0	0.4	0.6	26.4	12.3	0	39.3	16.2	0	7.4	0	23.6	4.4	32.1	0.3	0	36.8	

	Dominion Village Entrance/Exit Southbound				Longhill Rd. Westbound				Ford's Colony Dr. Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**1**	0	0	**1**	0	46	16	62	28	0	10	38	5	49	0	54	155
07:45 AM	0	0	**1**	1	1	**69**	**39**	**109**	29	0	**22**	**51**	**12**	**69**	**1**	**82**	**243**
08:00 AM	0	0	0	0	0	42	26	68	**33**	0	12	45	11	55	1	67	180
08:15 AM	0	0	0	0	**2**	57	25	84	28	0	16	44	7	65	0	72	200
Total Volume	1	0	1	2	3	214	106	323	118	0	60	178	35	238	2	275	778
% App. Total	50	0	50		0.9	66.3	32.8		66.3	0	33.7		12.7	86.5	0.7		
PHF	.250	.000	.250	.500	.375	.775	.679	.741	.894	.000	.682	.873	.729	.862	.500	.838	.800

Peggy Malone & Associates, Inc.

File Name : 2_Fords Colony Dr. and Longhill Rd. AM
Site Code : 00003004
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Dominion Village Entrance/Exit Southbound					Longhill Rd. Westbound					Ford's Colony Dr. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
06:45 AM	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	0	7	0	0	7	13
Total	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	7	0	0	7	16
07:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	3	0	0	4	9
07:15 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3	3	0	0	6	8
07:30 AM	0	0	0	0	0	0	6	1	0	7	0	0	1	0	1	0	6	0	0	6	14
07:45 AM	0	0	0	0	0	0	5	1	0	6	1	0	1	0	2	0	4	0	0	4	12
Total	0	0	0	0	0	0	17	3	0	20	1	0	2	0	3	4	16	0	0	20	43
08:00 AM	0	0	0	0	0	0	4	3	0	7	1	0	1	0	2	0	3	0	0	3	12
08:15 AM	0	0	0	0	0	0	10	1	0	11	0	0	1	0	1	1	3	0	0	4	16
Grand Total	0	0	0	0	0	0	39	7	0	46	3	0	4	0	7	5	29	0	0	34	87
Apprch %	0	0	0	0		0	84.8	15.2	0		42.9	0	57.1	0		14.7	85.3	0	0		
Total %	0	0	0	0	0	0	44.8	8	0	52.9	3.4	0	4.6	0	8	5.7	33.3	0	0	39.1	

	Dominion Village Entrance/Exit Southbound				Longhill Rd. Westbound				Ford's Colony Dr. Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	6	1	7	0	0	**1**	1	0	**6**	0	**6**	14
07:45 AM	0	0	0	0	0	5	1	6	**1**	0	1	**2**	0	4	0	4	12
08:00 AM	0	0	0	0	0	4	**3**	7	1	0	1	2	0	3	0	3	12
08:15 AM	0	0	0	0	0	**10**	1	**11**	0	0	1	1	**1**	3	0	4	**16**
Total Volume	0	0	0	0	0	25	6	31	2	0	4	6	1	16	0	17	54
% App. Total	0	0	0		0	80.6	19.4		33.3	0	66.7		5.9	94.1	0		
PHF	.000	.000	.000	.000	.000	.625	.500	.705	.500	.000	1.00	.750	.250	.667	.000	.708	.844

Peggy Malone & Associates, Inc.

File Name : 2_Fords Colony Dr. and Longhill Rd. AM
Site Code : 00003004
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Dominion Village Entrance/Exit Southbound					Longhill Rd. Westbound					Ford's Colony Dr. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	0	0	0	2	24	6	0	32	12	0	5	0	17	3	32	0	0	35	84
06:45 AM	0	0	1	0	1	2	23	10	0	35	15	0	4	0	19	5	58	1	0	64	119
Total	0	0	1	0	1	4	47	16	0	67	27	0	9	0	36	8	90	1	0	99	203
07:00 AM	0	0	0	0	0	1	49	17	0	67	45	0	11	0	56	5	51	1	0	57	180
07:15 AM	1	0	1	0	2	0	42	19	0	61	18	0	15	0	33	12	45	0	0	57	153
07:30 AM	1	0	0	0	1	0	52	17	0	69	28	0	11	0	39	5	55	0	0	60	169
07:45 AM	0	0	1	0	1	1	74	40	0	115	30	0	23	0	53	12	73	1	0	86	255
Total	2	0	2	0	4	2	217	93	0	312	121	0	60	0	181	34	224	2	0	260	757
08:00 AM	0	0	0	0	0	0	46	29	0	75	34	0	13	0	47	11	58	1	0	70	192
08:15 AM	0	0	0	0	0	2	67	26	0	95	28	0	17	0	45	8	68	0	0	76	216
Grand Total	2	0	3	0	5	8	377	164	0	549	210	0	99	0	309	61	440	4	0	505	1368
Apprch %	40	0	60	0		1.5	68.7	29.9	0		68	0	32	0		12.1	87.1	0.8	0		
Total %	0.1	0	0.2	0	0.4	0.6	27.6	12	0	40.1	15.4	0	7.2	0	22.6	4.5	32.2	0.3	0	36.9	

	Dominion Village Entrance/Exit Southbound				Longhill Rd. Westbound				Ford's Colony Dr. Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**1**	0	0	**1**	0	52	17	69	28	0	11	39	5	55	0	60	169
07:45 AM	0	0	**1**	1	1	**74**	**40**	**115**	30	0	**23**	**53**	**12**	**73**	**1**	**86**	**255**
08:00 AM	0	0	0	0	0	46	29	75	**34**	0	13	47	11	58	1	70	192
08:15 AM	0	0	0	0	**2**	67	26	95	28	0	17	45	8	68	0	76	216
Total Volume	1	0	1	2	3	239	112	354	120	0	64	184	36	254	2	292	832
% App. Total	50	0	50		0.8	67.5	31.6		65.2	0	34.8		12.3	87	0.7		
PHF	.250	.000	.250	.500	.375	.807	.700	.770	.882	.000	.696	.868	.750	.870	.500	.849	.816

Peggy Malone & Associates, Inc.

File Name : 2_Fords Colony Dr. and Longhill Rd. PM
Site Code : 00003004
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Dominion Village Entrance/Exit Southbound					Longhill Rd. Westbound					Ford's Colony Dr. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	0	0	0	1	3	46	37	0	86	25	0	4	0	29	11	86	0	0	97	213
04:15 PM	0	0	3	0	3	1	58	37	0	96	29	0	8	0	37	12	82	0	0	94	230
04:30 PM	1	0	0	0	1	0	93	37	0	130	41	0	6	0	47	16	80	0	0	96	274
04:45 PM	0	0	1	0	1	0	83	39	0	122	38	0	10	0	48	10	86	1	0	97	268
Total	2	0	4	0	6	4	280	150	0	434	133	0	28	0	161	49	334	1	0	384	985
05:00 PM	1	0	4	0	5	1	77	33	0	111	25	0	6	0	31	13	85	0	0	98	245
05:15 PM	1	0	0	0	1	0	86	34	0	120	33	0	8	0	41	8	117	0	0	125	287
05:30 PM	0	0	0	0	0	0	75	37	0	112	39	0	10	0	49	11	97	0	0	108	269
05:45 PM	1	0	0	0	1	2	80	45	0	127	29	0	12	0	41	8	88	1	0	97	266
Total	3	0	4	0	7	3	318	149	0	470	126	0	36	0	162	40	387	1	0	428	1067
Grand Total	5	0	8	0	13	7	598	299	0	904	259	0	64	0	323	89	721	2	0	812	2052
Apprch %	38.5	0	61.5	0		0.8	66.2	33.1	0		80.2	0	19.8	0		11	88.8	0.2	0		
Total %	0.2	0	0.4	0	0.6	0.3	29.1	14.6	0	44.1	12.6	0	3.1	0	15.7	4.3	35.1	0.1	0	39.6	

	Dominion Village Entrance/Exit Southbound				Longhill Rd. Westbound				Ford's Colony Dr. Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	0	0	1	0	**93**	37	**130**	**41**	0	6	47	**16**	80	0	96	274
04:45 PM	0	0	1	1	0	83	**39**	122	38	0	**10**	**48**	10	86	**1**	97	268
05:00 PM	1	0	**4**	**5**	**1**	77	33	111	25	0	6	31	13	85	0	98	245
05:15 PM	1	0	0	1	0	86	34	120	33	0	8	41	8	**117**	0	**125**	**287**
Total Volume	3	0	5	8	1	339	143	483	137	0	30	167	47	368	1	416	1074
% App. Total	37.5	0	62.5		0.2	70.2	29.6		82	0	18		11.3	88.5	0.2		
PHF	.750	.000	.313	.400	.250	.911	.917	.929	.835	.000	.750	.870	.734	.786	.250	.832	.936

Peggy Malone & Associates, Inc.

File Name : 2_Fords Colony Dr. and Longhill Rd. PM
Site Code : 00003004
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Dominion Village Entrance/Exit Southbound					Longhill Rd. Westbound					Ford's Colony Dr. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	0	9	0	0	9	12
04:15 PM	0	0	0	0	0	0	5	3	0	8	0	0	0	0	0	0	5	0	0	5	13
04:30 PM	0	0	0	0	0	0	2	1	0	3	1	0	0	0	1	0	1	0	0	1	5
04:45 PM	0	0	0	0	0	0	2	2	0	4	1	0	2	0	3	0	3	0	0	3	10
Total	0	0	0	0	0	0	10	6	0	16	3	0	3	0	6	0	18	0	0	18	40
05:00 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	0	7	1	0	8	0	0	0	0	0	0	5	0	0	5	13
Grand Total	0	0	0	0	0	0	17	7	0	24	3	0	3	0	6	0	23	0	0	23	53
Apprch %	0	0	0	0		0	70.8	29.2	0		50	0	50	0		0	100	0	0		
Total %	0	0	0	0	0	0	32.1	13.2	0	45.3	5.7	0	5.7	0	11.3	0	43.4	0	0	43.4	

	Dominion Village Entrance/Exit Southbound				Longhill Rd. Westbound				Ford's Colony Dr. Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	1	0	1	**1**	0	1	2	0	**9**	0	**9**	12
04:15 PM	0	0	0	0	0	**5**	**3**	**8**	0	0	0	0	0	5	0	5	**13**
04:30 PM	0	0	0	0	0	2	1	3	1	0	0	1	0	1	0	1	5
04:45 PM	0	0	0	0	0	2	2	4	1	0	**2**	**3**	0	3	0	3	10
Total Volume	0	0	0	0	0	10	6	16	3	0	3	6	0	18	0	18	40
% App. Total	0	0	0		0	62.5	37.5		50	0	50		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.500	.500	.750	.000	.375	.500	.000	.500	.000	.500	.769

Peggy Malone & Associates, Inc.

File Name : 2_Fords Colony Dr. and Longhill Rd. PM
Site Code : 00003004
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Dominion Village Entrance/Exit Southbound					Longhill Rd. Westbound					Ford's Colony Dr. Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	0	0	0	1	3	47	37	0	87	26	0	5	0	31	11	95	0	0	106	225
04:15 PM	0	0	3	0	3	1	63	40	0	104	29	0	8	0	37	12	87	0	0	99	243
04:30 PM	1	0	0	0	1	0	95	38	0	133	42	0	6	0	48	16	81	0	0	97	279
04:45 PM	0	0	1	0	1	0	85	41	0	126	39	0	12	0	51	10	89	1	0	100	278
Total	2	0	4	0	6	4	290	156	0	450	136	0	31	0	167	49	352	1	0	402	1025
05:00 PM	1	0	4	0	5	1	81	33	0	115	25	0	6	0	31	13	88	0	0	101	252
05:15 PM	1	0	0	0	1	0	88	34	0	122	33	0	8	0	41	8	117	0	0	125	289
05:30 PM	0	0	0	0	0	0	76	37	0	113	39	0	10	0	49	11	97	0	0	108	270
05:45 PM	1	0	0	0	1	2	80	46	0	128	29	0	12	0	41	8	90	1	0	99	269
Total	3	0	4	0	7	3	325	150	0	478	126	0	36	0	162	40	392	1	0	433	1080
Grand Total	5	0	8	0	13	7	615	306	0	928	262	0	67	0	329	89	744	2	0	835	2105
Apprch %	38.5	0	61.5	0		0.8	66.3	33	0		79.6	0	20.4	0		10.7	89.1	0.2	0		
Total %	0.2	0	0.4	0	0.6	0.3	29.2	14.5	0	44.1	12.4	0	3.2	0	15.6	4.2	35.3	0.1	0	39.7	

	Dominion Village Entrance/Exit Southbound				Longhill Rd. Westbound				Ford's Colony Dr. Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**1**	0	0	1	0	**95**	38	**133**	**42**	0	6	48	**16**	81	0	97	279
04:45 PM	0	0	1	1	0	85	**41**	126	39	0	**12**	**51**	10	89	**1**	100	278
05:00 PM	1	0	**4**	**5**	**1**	81	33	115	25	0	6	31	13	88	0	101	252
05:15 PM	1	0	0	1	0	88	34	122	33	0	8	41	8	**117**	0	**125**	**289**
Total Volume	3	0	5	8	1	349	146	496	139	0	32	171	47	375	1	423	1098
% App. Total	37.5	0	62.5		0.2	70.4	29.4		81.3	0	18.7		11.1	88.7	0.2		
PHF	.750	.000	.313	.400	.250	.918	.890	.932	.827	.000	.667	.838	.734	.801	.250	.846	.950

Peggy Malone & Associates, Inc.

File Name : 3_Lafayette HS and Longhill Rd. AM
Site Code : 00005802
Start Date : 6/4/2013
Page No : 1

Groups Printed- Vehicles

	Lafayette High School Southbound					Longhill Rd. Westbound					Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	3	0	3	20	43	0	0	63	0	0	0	0	0	0	46	2	0	48	114
06:45 AM	1	0	20	0	21	56	40	0	0	96	0	0	0	0	0	0	60	19	1	80	197
Total	1	0	23	0	24	76	83	0	0	159	0	0	0	0	0	0	106	21	1	128	311
07:00 AM	26	0	35	1	62	171	35	0	0	206	0	0	0	0	0	0	70	66	0	136	404
07:15 AM	25	0	50	0	75	51	67	0	0	118	0	0	0	0	0	0	69	14	0	83	276
07:30 AM	3	0	0	2	5	6	78	0	0	84	0	0	0	0	0	0	75	7	0	82	171
07:45 AM	3	0	5	1	9	9	119	0	0	128	0	0	0	0	0	0	126	8	2	136	273
Total	57	0	90	4	151	237	299	0	0	536	0	0	0	0	0	0	340	95	2	437	1124
08:00 AM	4	0	6	0	10	12	84	0	0	96	0	0	0	0	0	0	109	6	0	115	221
08:15 AM	0	0	5	2	7	10	80	0	0	90	0	0	0	0	0	0	82	0	0	82	179
Grand Total	62	0	124	6	192	335	546	0	0	881	0	0	0	0	0	0	637	122	3	762	1835
Apprch %	32.3	0	64.6	3.1		38	62	0	0		0	0	0	0		0	83.6	16	0.4		
Total %	3.4	0	6.8	0.3	10.5	18.3	29.8	0	0	48	0	0	0	0	0	0	34.7	6.6	0.2	41.5	

	Lafayette High School Southbound				Longhill Rd. Westbound				Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**26**	0	35	61	**171**	35	0	**206**	0	0	0	0	0	70	**66**	**136**	**403**
07:15 AM	25	0	**50**	**75**	51	67	0	118	0	0	0	0	0	69	14	83	276
07:30 AM	3	0	0	3	6	78	0	84	0	0	0	0	0	75	7	82	169
07:45 AM	3	0	5	8	9	**119**	0	128	0	0	0	0	0	**126**	8	134	270
Total Volume	57	0	90	147	237	299	0	536	0	0	0	0	0	340	95	435	1118
% App. Total	38.8	0	61.2		44.2	55.8	0		0	0	0		0	78.2	21.8		
PHF	.548	.000	.450	.490	.346	.628	.000	.650	.000	.000	.000	.000	.000	.675	.360	.800	.694

Peggy Malone & Associates, Inc.

File Name : 3_Lafayette HS and Longhill Rd. AM
Site Code : 00005802
Start Date : 6/4/2013
Page No : 1

Groups Printed- Trucks

	Lafayette High School Southbound					Longhill Rd. Westbound					Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	5
06:45 AM	1	0	1	0	2	1	21	0	0	22	0	0	0	0	0	0	5	0	0	5	29
Total	2	0	2	0	4	1	23	0	0	24	0	0	0	0	0	0	6	0	0	6	34
07:00 AM	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	0	13	2	0	15	19
07:15 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
07:30 AM	1	0	2	0	3	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	11
07:45 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	8
Total	1	0	5	0	6	1	15	0	0	16	0	0	0	0	0	0	20	2	0	22	44
08:00 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
08:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Grand Total	3	0	7	0	10	2	48	0	0	50	0	0	0	0	0	0	28	2	0	30	90
Apprch %	30	0	70	0		4	96	0	0		0	0	0	0		0	93.3	6.7	0		
Total %	3.3	0	7.8	0	11.1	2.2	53.3	0	0	55.6	0	0	0	0	0	0	31.1	2.2	0	33.3	

	Lafayette High School Southbound				Longhill Rd. Westbound				Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:45 AM																	
06:45 AM	**1**	0	1	2	**1**	**21**	0	**22**	0	0	0	0	0	5	0	5	**29**
07:00 AM	0	0	**2**	2	1	1	0	2	0	0	0	0	0	**13**	**2**	**15**	19
07:15 AM	0	0	1	1	0	2	0	2	0	0	0	0	0	3	0	3	6
07:30 AM	1	0	2	**3**	0	6	0	6	0	0	0	0	0	2	0	2	11
Total Volume	2	0	6	8	2	30	0	32	0	0	0	0	0	23	2	25	65
% App. Total	25	0	75		6.2	93.8	0		0	0	0		0	92	8		
PHF	.500	.000	.750	.667	.500	.357	.000	.364	.000	.000	.000	.000	.000	.442	.250	.417	.560

Peggy Malone & Associates, Inc.

File Name : 3_Lafayette HS and Longhill Rd. AM
Site Code : 00005802
Start Date : 6/4/2013
Page No : 1

Groups Printed- Combined

	Lafayette High School Southbound					Longhill Rd. Westbound					Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	1	0	4	0	5	20	45	0	0	65	0	0	0	0	0	0	47	2	0	49	119
06:45 AM	2	0	21	0	23	57	61	0	0	118	0	0	0	0	0	0	65	19	1	85	226
Total	3	0	25	0	28	77	106	0	0	183	0	0	0	0	0	0	112	21	1	134	345
07:00 AM	26	0	37	1	64	172	36	0	0	208	0	0	0	0	0	0	83	68	0	151	423
07:15 AM	25	0	51	0	76	51	69	0	0	120	0	0	0	0	0	0	72	14	0	86	282
07:30 AM	4	0	2	2	8	6	84	0	0	90	0	0	0	0	0	0	77	7	0	84	182
07:45 AM	3	0	5	1	9	9	125	0	0	134	0	0	0	0	0	0	128	8	2	138	281
Total	58	0	95	4	157	238	314	0	0	552	0	0	0	0	0	0	360	97	2	459	1168
08:00 AM	4	0	6	0	10	12	88	0	0	100	0	0	0	0	0	0	111	6	0	117	227
08:15 AM	0	0	5	2	7	10	86	0	0	96	0	0	0	0	0	0	82	0	0	82	185
Grand Total	65	0	131	6	202	337	594	0	0	931	0	0	0	0	0	0	665	124	3	792	1925
Apprch %	32.2	0	64.9	3		36.2	63.8	0	0		0	0	0	0		0	84	15.7	0.4		
Total %	3.4	0	6.8	0.3	10.5	17.5	30.9	0	0	48.4	0	0	0	0	0	0	34.5	6.4	0.2	41.1	

	Lafayette High School Southbound				Longhill Rd. Westbound				Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	**26**	0	37	63	**172**	36	0	**208**	0	0	0	0	0	83	**68**	**151**	**422**
07:15 AM	25	0	**51**	**76**	51	69	0	120	0	0	0	0	0	72	14	86	282
07:30 AM	4	0	2	6	6	84	0	90	0	0	0	0	0	77	7	84	180
07:45 AM	3	0	5	8	9	**125**	0	134	0	0	0	0	0	**128**	8	136	278
Total Volume	58	0	95	153	238	314	0	552	0	0	0	0	0	360	97	457	1162
% App. Total	37.9	0	62.1		43.1	56.9	0		0	0	0		0	78.8	21.2		
PHF	.558	.000	.466	.503	.346	.628	.000	.663	.000	.000	.000	.000	.000	.703	.357	.757	.688

Peggy Malone & Associates, Inc.

File Name : 3_Lafayette HS and Longhill Rd. PM
Site Code : 00005802
Start Date : 6/4/2013
Page No : 1

Groups Printed- Vehicles

	Lafayette High School Southbound					Longhill Rd. Westbound					Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	9	0	8	0	17	5	132	0	0	137	0	0	0	0	0	0	141	3	0	144	298
04:15 PM	9	0	11	1	21	12	143	0	0	155	0	0	0	0	0	0	103	2	0	105	281
04:30 PM	4	0	13	0	17	7	124	0	0	131	0	0	0	0	0	0	99	4	0	103	251
04:45 PM	8	0	24	0	32	28	142	0	4	174	0	0	0	0	0	0	108	5	0	113	319
Total	30	0	56	1	87	52	541	0	4	597	0	0	0	0	0	0	451	14	0	465	1149
05:00 PM	3	0	9	2	14	7	161	0	0	168	0	0	0	0	0	0	116	1	0	117	299
05:15 PM	4	0	8	0	12	20	204	0	0	224	0	0	0	0	0	0	113	14	0	127	363
05:30 PM	15	0	22	0	37	17	183	0	0	200	0	0	0	0	0	0	145	4	0	149	386
05:45 PM	12	0	17	4	33	18	146	0	0	164	0	0	0	0	0	0	101	3	0	104	301
Total	34	0	56	6	96	62	694	0	0	756	0	0	0	0	0	0	475	22	0	497	1349
Grand Total	64	0	112	7	183	114	1235	0	4	1353	0	0	0	0	0	0	926	36	0	962	2498
Apprch %	35	0	61.2	3.8		8.4	91.3	0	0.3		0	0	0	0		0	96.3	3.7	0		
Total %	2.6	0	4.5	0.3	7.3	4.6	49.4	0	0.2	54.2	0	0	0	0	0	0	37.1	1.4	0	38.5	

	Lafayette High School Southbound				Longhill Rd. Westbound				Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	8	0	**24**	32	**28**	142	0	170	0	0	0	0	0	108	5	113	315
05:00 PM	3	0	9	12	7	161	0	168	0	0	0	0	0	116	1	117	297
05:15 PM	4	0	8	12	20	**204**	0	**224**	0	0	0	0	0	113	**14**	127	363
05:30 PM	**15**	0	22	**37**	17	183	0	200	0	0	0	0	0	**145**	4	**149**	**386**
Total Volume	30	0	63	93	72	690	0	762	0	0	0	0	0	482	24	506	1361
% App. Total	32.3	0	67.7		9.4	90.6	0		0	0	0		0	95.3	4.7		
PHF	.500	.000	.656	.628	.643	.846	.000	.850	.000	.000	.000	.000	.000	.831	.429	.849	.881

Peggy Malone & Associates, Inc.

File Name : 3_Lafayette HS and Longhill Rd. PM
Site Code : 00005802
Start Date : 6/4/2013
Page No : 1

Groups Printed- Trucks

	Lafayette High School Southbound					Longhill Rd. Westbound					Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	6	0	0	6	9
04:15 PM	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	3	1	0	4	9
04:30 PM	0	0	0	0	0	5	2	0	0	7	0	0	0	0	0	0	2	0	0	2	9
04:45 PM	0	0	3	0	3	1	2	0	0	3	0	0	0	0	0	0	3	0	0	3	9
Total	0	0	3	0	3	9	9	0	0	18	0	0	0	0	0	0	14	1	0	15	36
05:00 PM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2	5
05:15 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
Total	1	0	0	0	1	2	6	0	0	8	0	0	0	0	0	0	3	2	0	5	14
Grand Total	1	0	3	0	4	11	15	0	0	26	0	0	0	0	0	0	17	3	0	20	50
Apprch %	25	0	75	0		42.3	57.7	0	0		0	0	0	0		0	85	15	0		
Total %	2	0	6	0	8	22	30	0	0	52	0	0	0	0	0	0	34	6	0	40	

	Lafayette High School Southbound				Longhill Rd. Westbound				Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	**6**	0	**6**	**9**
04:15 PM	0	0	0	0	2	**3**	0	5	0	0	0	0	0	3	**1**	4	9
04:30 PM	0	0	0	0	**5**	2	0	**7**	0	0	0	0	0	2	0	2	9
04:45 PM	0	0	**3**	**3**	1	2	0	3	0	0	0	0	0	3	0	3	9
Total Volume	0	0	3	3	9	9	0	18	0	0	0	0	0	14	1	15	36
% App. Total	0	0	100		50	50	0		0	0	0		0	93.3	6.7		
PHF	.000	.000	.250	.250	.450	.750	.000	.643	.000	.000	.000	.000	.000	.583	.250	.625	1.00

Peggy Malone & Associates, Inc.

File Name : 3_Lafayette HS and Longhill Rd. PM
Site Code : 00005802
Start Date : 6/4/2013
Page No : 1

Groups Printed- Combined

	Lafayette High School Southbound					Longhill Rd. Westbound					Northbound					Longhill Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	9	0	8	0	17	6	134	0	0	140	0	0	0	0	0	0	147	3	0	150	307
04:15 PM	9	0	11	1	21	14	146	0	0	160	0	0	0	0	0	0	106	3	0	109	290
04:30 PM	4	0	13	0	17	12	126	0	0	138	0	0	0	0	0	0	101	4	0	105	260
04:45 PM	8	0	27	0	35	29	144	0	4	177	0	0	0	0	0	0	111	5	0	116	328
Total	30	0	59	1	90	61	550	0	4	615	0	0	0	0	0	0	465	15	0	480	1185
05:00 PM	4	0	9	2	15	8	162	0	0	170	0	0	0	0	0	0	117	2	0	119	304
05:15 PM	4	0	8	0	12	21	205	0	0	226	0	0	0	0	0	0	114	14	0	128	366
05:30 PM	15	0	22	0	37	17	183	0	0	200	0	0	0	0	0	0	145	5	0	150	387
05:45 PM	12	0	17	4	33	18	150	0	0	168	0	0	0	0	0	0	102	3	0	105	306
Total	35	0	56	6	97	64	700	0	0	764	0	0	0	0	0	0	478	24	0	502	1363
Grand Total	65	0	115	7	187	125	1250	0	4	1379	0	0	0	0	0	0	943	39	0	982	2548
Apprch %	34.8	0	61.5	3.7		9.1	90.6	0	0.3		0	0	0	0		0	96	4	0		
Total %	2.6	0	4.5	0.3	7.3	4.9	49.1	0	0.2	54.1	0	0	0	0	0	0	37	1.5	0	38.5	

	Lafayette High School Southbound				Longhill Rd. Westbound				Northbound				Longhill Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	8	0	**27**	35	**29**	144	0	173	0	0	0	0	0	111	5	116	324
05:00 PM	4	0	9	13	8	162	0	170	0	0	0	0	0	117	2	119	302
05:15 PM	4	0	8	12	21	**205**	0	**226**	0	0	0	0	0	114	**14**	128	366
05:30 PM	**15**	0	22	**37**	17	183	0	200	0	0	0	0	0	**145**	5	**150**	**387**
Total Volume	31	0	66	97	75	694	0	769	0	0	0	0	0	487	26	513	1379
% App. Total	32	0	68		9.8	90.2	0		0	0	0		0	94.9	5.1		
PHF	.517	.000	.611	.655	.647	.846	.000	.851	.000	.000	.000	.000	.000	.840	.464	.855	.891

Peggy Malone & Associates, Inc.

File Name : 4_Longhill Rd. and Seasons Trace AM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Car

	Season's Trace Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	10	24	0	34	2	36	0	38	37	0	0	37	109
06:45 AM	9	30	1	40	3	97	0	100	68	0	0	68	208
Total	19	54	1	74	5	133	0	138	105	0	0	105	317
07:00 AM	18	20	3	41	6	228	0	234	100	5	0	105	380
07:15 AM	4	24	2	30	5	85	0	90	99	3	0	102	222
07:30 AM	13	35	0	48	5	80	0	85	95	1	0	96	229
07:45 AM	20	35	0	55	1	90	0	91	133	4	0	137	283
Total	55	114	5	174	17	483	0	500	427	13	0	440	1114
08:00 AM	4	31	0	35	6	90	0	96	100	4	0	104	235
08:15 AM	19	41	2	62	7	72	0	79	88	4	0	92	233
Grand Total	97	240	8	345	35	778	0	813	720	21	0	741	1899
Apprch %	28.1	69.6	2.3		4.3	95.7	0		97.2	2.8	0		
Total %	5.1	12.6	0.4	18.2	1.8	41	0	42.8	37.9	1.1	0	39	

	Season's Trace Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	18	20	38	**6**	**228**	**234**	100	**5**	105	**377**
07:15 AM	4	24	28	5	85	90	99	3	102	220
07:30 AM	13	**35**	48	5	80	85	95	1	96	229
07:45 AM	**20**	35	**55**	1	90	91	**133**	4	**137**	283
Total Volume	55	114	169	17	483	500	427	13	440	1109
% App. Total	32.5	67.5		3.4	96.6		97	3		
PHF	.688	.814	.768	.708	.530	.534	.803	.650	.803	.735

Peggy Malone & Associates, Inc.

File Name : 4_Longhill Rd. and Seasons Trace AM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Truck

	Season's Trace Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	0	0	0	5	0	5	0	0	0	0	5
06:45 AM	1	0	0	1	1	18	0	19	9	0	0	9	29
Total	1	0	0	1	1	23	0	24	9	0	0	9	34
07:00 AM	0	0	0	0	0	3	0	3	14	0	0	14	17
07:15 AM	0	0	0	0	0	2	0	2	5	0	0	5	7
07:30 AM	2	0	0	2	1	2	0	3	5	2	0	7	12
07:45 AM	0	1	0	1	1	4	0	5	5	0	0	5	11
Total	2	1	0	3	2	11	0	13	29	2	0	31	47
08:00 AM	2	0	0	2	0	7	0	7	0	1	0	1	10
08:15 AM	0	0	0	0	0	6	0	6	2	0	0	2	8
Grand Total	5	1	0	6	3	47	0	50	40	3	0	43	99
Apprch %	83.3	16.7	0		6	94	0		93	7	0		
Total %	5.1	1	0	6.1	3	47.5	0	50.5	40.4	3	0	43.4	

	Season's Trace Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:45 AM										
06:45 AM	1	0	1	**1**	**18**	**19**	9	0	9	**29**
07:00 AM	0	0	0	0	3	3	**14**	0	**14**	17
07:15 AM	0	0	0	0	2	2	5	0	5	7
07:30 AM	**2**	0	**2**	1	2	3	5	**2**	7	12
Total Volume	3	0	3	2	25	27	33	2	35	65
% App. Total	100	0		7.4	92.6		94.3	5.7		
PHF	.375	.000	.375	.500	.347	.355	.589	.250	.625	.560

Peggy Malone & Associates, Inc.

File Name : 4_Longhill Rd. and Seasons Trace AM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Combined

	Season's Trace Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	10	24	0	34	2	41	0	43	37	0	0	37	114
06:45 AM	10	30	1	41	4	115	0	119	77	0	0	77	237
Total	20	54	1	75	6	156	0	162	114	0	0	114	351
07:00 AM	18	20	3	41	6	231	0	237	114	5	0	119	397
07:15 AM	4	24	2	30	5	87	0	92	104	3	0	107	229
07:30 AM	15	35	0	50	6	82	0	88	100	3	0	103	241
07:45 AM	20	36	0	56	2	94	0	96	138	4	0	142	294
Total	57	115	5	177	19	494	0	513	456	15	0	471	1161
08:00 AM	6	31	0	37	6	97	0	103	100	5	0	105	245
08:15 AM	19	41	2	62	7	78	0	85	90	4	0	94	241
Grand Total	102	241	8	351	38	825	0	863	760	24	0	784	1998
Apprch %	29.1	68.7	2.3		4.4	95.6	0		96.9	3.1	0		
Total %	5.1	12.1	0.4	17.6	1.9	41.3	0	43.2	38	1.2	0	39.2	

	Season's Trace Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	18	20	38	**6**	**231**	**237**	114	**5**	119	**394**
07:15 AM	4	24	28	5	87	92	104	3	107	227
07:30 AM	15	35	50	6	82	88	100	3	103	241
07:45 AM	**20**	**36**	**56**	2	94	96	**138**	4	**142**	294
Total Volume	57	115	172	19	494	513	456	15	471	1156
% App. Total	33.1	66.9		3.7	96.3		96.8	3.2		
PHF	.713	.799	.768	.792	.535	.541	.826	.750	.829	.734

Peggy Malone & Associates, Inc.

File Name : 4_Longhill Rd. and Seasons Trace PM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Car

	Season's Trace Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	15	0	19	29	151	0	180	110	9	0	119	318
04:15 PM	6	19	0	25	30	150	0	180	129	7	0	136	341
04:30 PM	8	12	2	22	33	167	0	200	104	8	0	112	334
04:45 PM	7	21	2	30	26	166	0	192	139	8	0	147	369
Total	25	67	4	96	118	634	0	752	482	32	0	514	1362
05:00 PM	5	13	0	18	33	173	0	206	101	11	0	112	336
05:15 PM	9	18	1	28	41	227	0	268	128	9	0	137	433
05:30 PM	10	17	1	28	38	196	0	234	128	10	0	138	400
05:45 PM	3	22	0	25	28	178	0	206	128	7	0	135	366
Total	27	70	2	99	140	774	0	914	485	37	0	522	1535
Grand Total	52	137	6	195	258	1408	0	1666	967	69	0	1036	2897
Apprch %	26.7	70.3	3.1		15.5	84.5	0		93.3	6.7	0		
Total %	1.8	4.7	0.2	6.7	8.9	48.6	0	57.5	33.4	2.4	0	35.8	

	Season's Trace Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	7	**21**	**28**	26	166	192	**139**	8	**147**	367
05:00 PM	5	13	18	33	173	206	101	**11**	112	336
05:15 PM	9	18	27	**41**	**227**	**268**	128	9	137	**432**
05:30 PM	**10**	17	27	38	196	234	128	10	138	399
Total Volume	31	69	100	138	762	900	496	38	534	1534
% App. Total	31	69		15.3	84.7		92.9	7.1		
PHF	.775	.821	.893	.841	.839	.840	.892	.864	.908	.888

Peggy Malone & Associates, Inc.

File Name : 4_Longhill Rd. and Seasons Trace PM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Truck

	Season's Trace Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	5	0	0	5	5
04:15 PM	0	1	0	1	0	9	0	9	3	1	0	4	14
04:30 PM	0	0	0	0	0	8	0	8	2	0	0	2	10
04:45 PM	0	0	0	0	0	3	0	3	6	0	0	6	9
Total	0	1	0	1	0	20	0	20	16	1	0	17	38
05:00 PM	0	0	0	0	0	8	0	8	4	0	0	4	12
05:15 PM	0	1	0	1	0	1	0	1	1	0	0	1	3
05:30 PM	0	0	0	0	0	4	0	4	0	0	0	0	4
05:45 PM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	0	1	0	1	0	14	0	14	7	0	0	7	22
Grand Total	0	2	0	2	0	34	0	34	23	1	0	24	60
Apprch %	0	100	0		0	100	0		95.8	4.2	0		
Total %	0	3.3	0	3.3	0	56.7	0	56.7	38.3	1.7	0	40	

	Season's Trace Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	**1**	**1**	0	**9**	**9**	3	**1**	4	**14**
04:30 PM	0	0	0	0	8	8	2	0	2	10
04:45 PM	0	0	0	0	3	3	**6**	0	**6**	9
05:00 PM	0	0	0	0	8	8	4	0	4	12
Total Volume	0	1	1	0	28	28	15	1	16	45
% App. Total	0	100		0	100		93.8	6.2		
PHF	.000	.250	.250	.000	.778	.778	.625	.250	.667	.804

Peggy Malone & Associates, Inc.

File Name : 4_Longhill Rd. and Seasons Trace PM
Site Code :
Start Date : 5/30/2013
Page No : 1

Groups Printed- Combined

	Season's Trace Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	15	0	19	29	151	0	180	115	9	0	124	323
04:15 PM	6	20	0	26	30	159	0	189	132	8	0	140	355
04:30 PM	8	12	2	22	33	175	0	208	106	8	0	114	344
04:45 PM	7	21	2	30	26	169	0	195	145	8	0	153	378
Total	25	68	4	97	118	654	0	772	498	33	0	531	1400
05:00 PM	5	13	0	18	33	181	0	214	105	11	0	116	348
05:15 PM	9	19	1	29	41	228	0	269	129	9	0	138	436
05:30 PM	10	17	1	28	38	200	0	238	128	10	0	138	404
05:45 PM	3	22	0	25	28	179	0	207	130	7	0	137	369
Total	27	71	2	100	140	788	0	928	492	37	0	529	1557
Grand Total	52	139	6	197	258	1442	0	1700	990	70	0	1060	2957
Apprch %	26.4	70.6	3		15.2	84.8	0		93.4	6.6	0		
Total %	1.8	4.7	0.2	6.7	8.7	48.8	0	57.5	33.5	2.4	0	35.8	

	Season's Trace Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	7	**21**	**28**	26	169	195	**145**	8	**153**	376
05:00 PM	5	13	18	33	181	214	105	**11**	116	348
05:15 PM	9	19	28	**41**	**228**	**269**	129	9	138	**435**
05:30 PM	**10**	17	27	38	200	238	128	10	138	403
Total Volume	31	70	101	138	778	916	507	38	545	1562
% App. Total	30.7	69.3		15.1	84.9		93	7		
PHF	.775	.833	.902	.841	.853	.851	.874	.864	.891	.898

Peggy Malone & Associates, Inc.

File Name : 5_Longhill Rd. and Sheffield Rd. AM
Site Code : 00002960
Start Date : 6/4/2013
Page No : 1

Groups Printed- Car

	Longhill Rd. Southbound				Longhill Rd. Northbound				Sheffield Rd. Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
06:30 AM	0	80	0	80	55	1	0	56	3	1	0	4	140
06:45 AM	0	101	0	101	91	3	0	94	5	3	0	8	203
Total	0	181	0	181	146	4	0	150	8	4	0	12	343
07:00 AM	1	122	0	123	233	1	0	234	7	10	0	17	374
07:15 AM	1	145	0	146	82	0	0	82	5	1	0	6	234
07:30 AM	1	123	0	124	82	2	0	84	8	1	0	9	217
07:45 AM	1	162	0	163	101	3	0	104	6	1	0	7	274
Total	4	552	0	556	498	6	0	504	26	13	0	39	1099
08:00 AM	1	142	0	143	88	3	0	91	11	3	0	14	248
08:15 AM	0	120	0	120	78	4	0	82	6	4	0	10	212
Grand Total	5	995	0	1000	810	17	0	827	51	24	0	75	1902
Apprch %	0.5	99.5	0		97.9	2.1	0		68	32	0		
Total %	0.3	52.3	0	52.6	42.6	0.9	0	43.5	2.7	1.3	0	3.9	

	Longhill Rd. Southbound			Longhill Rd. Northbound			Sheffield Rd. Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**1**	122	123	**233**	1	**234**	7	**10**	**17**	**374**
07:15 AM	1	145	146	82	0	82	5	1	6	234
07:30 AM	1	123	124	82	2	84	**8**	1	9	217
07:45 AM	1	**162**	**163**	101	**3**	104	6	1	7	274
Total Volume	4	552	556	498	6	504	26	13	39	1099
% App. Total	0.7	99.3		98.8	1.2		66.7	33.3		
PHF	1.00	.852	.853	.534	.500	.538	.813	.325	.574	.735

Peggy Malone & Associates, Inc.

File Name : 5_Longhill Rd. and Sheffield Rd. AM
Site Code : 00002960
Start Date : 6/4/2013
Page No : 1

Groups Printed- Truck

	Longhill Rd. Southbound				Longhill Rd. Northbound				Sheffield Rd. Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
06:30 AM	0	1	0	1	2	1	0	3	0	0	0	0	4
06:45 AM	0	5	0	5	22	0	0	22	0	0	0	0	27
Total	0	6	0	6	24	1	0	25	0	0	0	0	31
07:00 AM	0	14	0	14	3	0	0	3	0	0	0	0	17
07:15 AM	0	4	0	4	4	0	0	4	0	0	0	0	8
07:30 AM	1	2	0	3	5	1	0	6	0	0	0	0	9
07:45 AM	0	3	0	3	7	0	0	7	0	0	0	0	10
Total	1	23	0	24	19	1	0	20	0	0	0	0	44
08:00 AM	0	2	0	2	5	0	0	5	0	0	0	0	7
08:15 AM	0	0	0	0	9	0	0	9	0	0	0	0	9
Grand Total	1	31	0	32	57	2	0	59	0	0	0	0	91
Apprch %	3.1	96.9	0		96.6	3.4	0		0	0	0		
Total %	1.1	34.1	0	35.2	62.6	2.2	0	64.8	0	0	0	0	

	Longhill Rd. Southbound			Longhill Rd. Northbound			Sheffield Rd. Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:45 AM										
06:45 AM	0	5	5	**22**	0	**22**	0	0	0	**27**
07:00 AM	0	**14**	**14**	3	0	3	0	0	0	17
07:15 AM	0	4	4	4	0	4	0	0	0	8
07:30 AM	**1**	2	3	5	**1**	6	0	0	0	9
Total Volume	1	25	26	34	1	35	0	0	0	61
% App. Total	3.8	96.2		97.1	2.9		0	0		
PHF	.250	.446	.464	.386	.250	.398	.000	.000	.000	.565

Peggy Malone & Associates, Inc.

File Name : 5_Longhill Rd. and Sheffield Rd. AM
Site Code : 00002960
Start Date : 6/4/2013
Page No : 1

Groups Printed- Combined

	Longhill Rd. Southbound				Longhill Rd. Northbound				Sheffield Rd. Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
06:30 AM	0	81	0	81	57	2	0	59	3	1	0	4	144
06:45 AM	0	106	0	106	113	3	0	116	5	3	0	8	230
Total	0	187	0	187	170	5	0	175	8	4	0	12	374
07:00 AM	1	136	0	137	236	1	0	237	7	10	0	17	391
07:15 AM	1	149	0	150	86	0	0	86	5	1	0	6	242
07:30 AM	2	125	0	127	87	3	0	90	8	1	0	9	226
07:45 AM	1	165	0	166	108	3	0	111	6	1	0	7	284
Total	5	575	0	580	517	7	0	524	26	13	0	39	1143
08:00 AM	1	144	0	145	93	3	0	96	11	3	0	14	255
08:15 AM	0	120	0	120	87	4	0	91	6	4	0	10	221
Grand Total	6	1026	0	1032	867	19	0	886	51	24	0	75	1993
Apprch %	0.6	99.4	0		97.9	2.1	0		68	32	0		
Total %	0.3	51.5	0	51.8	43.5	1	0	44.5	2.6	1.2	0	3.8	

	Longhill Rd. Southbound			Longhill Rd. Northbound			Sheffield Rd. Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	1	136	137	**236**	1	**237**	7	**10**	**17**	**391**
07:15 AM	1	149	150	86	0	86	5	1	6	242
07:30 AM	**2**	125	127	87	**3**	90	**8**	1	9	226
07:45 AM	1	**165**	**166**	108	3	111	6	1	7	284
Total Volume	5	575	580	517	7	524	26	13	39	1143
% App. Total	0.9	99.1		98.7	1.3		66.7	33.3		
PHF	.625	.871	.873	.548	.583	.553	.813	.325	.574	.731

Peggy Malone & Associates, Inc.

File Name : 5-Longhill Rd. and Sheffield Rd. PM
Site Code : 00002960
Start Date : 6/4/2013
Page No : 1

Groups Printed- Car

	Longhill Rd. Southbound				Longhill Rd. Northbound				Sheffield Rd. Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
04:00 PM	6	146	0	152	157	7	0	164	11	2	0	13	329
04:15 PM	4	113	0	117	169	12	0	181	12	3	0	15	313
04:30 PM	3	117	0	120	152	15	0	167	6	2	0	8	295
04:45 PM	1	133	0	134	193	12	0	205	7	5	0	12	351
Total	14	509	0	523	671	46	0	717	36	12	0	48	1288
05:00 PM	5	125	0	130	205	12	0	217	9	4	0	13	360
05:15 PM	3	134	0	137	257	10	0	267	9	5	0	14	418
05:30 PM	7	174	0	181	240	13	0	253	7	2	0	9	443
05:45 PM	2	132	0	134	186	6	0	192	4	2	0	6	332
Total	17	565	0	582	888	41	0	929	29	13	0	42	1553
Grand Total	31	1074	0	1105	1559	87	0	1646	65	25	0	90	2841
Apprch %	2.8	97.2	0		94.7	5.3	0		72.2	27.8	0		
Total %	1.1	37.8	0	38.9	54.9	3.1	0	57.9	2.3	0.9	0	3.2	

	Longhill Rd. Southbound			Longhill Rd. Northbound			Sheffield Rd. Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	1	133	134	193	12	205	7	**5**	12	351
05:00 PM	5	125	130	205	12	217	**9**	4	13	360
05:15 PM	3	134	137	**257**	10	**267**	9	5	**14**	418
05:30 PM	**7**	**174**	**181**	240	**13**	253	7	2	9	**443**
Total Volume	16	566	582	895	47	942	32	16	48	1572
% App. Total	2.7	97.3		95	5		66.7	33.3		
PHF	.571	.813	.804	.871	.904	.882	.889	.800	.857	.887

Peggy Malone & Associates, Inc.

File Name : 5-Longhill Rd. and Sheffield Rd. PM
Site Code : 00002960
Start Date : 6/4/2013
Page No : 1

Groups Printed- Truck

	Longhill Rd. Southbound				Longhill Rd. Northbound				Sheffield Rd. Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
04:00 PM	0	5	0	5	3	0	0	3	0	0	0	0	8
04:15 PM	1	2	0	3	4	0	0	4	1	0	0	1	8
04:30 PM	0	2	0	2	7	0	0	7	0	0	0	0	9
04:45 PM	0	5	0	5	2	1	0	3	1	0	0	1	9
Total	1	14	0	15	16	1	0	17	2	0	0	2	34
05:00 PM	0	1	0	1	1	1	0	2	0	0	0	0	3
05:15 PM	0	1	0	1	3	1	0	4	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
Total	0	4	0	4	7	2	0	9	0	0	0	0	13
Grand Total	1	18	0	19	23	3	0	26	2	0	0	2	47
Apprch %	5.3	94.7	0		88.5	11.5	0		100	0	0		
Total %	2.1	38.3	0	40.4	48.9	6.4	0	55.3	4.3	0	0	4.3	

	Longhill Rd. Southbound			Longhill Rd. Northbound			Sheffield Rd. Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**5**	**5**	3	0	3	0	0	0	8
04:15 PM	**1**	2	3	4	0	4	**1**	0	**1**	8
04:30 PM	0	2	2	**7**	0	**7**	0	0	0	**9**
04:45 PM	0	5	5	2	**1**	3	1	0	1	9
Total Volume	1	14	15	16	1	17	2	0	2	34
% App. Total	6.7	93.3		94.1	5.9		100	0		
PHF	.250	.700	.750	.571	.250	.607	.500	.000	.500	.944

Peggy Malone & Associates, Inc.

File Name : 5-Longhill Rd. and Sheffield Rd. PM
Site Code : 00002960
Start Date : 6/4/2013
Page No : 1

Groups Printed- Combined

	Longhill Rd. Southbound				Longhill Rd. Northbound				Sheffield Rd. Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
04:00 PM	6	151	0	157	160	7	0	167	11	2	0	13	337
04:15 PM	5	115	0	120	173	12	0	185	13	3	0	16	321
04:30 PM	3	119	0	122	159	15	0	174	6	2	0	8	304
04:45 PM	1	138	0	139	195	13	0	208	8	5	0	13	360
Total	15	523	0	538	687	47	0	734	38	12	0	50	1322
05:00 PM	5	126	0	131	206	13	0	219	9	4	0	13	363
05:15 PM	3	135	0	138	260	11	0	271	9	5	0	14	423
05:30 PM	7	174	0	181	240	13	0	253	7	2	0	9	443
05:45 PM	2	134	0	136	189	6	0	195	4	2	0	6	337
Total	17	569	0	586	895	43	0	938	29	13	0	42	1566
Grand Total	32	1092	0	1124	1582	90	0	1672	67	25	0	92	2888
Apprch %	2.8	97.2	0		94.6	5.4	0		72.8	27.2	0		
Total %	1.1	37.8	0	38.9	54.8	3.1	0	57.9	2.3	0.9	0	3.2	

	Longhill Rd. Southbound			Longhill Rd. Northbound			Sheffield Rd. Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	1	138	139	195	**13**	208	8	**5**	13	360
05:00 PM	5	126	131	206	13	219	**9**	4	13	363
05:15 PM	3	135	138	**260**	11	**271**	9	5	**14**	423
05:30 PM	**7**	**174**	**181**	240	13	253	7	2	9	**443**
Total Volume	16	573	589	901	50	951	33	16	49	1589
% App. Total	2.7	97.3		94.7	5.3		67.3	32.7		
PHF	.571	.823	.814	.866	.962	.877	.917	.800	.875	.897

Peggy Malone & Associates, Inc.

File Name : 6_Longhill Rd. and Lafayette Blvd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Lafayette Blvd. Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	7	0	7	4	41	0	45	71	0	0	71	123
06:45 AM	2	7	0	9	4	78	0	82	93	0	0	93	184
Total	2	14	0	16	8	119	0	127	164	0	0	164	307
07:00 AM	2	16	2	20	5	226	0	231	125	2	0	127	378
07:15 AM	1	12	2	15	3	83	0	86	136	1	0	137	238
07:30 AM	4	10	0	14	2	78	0	80	118	3	0	121	215
07:45 AM	1	15	0	16	5	104	0	109	166	2	0	168	293
Total	8	53	4	65	15	491	0	506	545	8	0	553	1124
08:00 AM	2	6	2	10	2	81	0	83	127	2	0	129	222
08:15 AM	2	10	0	12	3	101	0	104	119	4	0	123	239
Grand Total	14	83	6	103	28	792	0	820	955	14	0	969	1892
Apprch %	13.6	80.6	5.8		3.4	96.6	0		98.6	1.4	0		
Total %	0.7	4.4	0.3	5.4	1.5	41.9	0	43.3	50.5	0.7	0	51.2	

	Lafayette Blvd. Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	**16**	**18**	**5**	**226**	**231**	125	2	127	**376**
07:15 AM	1	12	13	3	83	86	136	1	137	236
07:30 AM	**4**	10	14	2	78	80	118	**3**	121	215
07:45 AM	1	15	16	5	104	109	**166**	2	**168**	293
Total Volume	8	53	61	15	491	506	545	8	553	1120
% App. Total	13.1	86.9		3	97		98.6	1.4		
PHF	.500	.828	.847	.750	.543	.548	.821	.667	.823	.745

Peggy Malone & Associates, Inc.

File Name : 6_Longhill Rd. and Lafayette Blvd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Lafayette Blvd. Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	0	0	0	1	0	1	1	0	0	1	2
06:45 AM	3	1	0	4	1	18	0	19	4	0	0	4	27
Total	3	1	0	4	1	19	0	20	5	0	0	5	29
07:00 AM	0	0	0	0	0	3	0	3	21	0	0	21	24
07:15 AM	0	0	0	0	0	2	0	2	2	1	0	3	5
07:30 AM	1	1	0	2	2	7	0	9	3	0	0	3	14
07:45 AM	2	1	0	3	1	6	0	7	4	2	0	6	16
Total	3	2	0	5	3	18	0	21	30	3	0	33	59
08:00 AM	0	0	0	0	0	4	0	4	3	0	0	3	7
08:15 AM	0	0	0	0	0	7	0	7	5	0	0	5	12
Grand Total	6	3	0	9	4	48	0	52	43	3	0	46	107
Apprch %	66.7	33.3	0		7.7	92.3	0		93.5	6.5	0		
Total %	5.6	2.8	0	8.4	3.7	44.9	0	48.6	40.2	2.8	0	43	

	Lafayette Blvd. Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:45 AM										
06:45 AM	**3**	**1**	**4**	1	**18**	**19**	4	0	4	**27**
07:00 AM	0	0	0	0	3	3	**21**	0	**21**	24
07:15 AM	0	0	0	0	2	2	2	**1**	3	5
07:30 AM	1	1	2	**2**	7	9	3	0	3	14
Total Volume	4	2	6	3	30	33	30	1	31	70
% App. Total	66.7	33.3		9.1	90.9		96.8	3.2		
PHF	.333	.500	.375	.375	.417	.434	.357	.250	.369	.648

Peggy Malone & Associates, Inc.

File Name : 6_Longhill Rd. and Lafayette Blvd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Lafayette Blvd. Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	7	0	7	4	42	0	46	72	0	0	72	125
06:45 AM	5	8	0	13	5	96	0	101	97	0	0	97	211
Total	5	15	0	20	9	138	0	147	169	0	0	169	336
07:00 AM	2	16	2	20	5	229	0	234	146	2	0	148	402
07:15 AM	1	12	2	15	3	85	0	88	138	2	0	140	243
07:30 AM	5	11	0	16	4	85	0	89	121	3	0	124	229
07:45 AM	3	16	0	19	6	110	0	116	170	4	0	174	309
Total	11	55	4	70	18	509	0	527	575	11	0	586	1183
08:00 AM	2	6	2	10	2	85	0	87	130	2	0	132	229
08:15 AM	2	10	0	12	3	108	0	111	124	4	0	128	251
Grand Total	20	86	6	112	32	840	0	872	998	17	0	1015	1999
Apprch %	17.9	76.8	5.4		3.7	96.3	0		98.3	1.7	0		
Total %	1	4.3	0.3	5.6	1.6	42	0	43.6	49.9	0.9	0	50.8	

	Lafayette Blvd. Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	**16**	18	5	**229**	**234**	146	2	148	**400**
07:15 AM	1	12	13	3	85	88	138	2	140	241
07:30 AM	**5**	11	16	4	85	89	121	3	124	229
07:45 AM	3	16	**19**	**6**	110	116	**170**	**4**	**174**	309
Total Volume	11	55	66	18	509	527	575	11	586	1179
% App. Total	16.7	83.3		3.4	96.6		98.1	1.9		
PHF	.550	.859	.868	.750	.556	.563	.846	.688	.842	.737

Peggy Malone & Associates, Inc.

File Name : 6_Longhill Rd. and Lafayette Blvd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Lafayette Blvd. Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	8	0	12	19	141	0	160	139	1	0	140	312
04:15 PM	0	20	5	25	14	190	0	204	140	5	0	145	374
04:30 PM	5	10	0	15	23	191	0	214	156	1	0	157	386
04:45 PM	5	22	0	27	20	207	0	227	166	2	0	168	422
Total	14	60	5	79	76	729	0	805	601	9	0	610	1494
05:00 PM	4	7	1	12	10	224	0	234	146	2	0	148	394
05:15 PM	1	14	1	16	27	240	0	267	136	3	0	139	422
05:30 PM	3	10	1	14	14	237	0	251	155	2	0	157	422
05:45 PM	2	8	1	11	18	240	0	258	144	5	0	149	418
Total	10	39	4	53	69	941	0	1010	581	12	0	593	1656
Grand Total	24	99	9	132	145	1670	0	1815	1182	21	0	1203	3150
Apprch %	18.2	75	6.8		8	92	0		98.3	1.7	0		
Total %	0.8	3.1	0.3	4.2	4.6	53	0	57.6	37.5	0.7	0	38.2	

	Lafayette Blvd. Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**5**	**22**	**27**	20	207	227	**166**	2	**168**	**422**
05:00 PM	4	7	11	10	224	234	146	2	148	393
05:15 PM	1	14	15	**27**	**240**	**267**	136	**3**	139	421
05:30 PM	3	10	13	14	237	251	155	2	157	421
Total Volume	13	53	66	71	908	979	603	9	612	1657
% App. Total	19.7	80.3		7.3	92.7		98.5	1.5		
PHF	.650	.602	.611	.657	.946	.917	.908	.750	.911	.982

Peggy Malone & Associates, Inc.

File Name : 6_Longhill Rd. and Lafayette Blvd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Lafayette Blvd. Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	1	0	1	0	2	0	2	3	3	0	6	9
04:15 PM	0	2	0	2	0	8	0	8	4	2	0	6	16
04:30 PM	1	0	0	1	0	8	0	8	1	0	0	1	10
04:45 PM	0	2	0	2	0	4	0	4	7	0	0	7	13
Total	1	5	0	6	0	22	0	22	15	5	0	20	48
05:00 PM	0	0	0	0	0	5	0	5	1	0	0	1	6
05:15 PM	0	0	0	0	0	4	0	4	3	0	0	3	7
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	2
05:45 PM	0	0	0	0	0	2	0	2	1	0	0	1	3
Total	0	0	0	0	0	13	0	13	5	0	0	5	18
Grand Total	1	5	0	6	0	35	0	35	20	5	0	25	66
Apprch %	16.7	83.3	0		0	100	0		80	20	0		
Total %	1.5	7.6	0	9.1	0	53	0	53	30.3	7.6	0	37.9	

	Lafayette Blvd. Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	1	1	0	2	2	3	**3**	6	9
04:15 PM	0	**2**	**2**	0	**8**	**8**	4	2	6	**16**
04:30 PM	**1**	0	1	0	8	8	1	0	1	10
04:45 PM	0	2	2	0	4	4	**7**	0	**7**	13
Total Volume	1	5	6	0	22	22	15	5	20	48
% App. Total	16.7	83.3		0	100		75	25		
PHF	.250	.625	.750	.000	.688	.688	.536	.417	.714	.750

Peggy Malone & Associates, Inc.

File Name : 6_Longhill Rd. and Lafayette Blvd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Lafayette Blvd. Southbound				Longhill Rd. Westbound				Longhill Rd. Eastbound				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	4	9	0	13	19	143	0	162	142	4	0	146	321
04:15 PM	0	22	5	27	14	198	0	212	144	7	0	151	390
04:30 PM	6	10	0	16	23	199	0	222	157	1	0	158	396
04:45 PM	5	24	0	29	20	211	0	231	173	2	0	175	435
Total	15	65	5	85	76	751	0	827	616	14	0	630	1542
05:00 PM	4	7	1	12	10	229	0	239	147	2	0	149	400
05:15 PM	1	14	1	16	27	244	0	271	139	3	0	142	429
05:30 PM	3	10	1	14	14	239	0	253	155	2	0	157	424
05:45 PM	2	8	1	11	18	242	0	260	145	5	0	150	421
Total	10	39	4	53	69	954	0	1023	586	12	0	598	1674
Grand Total	25	104	9	138	145	1705	0	1850	1202	26	0	1228	3216
Apprch %	18.1	75.4	6.5		7.8	92.2	0		97.9	2.1	0		
Total %	0.8	3.2	0.3	4.3	4.5	53	0	57.5	37.4	0.8	0	38.2	

	Lafayette Blvd. Southbound			Longhill Rd. Westbound			Longhill Rd. Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**5**	**24**	**29**	20	211	231	**173**	2	**175**	**435**
05:00 PM	4	7	11	10	229	239	147	2	149	399
05:15 PM	1	14	15	**27**	**244**	**271**	139	**3**	142	428
05:30 PM	3	10	13	14	239	253	155	2	157	423
Total Volume	13	55	68	71	923	994	614	9	623	1685
% App. Total	19.1	80.9		7.1	92.9		98.6	1.4		
PHF	.650	.573	.586	.657	.946	.917	.887	.750	.890	.968

Peggy Malone & Associates, Inc.

File Name : 7_Longhill Rd. and Buford Rd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Longhill Rd. Westbound				Buford Rd. Northbound				Longhill Rd. Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:30 AM	48	1	0	49	3	3	1	7	0	84	0	84	140
06:45 AM	92	3	0	95	4	4	0	8	1	111	0	112	215
Total	140	4	0	144	7	7	1	15	1	195	0	196	355
07:00 AM	220	1	0	221	4	5	0	9	0	138	0	138	368
07:15 AM	81	2	0	83	3	1	0	4	1	137	0	138	225
07:30 AM	83	3	0	86	3	2	0	5	0	146	0	146	237
07:45 AM	107	1	0	108	6	2	0	8	0	172	0	172	288
Total	491	7	0	498	16	10	0	26	1	593	0	594	1118
08:00 AM	86	1	0	87	3	2	0	5	1	132	0	133	225
08:15 AM	93	2	0	95	6	2	0	8	2	132	0	134	237
Grand Total	810	14	0	824	32	21	1	54	5	1052	0	1057	1935
Apprch %	98.3	1.7	0		59.3	38.9	1.9		0.5	99.5	0		
Total %	41.9	0.7	0	42.6	1.7	1.1	0.1	2.8	0.3	54.4	0	54.6	

	Longhill Rd. Westbound			Buford Rd. Northbound			Longhill Rd. Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**220**	1	**221**	4	**5**	**9**	0	138	138	**368**
07:15 AM	81	2	83	3	1	4	**1**	137	138	225
07:30 AM	83	**3**	86	3	2	5	0	146	146	237
07:45 AM	107	1	108	**6**	2	8	0	**172**	**172**	288
Total Volume	491	7	498	16	10	26	1	593	594	1118
% App. Total	98.6	1.4		61.5	38.5		0.2	99.8		
PHF	.558	.583	.563	.667	.500	.722	.250	.862	.863	.760

Peggy Malone & Associates, Inc.

File Name : 7_Longhill Rd. and Buford Rd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Longhill Rd. Westbound				Buford Rd. Northbound				Longhill Rd. Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:30 AM	3	0	0	3	0	0	0	0	0	1	0	1	4
06:45 AM	20	0	0	20	0	0	0	0	0	5	0	5	25
Total	23	0	0	23	0	0	0	0	0	6	0	6	29
07:00 AM	0	0	0	0	0	0	0	0	0	18	0	18	18
07:15 AM	3	0	0	3	0	0	0	0	0	2	0	2	5
07:30 AM	8	0	0	8	0	1	0	1	0	4	0	4	13
07:45 AM	5	0	0	5	0	0	0	0	0	5	0	5	10
Total	16	0	0	16	0	1	0	1	0	29	0	29	46
08:00 AM	5	2	0	7	0	0	0	0	0	6	0	6	13
08:15 AM	7	0	0	7	0	0	0	0	0	6	0	6	13
Grand Total	51	2	0	53	0	1	0	1	0	47	0	47	101
Apprch %	96.2	3.8	0		0	100	0		0	100	0		
Total %	50.5	2	0	52.5	0	1	0	1	0	46.5	0	46.5	

	Longhill Rd. Westbound			Buford Rd. Northbound			Longhill Rd. Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:45 AM										
06:45 AM	**20**	0	**20**	0	0	0	0	5	5	**25**
07:00 AM	0	0	0	0	0	0	0	**18**	**18**	18
07:15 AM	3	0	3	0	0	0	0	2	2	5
07:30 AM	8	0	8	0	**1**	**1**	0	4	4	13
Total Volume	31	0	31	0	1	1	0	29	29	61
% App. Total	100	0		0	100		0	100		
PHF	.388	.000	.388	.000	.250	.250	.000	.403	.403	.610

Peggy Malone & Associates, Inc.

File Name : 7_Longhill Rd. and Buford Rd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Longhill Rd. Westbound				Buford Rd. Northbound				Longhill Rd. Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
06:30 AM	51	1	0	52	3	3	1	7	0	85	0	85	144
06:45 AM	112	3	0	115	4	4	0	8	1	116	0	117	240
Total	163	4	0	167	7	7	1	15	1	201	0	202	384
07:00 AM	220	1	0	221	4	5	0	9	0	156	0	156	386
07:15 AM	84	2	0	86	3	1	0	4	1	139	0	140	230
07:30 AM	91	3	0	94	3	3	0	6	0	150	0	150	250
07:45 AM	112	1	0	113	6	2	0	8	0	177	0	177	298
Total	507	7	0	514	16	11	0	27	1	622	0	623	1164
08:00 AM	91	3	0	94	3	2	0	5	1	138	0	139	238
08:15 AM	100	2	0	102	6	2	0	8	2	138	0	140	250
Grand Total	861	16	0	877	32	22	1	55	5	1099	0	1104	2036
Apprch %	98.2	1.8	0		58.2	40	1.8		0.5	99.5	0		
Total %	42.3	0.8	0	43.1	1.6	1.1	0	2.7	0.2	54	0	54.2	

	Longhill Rd. Westbound			Buford Rd. Northbound			Longhill Rd. Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**220**	1	**221**	4	**5**	**9**	0	156	156	**386**
07:15 AM	84	2	86	3	1	4	**1**	139	140	230
07:30 AM	91	**3**	94	3	3	6	0	150	150	250
07:45 AM	112	1	113	**6**	2	8	0	**177**	**177**	298
Total Volume	507	7	514	16	11	27	1	622	623	1164
% App. Total	98.6	1.4		59.3	40.7		0.2	99.8		
PHF	.576	.583	.581	.667	.550	.750	.250	.879	.880	.754

Peggy Malone & Associates, Inc.

File Name : 7_Longhill Rd. and Buford Rd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Longhill Rd. Westbound				Buford Rd. Northbound				Longhill Rd. Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	155	6	0	161	7	0	0	7	2	150	0	152	320
04:15 PM	207	4	0	211	2	2	0	4	2	165	0	167	382
04:30 PM	211	12	0	223	3	0	0	3	3	162	0	165	391
04:45 PM	229	9	0	238	4	1	0	5	4	206	0	210	453
Total	802	31	0	833	16	3	0	19	11	683	0	694	1546
05:00 PM	233	11	0	244	2	2	0	4	4	139	0	143	391
05:15 PM	271	11	0	282	1	3	0	4	5	150	0	155	441
05:30 PM	235	13	0	248	8	3	0	11	2	155	0	157	416
05:45 PM	256	16	0	272	5	1	0	6	3	156	0	159	437
Total	995	51	0	1046	16	9	0	25	14	600	0	614	1685
Grand Total	1797	82	0	1879	32	12	0	44	25	1283	0	1308	3231
Apprch %	95.6	4.4	0		72.7	27.3	0		1.9	98.1	0		
Total %	55.6	2.5	0	58.2	1	0.4	0	1.4	0.8	39.7	0	40.5	

	Longhill Rd. Westbound			Buford Rd. Northbound			Longhill Rd. Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	229	9	238	4	1	5	4	**206**	**210**	**453**
05:00 PM	233	11	244	2	2	4	4	139	143	391
05:15 PM	**271**	11	**282**	1	**3**	4	**5**	150	155	441
05:30 PM	235	**13**	248	**8**	3	**11**	2	155	157	416
Total Volume	968	44	1012	15	9	24	15	650	665	1701
% App. Total	95.7	4.3		62.5	37.5		2.3	97.7		
PHF	.893	.846	.897	.469	.750	.545	.750	.789	.792	.939

Peggy Malone & Associates, Inc.

File Name : 7_Longhill Rd. and Buford Rd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Longhill Rd. Westbound				Buford Rd. Northbound				Longhill Rd. Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	1	0	0	1	0	0	0	0	0	5	0	5	6
04:15 PM	8	0	0	8	0	1	0	1	0	4	0	4	13
04:30 PM	7	0	0	7	0	0	0	0	0	2	0	2	9
04:45 PM	4	0	0	4	0	0	0	0	0	9	0	9	13
Total	20	0	0	20	0	1	0	1	0	20	0	20	41
05:00 PM	6	0	0	6	0	0	0	0	0	1	0	1	7
05:15 PM	5	0	0	5	0	0	0	0	0	2	0	2	7
05:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
05:45 PM	2	0	0	2	0	0	0	0	0	2	0	2	4
Total	14	0	0	14	0	0	0	0	0	6	0	6	20
Grand Total	34	0	0	34	0	1	0	1	0	26	0	26	61
Apprch %	100	0	0		0	100	0		0	100	0		
Total %	55.7	0	0	55.7	0	1.6	0	1.6	0	42.6	0	42.6	

	Longhill Rd. Westbound			Buford Rd. Northbound			Longhill Rd. Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	**8**	0	**8**	0	**1**	**1**	0	4	4	**13**
04:30 PM	7	0	7	0	0	0	0	2	2	9
04:45 PM	4	0	4	0	0	0	0	**9**	**9**	13
05:00 PM	6	0	6	0	0	0	0	1	1	7
Total Volume	25	0	25	0	1	1	0	16	16	42
% App. Total	100	0		0	100		0	100		
PHF	.781	.000	.781	.000	.250	.250	.000	.444	.444	.808

Peggy Malone & Associates, Inc.

File Name : 7_Longhill Rd. and Buford Rd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Longhill Rd. Westbound				Buford Rd. Northbound				Longhill Rd. Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
04:00 PM	156	6	0	162	7	0	0	7	2	155	0	157	326
04:15 PM	215	4	0	219	2	3	0	5	2	169	0	171	395
04:30 PM	218	12	0	230	3	0	0	3	3	164	0	167	400
04:45 PM	233	9	0	242	4	1	0	5	4	215	0	219	466
Total	822	31	0	853	16	4	0	20	11	703	0	714	1587
05:00 PM	239	11	0	250	2	2	0	4	4	140	0	144	398
05:15 PM	276	11	0	287	1	3	0	4	5	152	0	157	448
05:30 PM	236	13	0	249	8	3	0	11	2	156	0	158	418
05:45 PM	258	16	0	274	5	1	0	6	3	158	0	161	441
Total	1009	51	0	1060	16	9	0	25	14	606	0	620	1705
Grand Total	1831	82	0	1913	32	13	0	45	25	1309	0	1334	3292
Apprch %	95.7	4.3	0		71.1	28.9	0		1.9	98.1	0		
Total %	55.6	2.5	0	58.1	1	0.4	0	1.4	0.8	39.8	0	40.5	

	Longhill Rd. Westbound			Buford Rd. Northbound			Longhill Rd. Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	233	9	242	4	1	5	4	**215**	**219**	**466**
05:00 PM	239	11	250	2	2	4	4	140	144	398
05:15 PM	**276**	11	**287**	1	**3**	4	**5**	152	157	448
05:30 PM	236	**13**	249	**8**	3	**11**	2	156	158	418
Total Volume	984	44	1028	15	9	24	15	663	678	1730
% App. Total	95.7	4.3		62.5	37.5		2.2	97.8		
PHF	.891	.846	.895	.469	.750	.545	.750	.771	.774	.928

Peggy Malone & Associates, Inc.

File Name : 8_Longhill Rd. and Old Towne Rd_Devon Rd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Longhill Rd. Southbound					Old Towne Rd. Westbound					Longhill Rd. Northbound					Devon Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	79	14	0	93	10	0	11	0	21	5	32	0	0	37	10	5	2	0	17	168
06:45 AM	0	102	22	0	124	17	1	22	0	40	14	76	3	0	93	8	1	2	0	11	268
Total	0	181	36	0	217	27	1	33	0	61	19	108	3	0	130	18	6	4	0	28	436
07:00 AM	1	115	31	0	147	42	1	29	1	73	9	167	6	0	182	11	7	7	0	25	427
07:15 AM	0	121	32	0	153	21	1	24	0	46	25	50	3	0	78	14	2	1	0	17	294
07:30 AM	1	124	23	0	148	16	0	22	0	38	20	64	3	0	87	6	2	3	0	11	284
07:45 AM	2	147	44	0	193	30	1	41	0	72	51	64	3	0	118	14	2	6	0	22	405
Total	4	507	130	0	641	109	3	116	1	229	105	345	15	0	465	45	13	17	0	75	1410
08:00 AM	0	99	31	0	130	21	0	36	0	57	36	76	1	0	113	11	3	3	0	17	317
08:15 AM	1	113	32	0	146	28	2	27	4	61	29	68	5	0	102	6	2	0	0	8	317
Grand Total	5	900	229	0	1134	185	6	212	5	408	189	597	24	0	810	80	24	24	0	128	2480
Apprch %	0.4	79.4	20.2	0		45.3	1.5	52	1.2		23.3	73.7	3	0		62.5	18.8	18.8	0		
Total %	0.2	36.3	9.2	0	45.7	7.5	0.2	8.5	0.2	16.5	7.6	24.1	1	0	32.7	3.2	1	1	0	5.2	

	Longhill Rd. Southbound				Old Towne Rd. Westbound				Longhill Rd. Northbound				Devon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	115	31	147	**42**	**1**	29	**72**	9	**167**	**6**	**182**	11	**7**	**7**	**25**	**426**
07:15 AM	0	121	32	153	21	1	24	46	25	50	3	78	**14**	2	1	17	294
07:30 AM	1	124	23	148	16	0	22	38	20	64	3	87	6	2	3	11	284
07:45 AM	**2**	**147**	**44**	**193**	30	1	**41**	72	**51**	64	3	118	14	2	6	22	405
Total Volume	4	507	130	641	109	3	116	228	105	345	15	465	45	13	17	75	1409
% App. Total	0.6	79.1	20.3		47.8	1.3	50.9		22.6	74.2	3.2		60	17.3	22.7		
PHF	.500	.862	.739	.830	.649	.750	.707	.792	.515	.516	.625	.639	.804	.464	.607	.750	.827

Peggy Malone & Associates, Inc.

File Name : 8_Longhill Rd. and Old Towne Rd_Devon Rd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Longhill Rd. Southbound					Old Towne Rd. Westbound					Longhill Rd. Northbound					Devon Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	0	1	0	1	0	0	1	0	1	1	3	1	0	5	0	0	0	0	0	7
06:45 AM	0	3	2	0	5	2	0	0	0	2	1	17	1	0	19	0	0	1	0	1	27
Total	0	3	3	0	6	2	0	1	0	3	2	20	2	0	24	0	0	1	0	1	34
07:00 AM	0	15	3	0	18	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	21
07:15 AM	0	2	0	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
07:30 AM	0	3	1	0	4	4	0	0	0	4	0	4	0	0	4	0	0	0	0	0	12
07:45 AM	0	6	0	0	6	2	0	0	0	2	0	4	0	0	4	0	0	1	0	1	13
Total	0	26	4	0	30	7	0	0	0	7	2	10	0	0	12	0	0	1	0	1	50
08:00 AM	0	4	2	0	6	2	1	1	0	4	3	6	0	0	9	0	0	0	0	0	19
08:15 AM	1	7	1	0	9	2	0	1	0	3	1	4	0	0	5	0	0	0	0	0	17
Grand Total	1	40	10	0	51	13	1	3	0	17	8	40	2	0	50	0	0	2	0	2	120
Apprch %	2	78.4	19.6	0		76.5	5.9	17.6	0		16	80	4	0		0	0	100	0		
Total %	0.8	33.3	8.3	0	42.5	10.8	0.8	2.5	0	14.2	6.7	33.3	1.7	0	41.7	0	0	1.7	0	1.7	

	Longhill Rd. Southbound				Old Towne Rd. Westbound				Longhill Rd. Northbound				Devon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:45 AM																	
06:45 AM	0	3	2	5	2	0	0	2	1	**17**	**1**	**19**	0	0	**1**	**1**	**27**
07:00 AM	0	**15**	**3**	**18**	0	0	0	0	**2**	1	0	3	0	0	0	0	21
07:15 AM	0	2	0	2	1	0	0	1	0	1	0	1	0	0	0	0	4
07:30 AM	0	3	1	4	**4**	0	0	**4**	0	4	0	4	0	0	0	0	12
Total Volume	0	23	6	29	7	0	0	7	3	23	1	27	0	0	1	1	64
% App. Total	0	79.3	20.7		100	0	0		11.1	85.2	3.7		0	0	100		
PHF	.000	.383	.500	.403	.438	.000	.000	.438	.375	.338	.250	.355	.000	.000	.250	.250	.593

Peggy Malone & Associates, Inc.

File Name : 8_Longhill Rd. and Old Towne Rd_Devon Rd. AM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Longhill Rd. Southbound					Old Towne Rd. Westbound					Longhill Rd. Northbound					Devon Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:30 AM	0	79	15	0	94	10	0	12	0	22	6	35	1	0	42	10	5	2	0	17	175
06:45 AM	0	105	24	0	129	19	1	22	0	42	15	93	4	0	112	8	1	3	0	12	295
Total	0	184	39	0	223	29	1	34	0	64	21	128	5	0	154	18	6	5	0	29	470
07:00 AM	1	130	34	0	165	42	1	29	1	73	11	168	6	0	185	11	7	7	0	25	448
07:15 AM	0	123	32	0	155	22	1	24	0	47	25	51	3	0	79	14	2	1	0	17	298
07:30 AM	1	127	24	0	152	20	0	22	0	42	20	68	3	0	91	6	2	3	0	11	296
07:45 AM	2	153	44	0	199	32	1	41	0	74	51	68	3	0	122	14	2	7	0	23	418
Total	4	533	134	0	671	116	3	116	1	236	107	355	15	0	477	45	13	18	0	76	1460
08:00 AM	0	103	33	0	136	23	1	37	0	61	39	82	1	0	122	11	3	3	0	17	336
08:15 AM	2	120	33	0	155	30	2	28	4	64	30	72	5	0	107	6	2	0	0	8	334
Grand Total	6	940	239	0	1185	198	7	215	5	425	197	637	26	0	860	80	24	26	0	130	2600
Apprch %	0.5	79.3	20.2	0		46.6	1.6	50.6	1.2		22.9	74.1	3	0		61.5	18.5	20	0		
Total %	0.2	36.2	9.2	0	45.6	7.6	0.3	8.3	0.2	16.3	7.6	24.5	1	0	33.1	3.1	0.9	1	0	5	

	Longhill Rd. Southbound				Old Towne Rd. Westbound				Longhill Rd. Northbound				Devon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	130	34	165	**42**	**1**	29	72	11	**168**	**6**	**185**	11	**7**	**7**	**25**	**447**
07:15 AM	0	123	32	155	22	1	24	47	25	51	3	79	**14**	2	1	17	298
07:30 AM	1	127	24	152	20	0	22	42	20	68	3	91	6	2	3	11	296
07:45 AM	**2**	**153**	**44**	**199**	32	1	**41**	**74**	**51**	68	3	122	14	2	7	23	418
Total Volume	4	533	134	671	116	3	116	235	107	355	15	477	45	13	18	76	1459
% App. Total	0.6	79.4	20		49.4	1.3	49.4		22.4	74.4	3.1		59.2	17.1	23.7		
PHF	.500	.871	.761	.843	.690	.750	.707	.794	.525	.528	.625	.645	.804	.464	.643	.760	.816

Peggy Malone & Associates, Inc.

File Name : 8_Longhill Rd. and Old Towne Rd_Devon Rd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Car

	Longhill Rd. Southbound					Old Towne Rd. Westbound					Longhill Rd. Northbound					Devon Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	121	45	0	167	58	6	64	0	128	39	102	10	0	151	6	1	1	0	8	454
04:15 PM	2	113	43	0	158	59	3	54	0	116	40	161	14	0	215	5	2	2	0	9	498
04:30 PM	2	121	43	0	166	71	0	56	0	127	51	163	13	0	227	7	2	1	0	10	530
04:45 PM	2	161	46	0	209	83	2	53	0	138	49	166	6	0	221	4	4	2	0	10	578
Total	7	516	177	0	700	271	11	227	0	509	179	592	43	0	814	22	9	6	0	37	2060
05:00 PM	1	128	48	0	177	80	9	59	0	148	48	173	10	0	231	9	1	3	0	13	569
05:15 PM	3	109	42	0	154	92	6	53	0	151	48	196	15	0	259	9	3	2	0	14	578
05:30 PM	1	120	62	0	183	82	7	53	0	142	70	188	17	0	275	9	3	3	0	15	615
05:45 PM	4	121	48	0	173	96	6	50	0	152	49	187	8	0	244	16	7	2	0	25	594
Total	9	478	200	0	687	350	28	215	0	593	215	744	50	0	1009	43	14	10	0	67	2356
Grand Total	16	994	377	0	1387	621	39	442	0	1102	394	1336	93	0	1823	65	23	16	0	104	4416
Apprch %	1.2	71.7	27.2	0		56.4	3.5	40.1	0		21.6	73.3	5.1	0		62.5	22.1	15.4	0		
Total %	0.4	22.5	8.5	0	31.4	14.1	0.9	10	0	25	8.9	30.3	2.1	0	41.3	1.5	0.5	0.4	0	2.4	

	Longhill Rd. Southbound				Old Towne Rd. Westbound				Longhill Rd. Northbound				Devon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	**128**	48	177	80	**9**	**59**	148	48	173	10	231	9	1	**3**	13	569
05:15 PM	3	109	42	154	92	6	53	151	48	**196**	15	259	9	3	2	14	578
05:30 PM	1	120	**62**	**183**	82	7	53	142	**70**	188	**17**	**275**	9	3	3	15	**615**
05:45 PM	**4**	121	48	173	**96**	6	50	**152**	49	187	8	244	**16**	**7**	2	**25**	594
Total Volume	9	478	200	687	350	28	215	593	215	744	50	1009	43	14	10	67	2356
% App. Total	1.3	69.6	29.1		59	4.7	36.3		21.3	73.7	5		64.2	20.9	14.9		
PHF	.563	.934	.806	.939	.911	.778	.911	.975	.768	.949	.735	.917	.672	.500	.833	.670	.958

Peggy Malone & Associates, Inc.

File Name : 8_Longhill Rd. and Old Towne Rd_Devon Rd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Truck

	Longhill Rd. Southbound					Old Towne Rd. Westbound					Longhill Rd. Northbound					Devon Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	3	0	0	3	1	0	1	0	2	2	0	1	0	3	0	0	0	0	0	8
04:15 PM	0	5	0	0	5	3	0	1	0	4	1	5	0	0	6	0	1	0	0	1	16
04:30 PM	0	1	0	0	1	2	0	1	0	3	0	4	0	0	4	0	0	0	0	0	8
04:45 PM	0	9	0	0	9	0	0	1	0	1	2	5	0	0	7	0	0	1	0	1	18
Total	0	18	0	0	18	6	0	4	0	10	5	14	1	0	20	0	1	1	0	2	50
05:00 PM	0	2	0	0	2	3	0	1	0	4	1	4	0	0	5	0	0	0	0	0	11
05:15 PM	0	2	0	0	2	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	6
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	1	0	3	0	1	0	0	1	4
05:45 PM	0	1	0	0	1	1	0	0	0	1	0	1	1	0	2	0	1	0	0	1	5
Total	0	5	0	0	5	5	0	1	0	6	2	9	2	0	13	0	2	0	0	2	26
Grand Total	0	23	0	0	23	11	0	5	0	16	7	23	3	0	33	0	3	1	0	4	76
Apprch %	0	100	0	0		68.8	0	31.2	0		21.2	69.7	9.1	0		0	75	25	0		
Total %	0	30.3	0	0	30.3	14.5	0	6.6	0	21.1	9.2	30.3	3.9	0	43.4	0	3.9	1.3	0	5.3	

	Longhill Rd. Southbound				Old Towne Rd. Westbound				Longhill Rd. Northbound				Devon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	5	0	5	**3**	0	**1**	**4**	1	**5**	0	6	0	**1**	0	**1**	16
04:30 PM	0	1	0	1	2	0	1	3	0	4	0	4	0	0	0	0	8
04:45 PM	0	**9**	0	**9**	0	0	1	1	**2**	5	0	**7**	0	0	**1**	1	**18**
05:00 PM	0	2	0	2	3	0	1	4	1	4	0	5	0	0	0	0	11
Total Volume	0	17	0	17	8	0	4	12	4	18	0	22	0	1	1	2	53
% App. Total	0	100	0		66.7	0	33.3		18.2	81.8	0		0	50	50		
PHF	.000	.472	.000	.472	.667	.000	1.00	.750	.500	.900	.000	.786	.000	.250	.250	.500	.736

Peggy Malone & Associates, Inc.

File Name : 8_Longhill Rd. and Old Towne Rd_Devon Rd. PM
Site Code :
Start Date : 5/29/2013
Page No : 1

Groups Printed- Combined

	Longhill Rd. Southbound					Old Towne Rd. Westbound					Longhill Rd. Northbound					Devon Rd. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	124	45	0	170	59	6	65	0	130	41	102	11	0	154	6	1	1	0	8	462
04:15 PM	2	118	43	0	163	62	3	55	0	120	41	166	14	0	221	5	3	2	0	10	514
04:30 PM	2	122	43	0	167	73	0	57	0	130	51	167	13	0	231	7	2	1	0	10	538
04:45 PM	2	170	46	0	218	83	2	54	0	139	51	171	6	0	228	4	4	3	0	11	596
Total	7	534	177	0	718	277	11	231	0	519	184	606	44	0	834	22	10	7	0	39	2110
05:00 PM	1	130	48	0	179	83	9	60	0	152	49	177	10	0	236	9	1	3	0	13	580
05:15 PM	3	111	42	0	156	93	6	53	0	152	48	199	15	0	262	9	3	2	0	14	584
05:30 PM	1	120	62	0	183	82	7	53	0	142	71	189	18	0	278	9	4	3	0	16	619
05:45 PM	4	122	48	0	174	97	6	50	0	153	49	188	9	0	246	16	8	2	0	26	599
Total	9	483	200	0	692	355	28	216	0	599	217	753	52	0	1022	43	16	10	0	69	2382
Grand Total	16	1017	377	0	1410	632	39	447	0	1118	401	1359	96	0	1856	65	26	17	0	108	4492
Apprch %	1.1	72.1	26.7	0		56.5	3.5	40	0		21.6	73.2	5.2	0		60.2	24.1	15.7	0		
Total %	0.4	22.6	8.4	0	31.4	14.1	0.9	10	0	24.9	8.9	30.3	2.1	0	41.3	1.4	0.6	0.4	0	2.4	

	Longhill Rd. Southbound				Old Towne Rd. Westbound				Longhill Rd. Northbound				Devon Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	**130**	48	179	83	**9**	**60**	152	49	177	10	236	9	1	**3**	13	580
05:15 PM	3	111	42	156	93	6	53	152	48	**199**	15	262	9	3	2	14	584
05:30 PM	1	120	**62**	**183**	82	7	53	142	**71**	189	**18**	**278**	9	4	3	16	**619**
05:45 PM	**4**	122	48	174	**97**	6	50	**153**	49	188	9	246	**16**	**8**	2	**26**	599
Total Volume	9	483	200	692	355	28	216	599	217	753	52	1022	43	16	10	69	2382
% App. Total	1.3	69.8	28.9		59.3	4.7	36.1		21.2	73.7	5.1		62.3	23.2	14.5		
PHF	.563	.929	.806	.945	.915	.778	.900	.979	.764	.946	.722	.919	.672	.500	.833	.663	.962

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 EB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199eastofframp1-31-2013
Site Code : 00000000
Start Date : 1/31/2013

Groups Printed- PV - HV

	ROUTE 612 From North			RTE 199 E Off Ramp From East				ROUTE 612 From South			
Start Time	Right	Thru	App. Total	Right	Thru	Left	App. Total	Thru	Left	App. Total	Int. Total
07:00 AM	57	111	168	10	0	38	48	143	13	156	372
07:15 AM	88	121	209	14	0	55	69	55	11	66	344
07:30 AM	74	110	184	13	1	29	43	74	21	95	322
07:45 AM	76	148	224	12	3	55	70	80	16	96	390
Total	295	490	785	49	4	177	230	352	61	413	1428
08:00 AM	104	142	246	13	0	60	73	100	12	112	431
08:15 AM	69	124	193	21	0	45	66	99	11	110	369
08:30 AM	64	129	193	17	0	41	58	101	17	118	369
08:45 AM	85	142	227	14	3	48	65	101	19	120	412
Total	322	537	859	65	3	194	262	401	59	460	1581
09:00 AM	71	132	203	11	0	38	49	99	20	119	371
09:15 AM	92	133	225	19	0	40	59	100	12	112	396
09:30 AM	95	129	224	21	0	43	64	98	14	112	400
09:45 AM	87	143	230	23	0	29	52	108	18	126	408
Total	345	537	882	74	0	150	224	405	64	469	1575
10:00 AM	66	102	168	22	0	18	40	90	17	107	315
10:15 AM	95	109	204	13	0	28	41	119	7	126	371
10:30 AM	72	90	162	23	0	41	64	121	15	136	362
10:45 AM	84	127	211	15	0	26	41	112	11	123	375
Total	317	428	745	73	0	113	186	442	50	492	1423
11:00 AM	63	107	170	12	1	14	27	111	14	125	322
11:15 AM	51	90	141	20	0	29	49	108	11	119	309
11:30 AM	59	101	160	21	1	17	39	119	14	133	332
11:45 AM	87	117	204	31	0	19	50	154	23	177	431
Total	260	415	675	84	2	79	165	492	62	554	1394
12:00 PM	77	118	195	31	0	17	48	158	26	184	427
12:15 PM	71	120	191	16	0	24	40	109	20	129	360
12:30 PM	61	96	157	21	0	22	43	137	20	157	357
12:45 PM	59	111	170	17	0	32	49	126	21	147	366
Total	268	445	713	85	0	95	180	530	87	617	1510
01:00 PM	59	121	180	31	0	20	51	132	8	140	371
01:15 PM	84	107	191	26	0	21	47	160	17	177	415
01:30 PM	74	136	210	24	0	18	42	140	15	155	407
01:45 PM	85	103	188	19	0	25	44	173	22	195	427
Total	302	467	769	100	0	84	184	605	62	667	1620
02:00 PM	103	122	225	16	1	15	32	155	24	179	436
02:15 PM	90	118	208	26	0	16	42	140	15	155	405
02:30 PM	133	134	267	26	0	37	63	162	23	185	515
02:45 PM	101	117	218	29	0	38	67	178	12	190	475
Total	427	491	918	97	1	106	204	635	74	709	1831
03:00 PM	82	90	172	26	12	27	65	183	7	190	427
03:15 PM	69	95	164	41	0	29	70	180	25	205	439
03:30 PM	80	86	166	40	0	38	78	202	25	227	471
03:45 PM	74	95	169	23	0	35	58	192	24	216	443
Total	305	366	671	130	12	129	271	757	81	838	1780
04:00 PM	78	68	146	46	0	32	78	211	27	238	462

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 EB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199eastofframp1-31-2013
Site Code : 00000000
Start Date : 1/31/2013

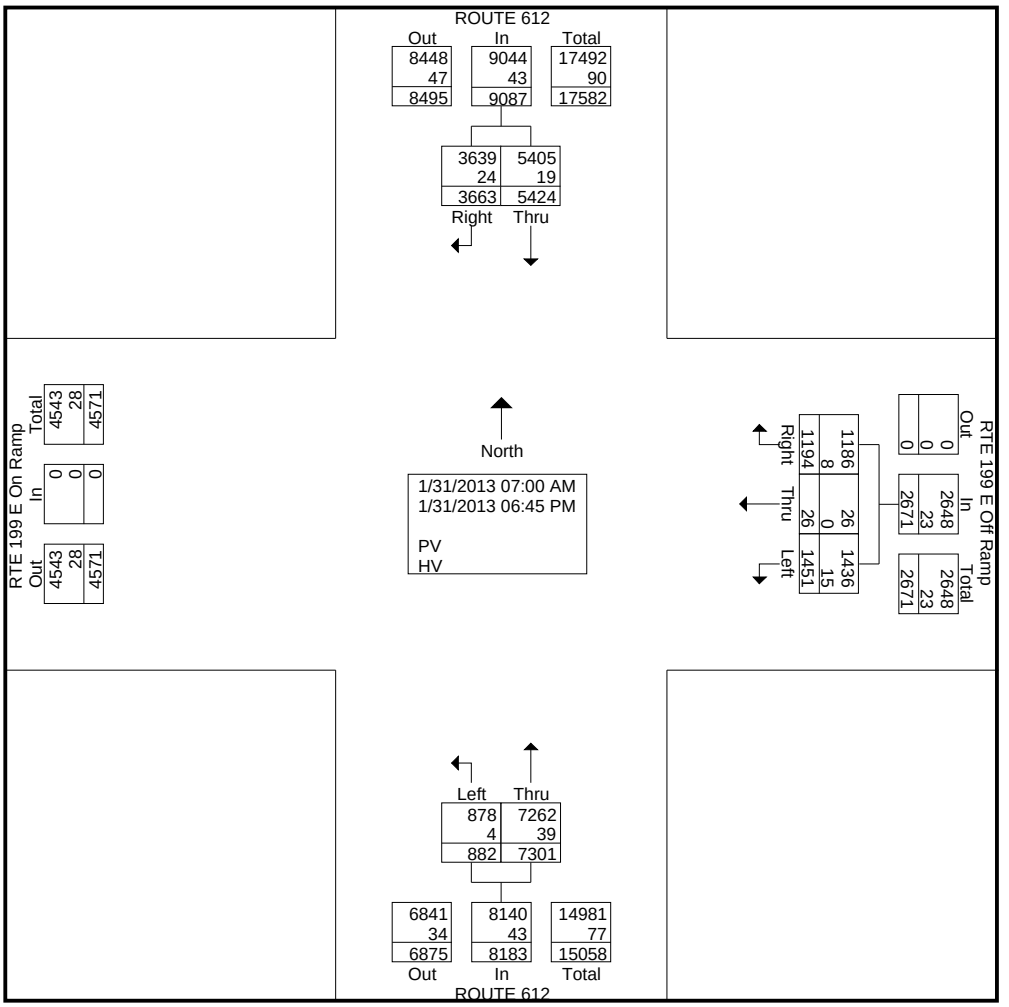
Groups Printed- PV - HV

	ROUTE 612 From North			RTE 199 E Off Ramp From East				ROUTE 612 From South			
Start Time	Right	Thru	App. Total	Right	Thru	Left	App. Total	Thru	Left	App. Total	Int. Total
04:15 PM	85	101	186	35	0	29	64	232	14	246	496
04:30 PM	82	102	184	25	0	17	42	203	23	226	452
04:45 PM	61	108	169	40	0	39	79	193	21	214	462
Total	306	379	685	146	0	117	263	839	85	924	1872
05:00 PM	83	129	212	25	0	38	63	316	31	347	622
05:15 PM	72	162	234	46	0	23	69	329	25	354	657
05:30 PM	70	120	190	49	0	36	85	227	22	249	524
05:45 PM	70	120	190	40	2	23	65	237	23	260	515
Total	295	531	826	160	2	120	282	1109	101	1210	2318
06:00 PM	58	88	146	39	0	16	55	215	24	239	440
06:15 PM	52	87	139	37	0	22	59	186	21	207	405
06:30 PM	59	85	144	34	0	27	61	165	36	201	406
06:45 PM	52	78	130	21	2	22	45	168	15	183	358
Total	221	338	559	131	2	87	220	734	96	830	1609
Grand Total	3663	5424	9087	1194	26	1451	2671	7301	882	8183	19941
Apprch %	40.3	59.7		44.7	1	54.3		89.2	10.8		
Total %	18.4	27.2	45.6	6	0.1	7.3	13.4	36.6	4.4	41	
PV	3639	5405	9044	1186	26	1436	2648	7262	878	8140	19832
% PV	99.3	99.6	99.5	99.3	100	99	99.1	99.5	99.5	99.5	99.5
HV	24	19	43	8	0	15	23	39	4	43	109
% HV	0.7	0.4	0.5	0.7	0	1	0.9	0.5	0.5	0.5	0.5

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 EB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199eastofframp1-31-2013
Site Code : 00000000
Start Date : 1/31/2013
Page No : 3

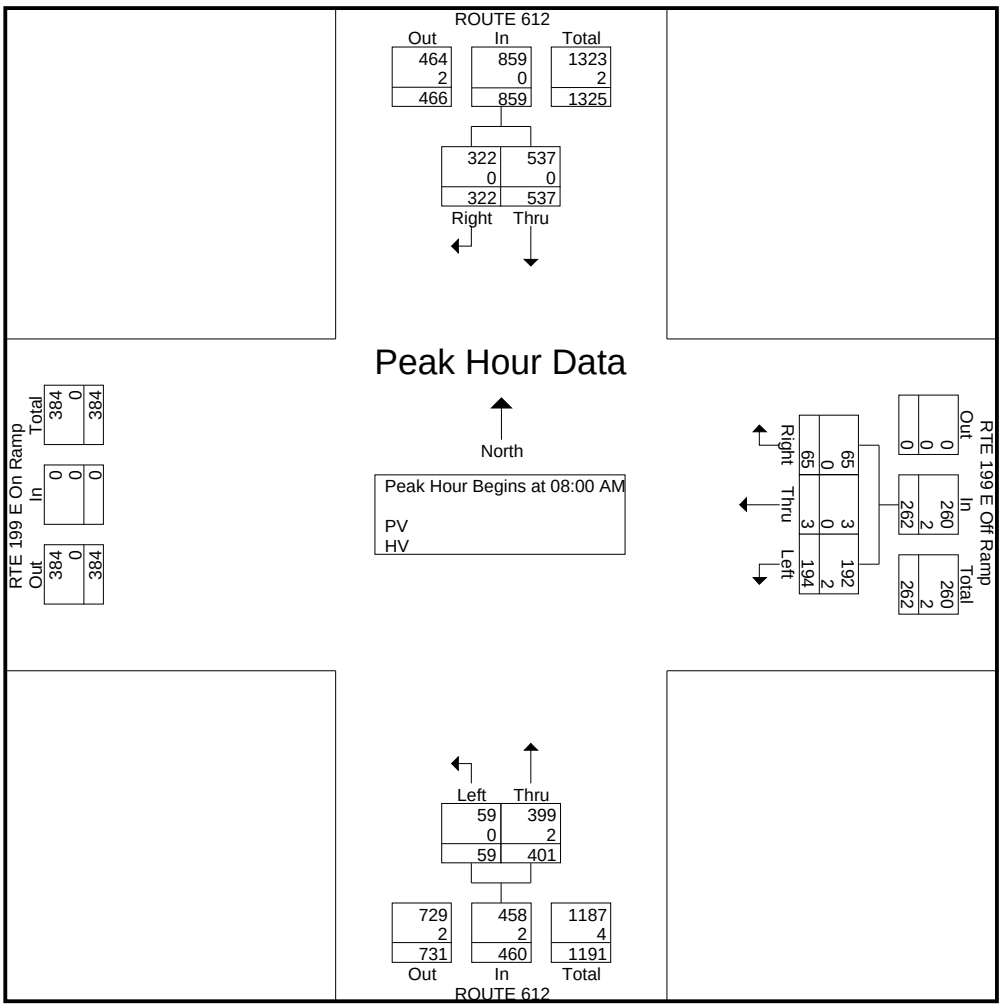


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 EB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199eastofframp1-31-2013
Site Code : 00000000
Start Date : 1/31/2013
Page No : 4

	ROUTE 612 From North			RTE 199 E Off Ramp From East				ROUTE 612 From South			
Start Time	Right	Thru	App. Total	Right	Thru	Left	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:00 AM											
08:00 AM	**104**	**142**	**246**	13	0	**60**	**73**	100	12	112	**431**
08:15 AM	69	124	193	**21**	0	45	66	99	11	110	369
08:30 AM	64	129	193	17	0	41	58	**101**	17	118	369
08:45 AM	85	142	227	14	**3**	48	65	101	**19**	**120**	412
Total Volume	322	537	859	65	3	194	262	401	59	460	1581
% App. Total	37.5	62.5		24.8	1.1	74		87.2	12.8		
PHF	.774	.945	.873	.774	.250	.808	.897	.993	.776	.958	.917
PV	322	537	859	65	3	192	260	399	59	458	1577
% PV	100	100	100	100	100	99.0	99.2	99.5	100	99.6	99.7
HV	0	0	0	0	0	2	2	2	0	2	4
% HV	0	0	0	0	0	1.0	0.8	0.5	0	0.4	0.3

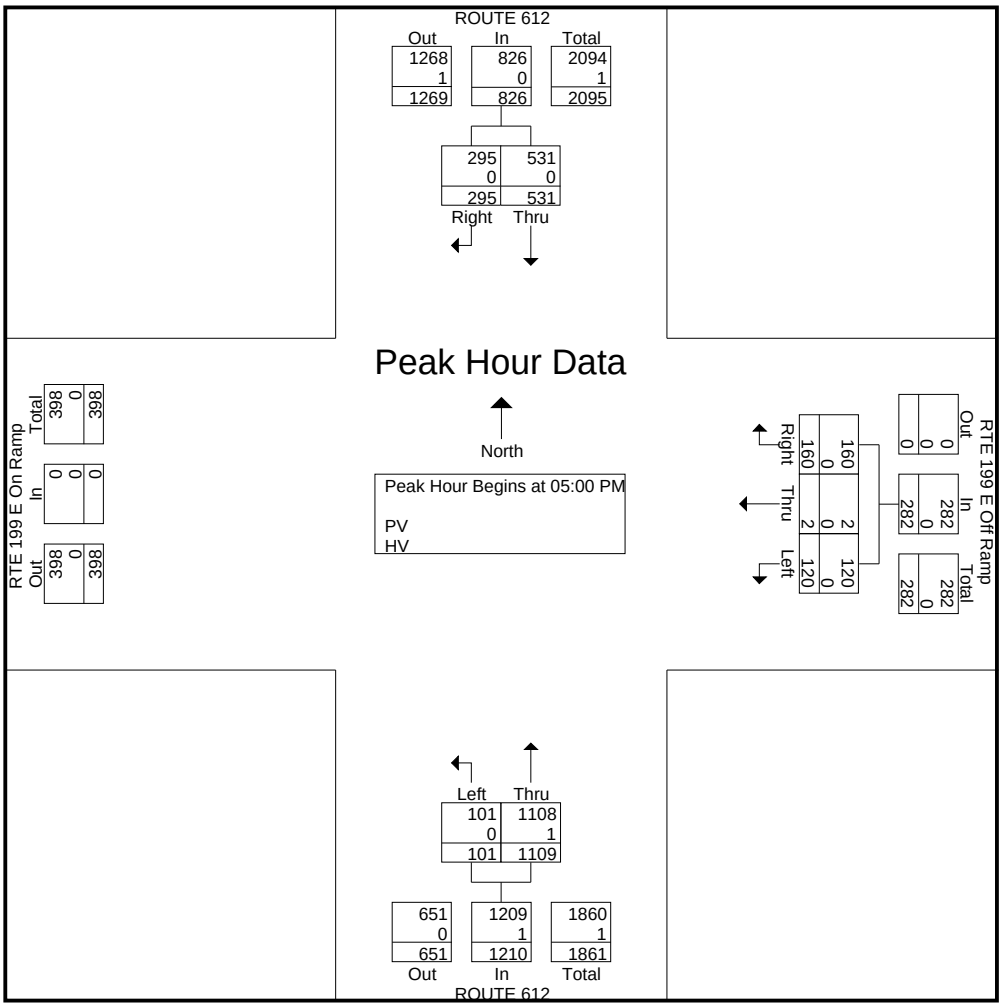


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 EB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199eastofframp1-31-2013
Site Code : 00000000
Start Date : 1/31/2013
Page No : 5

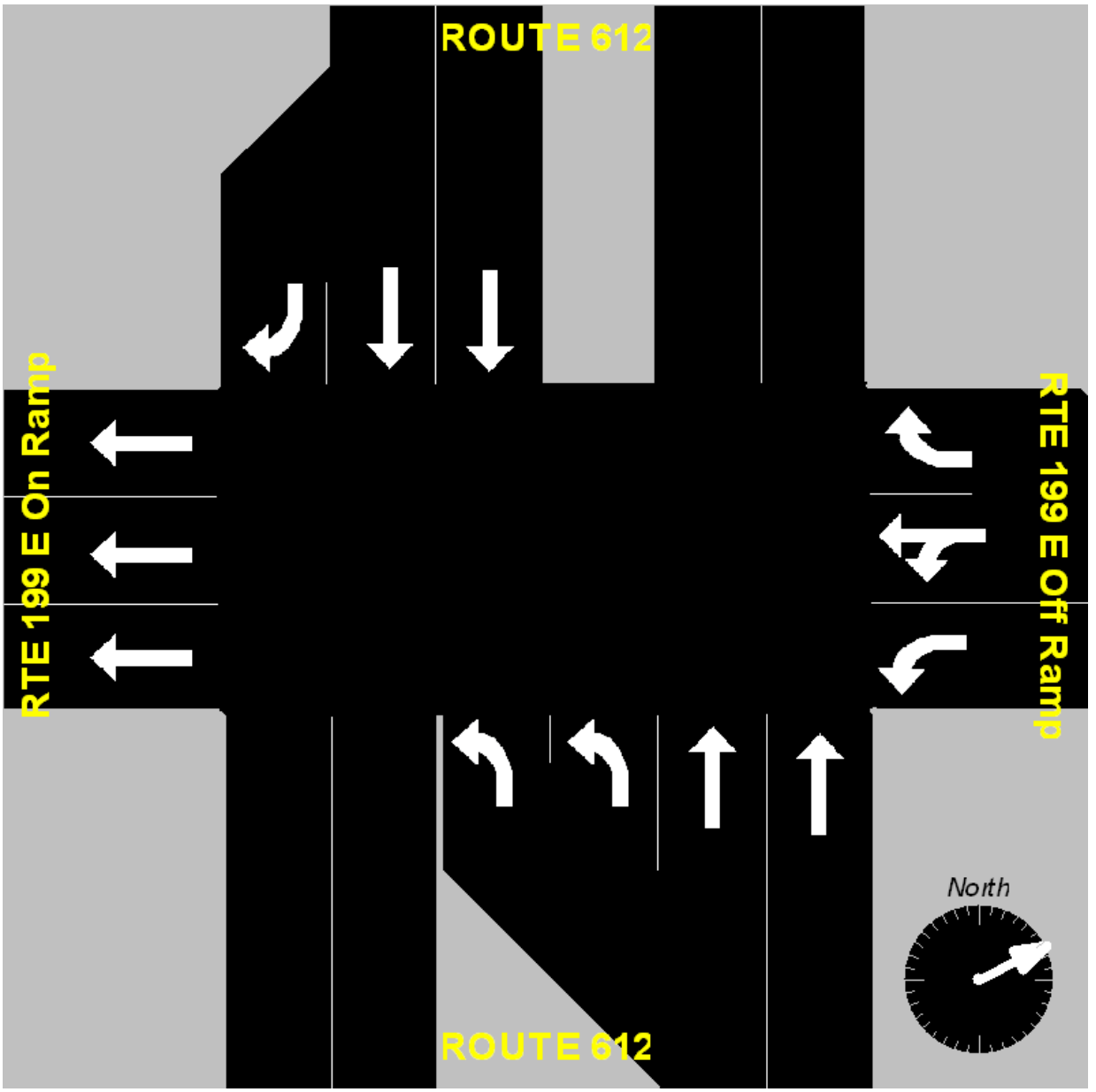
	ROUTE 612 From North			RTE 199 E Off Ramp From East				ROUTE 612 From South			
Start Time	Right	Thru	App. Total	Right	Thru	Left	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	**83**	129	212	25	0	**38**	63	316	**31**	347	622
05:15 PM	72	**162**	**234**	46	0	23	69	**329**	25	**354**	**657**
05:30 PM	70	120	190	**49**	0	36	**85**	227	22	249	524
05:45 PM	70	120	190	40	**2**	23	65	237	23	260	515
Total Volume	295	531	826	160	2	120	282	1109	101	1210	2318
% App. Total	35.7	64.3		56.7	0.7	42.6		91.7	8.3		
PHF	.889	.819	.882	.816	.250	.789	.829	.843	.815	.855	.882
PV	295	531	826	160	2	120	282	1108	101	1209	2317
% PV	100	100	100	100	100	100	100	99.9	100	99.9	100.0
HV	0	0	0	0	0	0	0	1	0	1	1
% HV	0	0	0	0	0	0	0	0.1	0	0.1	0.0



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 EB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199eastofframp1-31-2013
Site Code : 00000000
Start Date : 1/31/2013



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 199 WB Ramp Terminal
James City County
1.09 AADT Adjustment Applied

File Name : 612&199westofframp1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- PV - HV

	ROUTE 612 From North			ROUTE 612 From South			RTE199 W Ramps From West			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
07:00 AM	45	130	175	51	20	71	11	97	108	354
07:15 AM	50	131	181	59	20	79	12	39	51	311
07:30 AM	46	107	153	51	16	67	16	34	50	270
07:45 AM	56	186	242	83	23	106	20	46	66	414
Total	197	554	751	244	79	323	59	216	275	1349
08:00 AM	48	132	180	76	16	92	25	49	74	346
08:15 AM	27	155	182	48	16	64	26	42	68	314
08:30 AM	39	130	169	55	11	66	10	63	73	308
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	114	417	531	179	43	222	61	154	215	968
09:00 AM	12	132	144	71	10	81	22	85	107	332
09:15 AM	33	136	169	71	16	87	25	74	99	355
09:30 AM	35	110	145	47	13	60	12	77	89	294
09:45 AM	29	145	174	63	20	83	20	47	67	324
Total	109	523	632	252	59	311	79	283	362	1305
10:00 AM	38	109	147	75	15	90	8	41	49	286
10:15 AM	35	96	131	77	23	100	13	71	84	315
10:30 AM	21	113	134	51	12	63	15	53	68	265
10:45 AM	24	109	133	75	22	97	13	57	70	300
Total	118	427	545	278	72	350	49	222	271	1166
11:00 AM	13	81	94	92	20	112	7	60	67	273
11:15 AM	17	96	113	63	15	78	16	56	72	263
11:30 AM	15	102	117	91	21	112	13	98	111	340
11:45 AM	17	115	132	87	19	106	12	62	74	312
Total	62	394	456	333	75	408	48	276	324	1188
12:00 PM	21	96	117	124	23	147	7	81	88	352
12:15 PM	16	106	122	93	22	115	10	58	68	305
12:30 PM	28	96	124	95	10	105	16	56	72	301
12:45 PM	25	111	136	105	28	133	15	84	99	368
Total	90	409	499	417	83	500	48	279	327	1326
01:00 PM	24	161	185	111	23	134	24	79	103	422
01:15 PM	19	127	146	105	24	129	12	71	83	358
01:30 PM	26	82	108	108	27	135	12	65	77	320
01:45 PM	23	123	146	64	21	85	14	90	104	335
Total	92	493	585	388	95	483	62	305	367	1435
02:00 PM	29	100	129	101	27	128	10	89	99	356
02:15 PM	27	56	83	87	11	98	3	109	112	293
02:30 PM	23	124	147	97	14	111	16	72	88	346
02:45 PM	24	123	147	110	23	133	22	105	127	407
Total	103	403	506	395	75	470	51	375	426	1402
03:00 PM	24	97	121	88	26	114	20	119	139	374
03:15 PM	26	129	155	110	24	134	14	91	105	394
03:30 PM	17	105	122	142	68	210	12	88	100	432

VDOT
Eastern Region
Traffic Engineering

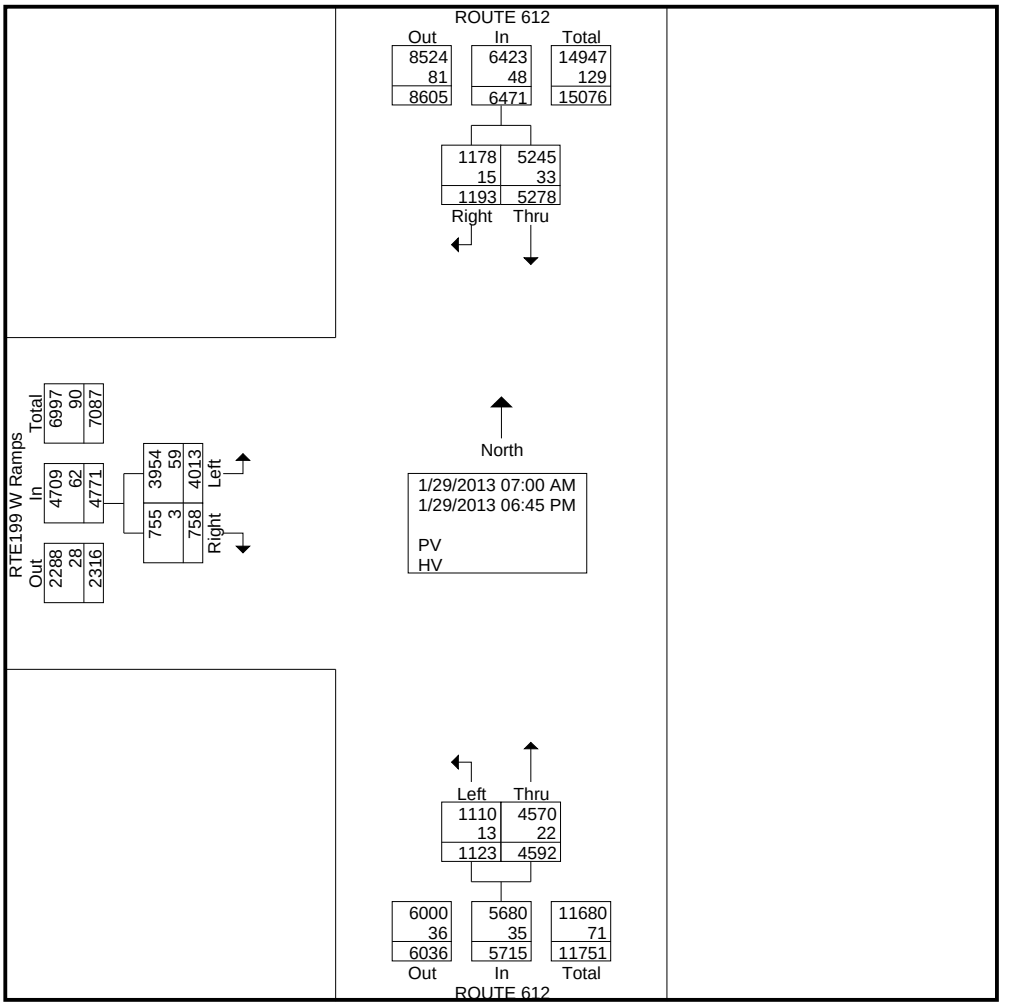
File Name : 612&199westofframp1-29-2013
Site Code : 00000000
Start Date : 1/29/2013

Groups Printed- PV - HV

	ROUTE 612 From North			ROUTE 612 From South			RTE199 W Ramps From West			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
03:45 PM	19	101	120	124	23	147	20	108	128	395
Total	86	432	518	464	141	605	66	406	472	1595
04:00 PM	17	78	95	154	45	199	20	115	135	429
04:15 PM	26	104	130	159	39	198	15	119	134	462
04:30 PM	34	115	149	152	38	190	16	102	118	457
04:45 PM	19	123	142	119	46	165	20	158	178	485
Total	96	420	516	584	168	752	71	494	565	1833
05:00 PM	20	109	129	165	48	213	14	142	156	498
05:15 PM	32	119	151	168	53	221	29	150	179	551
05:30 PM	20	134	154	140	34	174	26	173	199	527
05:45 PM	7	110	117	126	20	146	28	166	194	457
Total	79	472	551	599	155	754	97	631	728	2033
06:00 PM	12	86	98	131	16	147	10	112	122	367
06:15 PM	9	75	84	116	19	135	16	104	120	339
06:30 PM	16	92	108	119	24	143	14	95	109	360
06:45 PM	10	81	91	93	19	112	27	61	88	291
Total	47	334	381	459	78	537	67	372	439	1357
Grand Total	1193	5278	6471	4592	1123	5715	758	4013	4771	16957
Apprch %	18.4	81.6		80.3	19.7		15.9	84.1		
Total %	7	31.1	38.2	27.1	6.6	33.7	4.5	23.7	28.1	
PV	1178	5245	6423	4570	1110	5680	755	3954	4709	16812
% PV	98.7	99.4	99.3	99.5	98.8	99.4	99.6	98.5	98.7	99.1
HV	15	33	48	22	13	35	3	59	62	145
% HV	1.3	0.6	0.7	0.5	1.2	0.6	0.4	1.5	1.3	0.9

VDOT
Eastern Region
Traffic Engineering

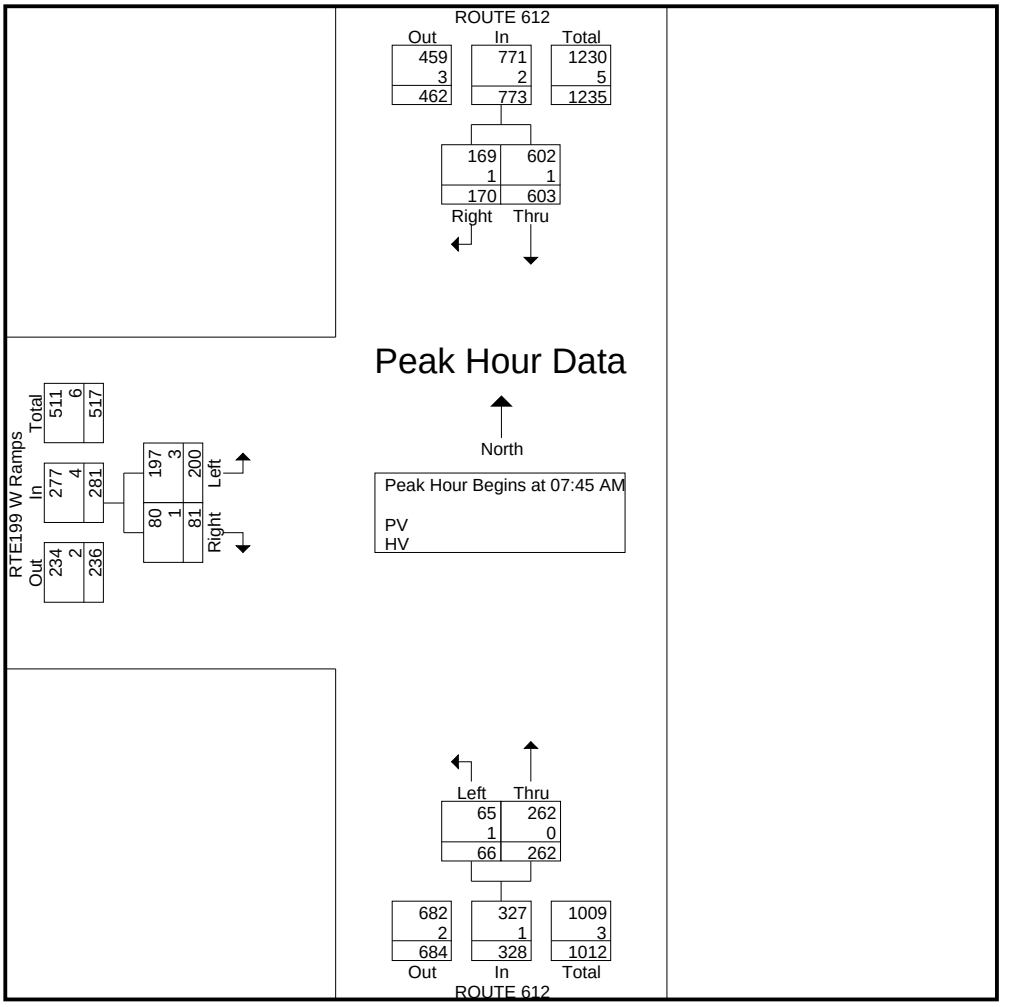
File Name : 612&199westofframp1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 3



VDOT
Eastern Region
Traffic Engineering

File Name : 612&199westofframp1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 4

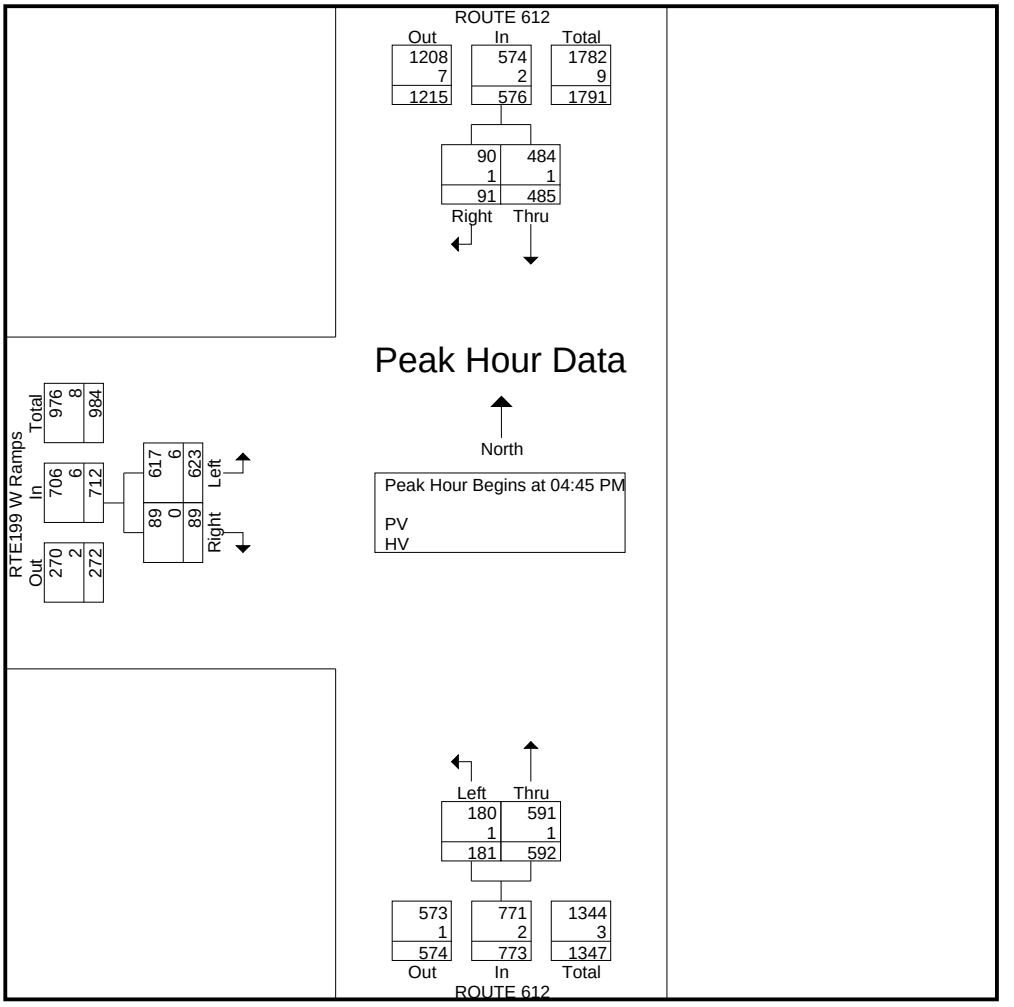
	ROUTE 612 From North			ROUTE 612 From South			RTE199 W Ramps From West			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	**56**	**186**	**242**	**83**	**23**	**106**	20	46	66	**414**
08:00 AM	48	132	180	76	16	92	25	49	**74**	346
08:15 AM	27	155	182	48	16	64	**26**	42	68	314
08:30 AM	39	130	169	55	11	66	10	**63**	73	308
Total Volume	170	603	773	262	66	328	81	200	281	1382
% App. Total	22	78		79.9	20.1		28.8	71.2		
PHF	.759	.810	.799	.789	.717	.774	.779	.794	.949	.835
PV	169	602	771	262	65	327	80	197	277	1375
% PV	99.4	99.8	99.7	100	98.5	99.7	98.8	98.5	98.6	99.5
HV	1	1	2	0	1	1	1	3	4	7
% HV	0.6	0.2	0.3	0	1.5	0.3	1.2	1.5	1.4	0.5



VDOT
Eastern Region
Traffic Engineering

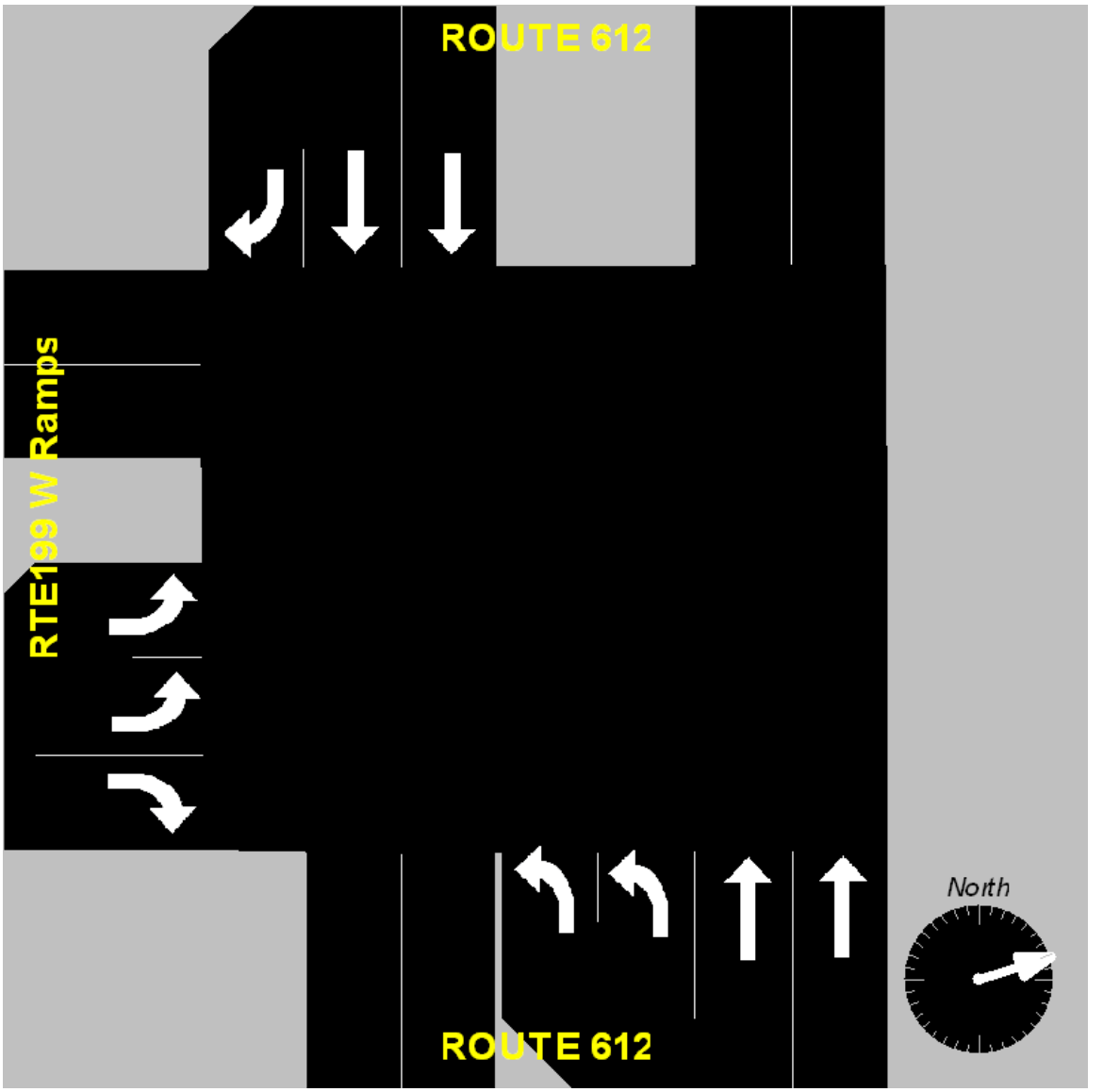
File Name : 612&199westofframp1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 5

	ROUTE 612 From North			ROUTE 612 From South			RTE199 W Ramps From West			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	19	123	142	119	46	165	20	158	178	485
05:00 PM	20	109	129	165	48	213	14	142	156	498
05:15 PM	**32**	119	151	**168**	**53**	**221**	**29**	150	179	**551**
05:30 PM	20	**134**	**154**	140	34	174	26	**173**	**199**	527
Total Volume	91	485	576	592	181	773	89	623	712	2061
% App. Total	15.8	84.2		76.6	23.4		12.5	87.5		
PHF	.711	.905	.935	.881	.854	.874	.767	.900	.894	.935
PV	90	484	574	591	180	771	89	617	706	2051
% PV	98.9	99.8	99.7	99.8	99.4	99.7	100	99.0	99.2	99.5
HV	1	1	2	1	1	2	0	6	6	10
% HV	1.1	0.2	0.3	0.2	0.6	0.3	0	1.0	0.8	0.5



VDOT
Eastern Region
Traffic Engineering

File Name : 612&199westofframp1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 6



Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	35	10	0	1	0	0	0	0	0	0	0	0	0	0	46
12:30	0	30	13	0	2	1	0	0	0	1	0	0	0	0	0	47
12:45	0	39	14	0	5	0	0	0	0	0	0	0	0	0	0	58
13:00	0	54	16	0	1	0	0	0	0	0	0	0	0	0	0	71
Hour Total	0	158	53	0	9	1	0	0	0	1	0	0	0	0	0	222
13:15	0	45	8	0	2	0	0	0	0	0	0	0	0	0	0	55
13:30	0	45	6	1	2	1	0	0	0	0	0	0	0	0	0	55
13:45	0	40	11	0	0	1	0	0	0	0	0	0	0	0	0	52
14:00	0	52	11	2	2	0	0	0	0	0	0	0	0	0	0	67
Hour Total	0	182	36	3	6	2	0	0	0	0	0	0	0	0	0	229
14:15	0	54	16	3	2	0	0	0	0	0	0	0	0	0	0	75
14:30	0	50	14	0	1	1	0	0	0	0	0	0	0	0	0	66
14:45	0	60	15	0	2	1	0	0	0	0	0	0	0	0	0	78
15:00	0	87	11	0	2	0	0	1	0	0	0	0	0	0	0	101
Hour Total	0	251	56	3	7	2	0	1	0	0	0	0	0	0	0	320
15:15	0	66	18	1	8	0	0	0	0	0	0	0	0	0	0	93
15:30	0	92	12	3	4	1	0	0	0	0	0	0	0	0	0	112
15:45	0	67	21	0	0	0	0	0	0	0	0	0	0	0	0	88
16:00	0	65	13	0	3	0	0	0	2	0	0	0	0	0	0	83
Hour Total	0	290	64	4	15	1	0	0	2	0	0	0	0	0	0	376
16:15	0	67	25	2	2	1	0	0	0	0	0	0	0	0	0	97
16:30	0	83	24	1	3	1	0	0	0	0	0	0	0	0	0	112
16:45	0	77	19	1	0	0	0	0	0	0	0	0	0	0	0	97
17:00	0	95	23	0	0	0	0	0	0	0	1	0	0	0	0	119
Hour Total	0	322	91	4	5	2	0	0	0	0	1	0	0	0	0	425
17:15	0	99	26	1	4	0	0	1	0	0	0	0	0	0	0	131
17:30	0	121	20	0	2	0	0	0	0	0	0	0	0	0	0	143
17:45	0	85	20	0	2	0	1	0	1	0	0	0	0	0	0	109
18:00	0	93	26	0	0	0	0	0	1	0	0	0	0	0	0	120
Hour Total	0	398	92	1	8	0	1	1	2	0	0	0	0	0	0	503
18:15	0	70	4	0	0	0	0	0	0	0	0	0	0	0	0	74
18:30	0	59	14	0	0	0	0	0	1	0	0	0	0	0	0	74
18:45	0	64	5	0	1	0	0	0	0	0	0	0	0	0	0	70
19:00	0	53	10	0	0	0	0	0	0	0	0	0	0	0	0	63
Hour Total	0	246	33	0	1	0	0	0	1	0	0	0	0	0	0	281
19:15	0	59	7	0	0	0	0	0	0	0	0	0	0	0	0	66
19:30	1	35	4	0	1	0	0	0	0	0	0	0	0	0	0	41
19:45	0	31	7	0	1	0	0	0	0	0	0	0	0	0	0	39
20:00	0	35	6	0	1	0	0	0	0	0	0	0	0	0	0	42
Hour Total	1	160	24	0	3	0	0	0	0	0	0	0	0	0	0	188
20:15	0	34	7	0	0	0	0	0	0	0	0	0	0	0	0	41
20:30	0	25	2	0	2	0	0	0	0	0	0	0	0	0	0	29
20:45	0	34	3	0	0	0	0	0	0	0	0	0	0	0	0	37
21:00	0	25	6	0	0	0	0	0	0	0	0	0	0	0	0	31

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	118	18	0	2	0	0	0	0	0	0	0	0	0	0	138
21:15	0	28	5	0	0	0	0	0	0	0	0	0	0	0	0	33
21:30	0	19	4	0	0	0	0	0	0	0	0	0	0	0	0	23
21:45	0	15	4	0	0	0	0	0	0	0	0	0	0	0	0	19
22:00	0	29	4	0	0	0	0	0	0	0	0	0	0	0	0	33
Hour Total	0	91	17	0	0	0	0	0	0	0	0	0	0	0	0	108
22:15	0	18	0	1	0	0	0	0	0	0	0	0	0	0	0	19
22:30	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
22:45	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
23:00	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Hour Total	0	53	0	1	0	0	0	0	0	0	0	0	0	0	0	54
23:15	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
23:30	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
23:45	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
24:00	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Hour Total	0	37	3	0	0	0	0	0	0	0	0	0	0	0	0	40
00:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
00:30	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
00:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15
01:15	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	6
01:30	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	10	2	0	1	0	0	0	0	0	0	0	0	0	0	13
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
03:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0	8
04:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
05:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
05:30	0	9	3	0	0	0	0	0	0	0	0	0	0	0	0	12
05:45	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
06:00	0	16	4	0	1	0	0	0	0	0	0	0	0	0	0	21
Hour Total	0	49	8	0	1	0	0	0	0	0	0	0	0	0	0	58
06:15	0	15	3	1	2	0	0	0	0	0	0	0	0	0	0	21
06:30	0	16	5	0	0	0	0	0	0	0	0	0	0	0	0	21
06:45	0	22	11	0	1	0	0	0	0	0	0	0	0	0	0	34
07:00	0	54	5	0	5	1	0	1	0	0	0	0	0	0	0	66
Hour Total	0	107	24	1	8	1	0	1	0	0	0	0	0	0	0	142
07:15	0	41	5	1	3	0	0	0	0	0	0	0	0	0	0	50
07:30	0	41	10	2	6	0	0	0	0	0	0	0	0	0	0	59
07:45	0	46	10	0	6	0	0	0	0	0	0	0	0	0	0	62
08:00	0	67	12	0	3	0	0	0	0	0	0	0	0	0	0	82
Hour Total	0	195	37	3	18	0	0	0	0	0	0	0	0	0	0	253
08:15	0	54	8	0	1	0	0	0	0	0	0	1	0	0	0	64
08:30	0	62	11	1	0	1	0	0	0	0	0	0	0	0	0	75
08:45	1	77	15	4	3	0	0	0	1	0	1	0	0	0	0	102
09:00	0	61	9	1	1	0	0	0	0	0	0	0	0	0	0	72
Hour Total	1	254	43	6	5	1	0	0	1	0	1	1	0	0	0	313
09:15	0	54	12	0	1	0	0	0	0	0	0	0	0	0	0	67
09:30	0	53	11	1	6	0	0	0	0	0	0	0	0	0	0	71
09:45	0	40	7	1	2	0	0	0	0	0	0	0	0	0	0	50
10:00	1	30	13	0	0	0	0	0	0	0	0	0	0	0	0	44
Hour Total	1	177	43	2	9	0	0	0	0	0	0	0	0	0	0	232
10:15	0	31	9	1	2	0	0	0	0	0	0	0	0	0	0	43
10:30	1	39	11	0	1	0	0	1	0	0	0	0	0	0	0	53
10:45	0	32	11	0	1	0	0	0	0	0	0	0	0	0	0	44
11:00	0	39	8	0	0	1	0	0	0	0	0	0	0	0	0	48
Hour Total	1	141	39	1	4	1	0	1	0	0	0	0	0	0	0	188
11:15	0	44	8	1	0	1	0	0	0	0	0	0	0	0	0	54
11:30	0	31	5	0	2	0	0	0	0	0	0	0	0	0	0	38
11:45	0	34	8	0	2	0	0	0	1	0	0	0	0	0	0	45
12:00	0	42	5	0	0	0	0	0	0	0	0	0	0	0	0	47
Hour Total	0	151	26	1	4	1	0	0	1	0	0	0	0	0	0	184
DAY TOTAL	4	3421	716	30	106	12	1	4	7	1	2	1	0	0	0	4305
PERCENTS	0.1%	79.5%	16.7%	0.7%	2.5%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 96.1% Trucks & Buses 3.8%

AM Times	09:45	08:00	08:30	08:15	07:00	10:30		06:15	08:00		08:00	07:30				08:00
AM Peaks	2	260	47	6	20	2		1	1		1	1				323
PM Times	18:45	17:00	16:30	13:30	14:45	13:00	17:00	14:15	17:45	12:15	16:15					17:15
PM Peaks	1	400	92	6	16	2	1	1	3	1	1					503

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	42	8	0	0	0	0	0	1	0	0	0	0	0	0	51
12:30	0	39	6	0	0	0	0	1	0	0	0	0	0	0	0	46
12:45	1	33	10	0	5	1	0	1	0	0	0	0	0	0	0	51
13:00	1	38	11	0	4	1	0	0	0	0	0	0	0	0	0	55
Hour Total	2	152	35	0	9	2	0	2	1	0	0	0	0	0	0	203
13:15	0	42	8	0	0	0	0	0	0	0	0	0	0	0	0	50
13:30	0	49	9	1	1	0	0	0	0	0	0	0	0	0	0	60
13:45	0	48	15	0	1	0	0	0	1	0	0	0	0	0	0	65
14:00	0	38	14	2	3	0	0	0	0	0	0	0	0	0	0	57
Hour Total	0	177	46	3	5	0	0	0	1	0	0	0	0	0	0	232
14:15	0	43	14	2	3	1	0	0	0	1	0	0	0	0	0	64
14:30	1	43	7	0	3	0	0	0	0	0	0	0	0	0	0	54
14:45	0	55	21	0	2	0	0	1	0	0	0	0	0	0	0	79
15:00	0	71	12	0	1	2	0	0	0	0	0	0	0	0	0	86
Hour Total	1	212	54	2	9	3	0	1	0	1	0	0	0	0	0	283
15:15	0	60	21	1	7	0	0	0	0	0	0	0	0	0	0	89
15:30	0	68	14	3	5	1	0	0	0	0	0	0	0	0	0	91
15:45	0	63	12	0	4	1	0	1	1	0	0	0	0	0	0	82
16:00	1	51	13	0	0	0	0	0	0	0	0	0	0	0	0	65
Hour Total	1	242	60	4	16	2	0	1	1	0	0	0	0	0	0	327
16:15	0	86	17	2	5	0	0	0	0	0	0	0	0	0	0	110
16:30	0	91	14	0	2	0	0	0	1	0	0	0	0	0	0	108
16:45	0	70	21	1	0	0	0	0	0	0	0	0	0	0	0	92
17:00	0	72	27	0	1	0	0	1	0	0	0	0	0	0	0	101
Hour Total	0	319	79	3	8	0	0	1	1	0	0	0	0	0	0	411
17:15	1	84	18	0	0	2	0	1	0	0	0	0	0	0	0	106
17:30	0	110	21	0	1	0	0	0	1	0	0	0	0	0	0	133
17:45	0	82	15	0	0	0	0	0	1	0	0	0	0	0	0	98
18:00	0	75	19	0	0	0	0	0	2	0	0	0	0	0	0	96
Hour Total	1	351	73	0	1	2	0	1	4	0	0	0	0	0	0	433
18:15	1	62	16	0	0	0	0	0	0	0	0	0	0	0	0	79
18:30	1	61	19	0	1	0	0	0	0	0	0	0	0	0	0	82
18:45	0	60	5	0	2	0	0	0	0	0	0	0	0	0	0	67
19:00	0	58	8	0	0	0	0	0	0	0	0	0	0	0	0	66
Hour Total	2	241	48	0	3	0	0	0	0	0	0	0	0	0	0	294
19:15	0	51	4	0	0	0	0	0	0	0	0	0	0	0	0	55
19:30	0	40	11	0	0	0	0	0	1	0	0	0	0	0	0	52
19:45	0	40	2	0	0	0	0	0	0	0	0	0	0	0	0	42
20:00	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	21
Hour Total	0	151	18	0	0	0	0	0	1	0	0	0	0	0	0	170
20:15	0	33	6	0	1	0	0	0	0	0	0	0	0	0	0	40
20:30	0	41	6	0	0	0	0	0	0	0	0	0	0	0	0	47
20:45	0	29	3	0	0	0	0	0	0	0	0	0	0	0	0	32
21:00	0	21	7	0	0	0	0	0	0	0	0	0	0	0	0	28

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	124	22	0	1	0	0	0	0	0	0	0	0	0	0	147
21:15	0	24	7	0	0	0	0	0	0	0	0	0	0	0	0	31
21:30	0	20	6	0	1	0	0	0	0	0	0	0	0	0	0	27
21:45	1	18	3	0	0	0	0	0	0	0	0	0	0	0	0	22
22:00	0	20	2	0	0	0	0	0	1	0	0	0	0	0	0	23
Hour Total	1	82	18	0	1	0	0	0	1	0	0	0	0	0	0	103
22:15	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	20
22:30	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10
22:45	0	13	1	0	1	0	0	0	0	0	0	0	0	0	0	15
23:00	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13
Hour Total	0	50	7	0	1	0	0	0	0	0	0	0	0	0	0	58
23:15	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
23:30	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
23:45	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	7
24:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	23	5	0	0	0	0	0	0	0	0	0	0	0	0	28
00:15	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
00:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
00:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13
01:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
03:15	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
03:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	4	2	0	1	0	0	0	0	0	0	0	0	0	0	7
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	10

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
05:30	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	14
05:45	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	16
06:00	0	24	1	0	1	0	0	1	0	0	0	0	0	0	0	27
Hour Total	0	54	8	0	1	0	0	1	0	0	0	0	0	0	0	64
06:15	0	16	2	0	1	0	0	0	0	0	0	0	0	0	0	19
06:30	0	15	4	0	1	0	0	0	0	0	0	0	0	0	0	20
06:45	0	25	9	0	0	0	0	0	0	0	0	0	0	0	0	34
07:00	0	53	9	0	3	3	0	0	1	0	0	0	0	0	0	69
Hour Total	0	109	24	0	5	3	0	0	1	0	0	0	0	0	0	142
07:15	0	43	7	0	0	0	0	0	0	0	0	0	0	0	0	50
07:30	0	44	10	4	3	0	1	1	0	0	0	0	0	0	0	63
07:45	0	52	6	0	4	0	0	0	0	0	0	0	0	0	0	62
08:00	0	62	16	0	1	0	0	0	0	0	0	0	0	0	0	79
Hour Total	0	201	39	4	8	0	1	1	0	0	0	0	0	0	0	254
08:15	0	65	13	0	1	0	0	0	0	0	0	0	0	0	0	79
08:30	0	56	17	0	0	0	0	0	0	0	0	0	0	0	0	73
08:45	1	83	20	1	5	0	0	0	1	0	0	0	0	0	0	111
09:00	0	47	13	3	2	0	0	0	0	0	0	0	0	0	0	65
Hour Total	1	251	63	4	8	0	0	0	1	0	0	0	0	0	0	328
09:15	0	43	10	0	2	0	0	1	0	0	0	0	0	0	0	56
09:30	0	46	18	2	9	0	0	1	0	0	0	0	0	0	0	76
09:45	0	43	9	0	0	0	0	1	0	0	0	0	0	0	0	53
10:00	0	44	19	1	1	0	0	0	0	0	0	0	0	0	0	65
Hour Total	0	176	56	3	12	0	0	3	0	0	0	0	0	0	0	250
10:15	0	38	15	1	1	0	0	0	0	0	0	0	0	0	0	55
10:30	0	44	7	0	1	1	0	1	0	0	0	0	0	0	0	54
10:45	0	40	7	0	1	1	0	0	0	0	0	0	0	0	0	49
11:00	0	39	4	0	1	0	0	1	0	0	0	0	0	0	0	45
Hour Total	0	161	33	1	4	2	0	2	0	0	0	0	0	0	0	203
11:15	0	52	9	0	1	0	0	0	0	0	0	0	0	0	0	62
11:30	0	37	6	0	1	0	0	0	0	0	0	0	0	0	0	44
11:45	0	43	8	0	1	0	0	0	0	0	0	0	0	0	0	52
12:00	0	45	10	0	1	1	0	0	0	0	0	0	0	0	0	57
Hour Total	0	177	33	0	4	1	0	0	0	0	0	0	0	0	0	215
DAY TOTAL	9	3295	729	24	97	15	1	13	12	1	0	0	0	0	0	4196
PERCENTS	0.3%	78.6%	17.4%	0.6%	2.3%	0.3%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 96.1% Trucks & Buses 3.8%

AM Times	08:00	08:00	08:00	08:45	08:45	06:15	06:45	09:00	06:15							08:00
AM Peaks	1	266	66	6	18	3	1	3	1							342
PM Times	12:15	17:15	16:45	13:30	15:00	15:00		12:15	17:15	13:30						17:00
PM Peaks	2	351	87	5	17	4		2	4	1						438

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	33	8	0	0	1	0	0	0	0	0	0	0	0	0	42
12:30	0	39	6	0	3	2	0	0	0	0	0	0	0	0	0	50
12:45	0	48	12	0	6	1	0	0	0	0	0	0	0	0	0	67
13:00	0	40	8	0	0	0	0	1	0	0	0	0	0	0	0	49
Hour Total	0	160	34	0	9	4	0	1	0	0	0	0	0	0	0	208
13:15	0	34	6	0	0	0	0	1	0	0	0	0	0	0	0	41
13:30	0	39	10	0	1	1	0	0	0	0	0	0	0	0	0	51
13:45	0	38	14	1	1	0	0	1	0	0	0	0	0	0	0	55
14:00	1	49	12	2	5	0	0	0	1	0	0	0	0	0	0	70
Hour Total	1	160	42	3	7	1	0	2	1	0	0	0	0	0	0	217
14:15	0	57	9	2	1	0	0	0	0	0	0	0	0	0	0	69
14:30	0	46	17	0	0	0	0	0	0	0	0	0	0	0	0	63
14:45	0	55	17	0	1	0	0	2	0	0	0	0	0	0	0	75
15:00	0	67	10	0	2	0	0	1	0	0	0	0	0	0	0	80
Hour Total	0	225	53	2	4	0	0	3	0	0	0	0	0	0	0	287
15:15	0	73	20	1	6	1	0	0	0	0	0	0	0	0	0	101
15:30	0	70	6	3	7	0	0	2	0	0	0	0	0	0	0	88
15:45	0	60	16	1	2	3	0	0	0	0	0	0	0	0	0	82
16:00	0	50	15	0	3	0	0	0	0	0	0	0	1	0	0	69
Hour Total	0	253	57	5	18	4	0	2	0	0	0	0	1	0	0	340
16:15	0	79	14	2	4	0	0	0	0	0	0	0	0	0	0	99
16:30	1	65	14	1	2	0	0	1	1	0	1	0	0	0	0	86
16:45	0	75	13	0	0	0	0	0	0	0	0	0	0	0	0	88
17:00	0	81	27	0	1	0	0	0	0	0	0	0	0	0	0	109
Hour Total	1	300	68	3	7	0	0	1	1	0	1	0	0	0	0	382
17:15	1	82	23	1	2	0	0	0	0	0	0	0	0	0	0	109
17:30	0	104	30	0	1	0	0	0	0	0	0	0	0	0	0	135
17:45	0	79	21	1	1	0	0	1	0	0	0	0	0	0	0	103
18:00	0	85	17	0	0	0	0	0	0	0	1	0	0	0	0	103
Hour Total	1	350	91	2	4	0	0	1	0	0	1	0	0	0	0	450
18:15	0	65	7	0	0	0	0	0	0	0	0	0	0	0	0	72
18:30	0	71	8	0	0	0	0	0	2	0	0	0	0	0	0	81
18:45	0	55	15	0	1	0	0	0	0	0	0	0	0	0	0	71
19:00	0	59	5	0	1	0	0	1	0	0	0	0	0	0	0	66
Hour Total	0	250	35	0	2	0	0	1	2	0	0	0	0	0	0	290
19:15	0	54	9	0	0	1	0	0	0	0	0	0	0	0	0	64
19:30	0	54	14	0	0	0	0	0	0	0	0	0	0	0	0	68
19:45	1	40	6	0	1	0	0	0	0	0	0	0	0	0	0	48
20:00	0	33	11	0	0	0	0	0	0	0	0	0	0	0	0	44
Hour Total	1	181	40	0	1	1	0	0	0	0	0	0	0	0	0	224
20:15	0	39	3	0	0	0	0	0	0	0	0	0	0	0	0	42
20:30	0	38	3	0	0	0	0	0	0	0	0	0	0	0	0	41
20:45	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23
21:00	0	30	7	0	0	0	0	0	0	0	0	0	0	0	0	37

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	130	13	0	0	0	0	0	0	0	0	0	0	0	0	143
21:15	0	34	3	0	0	0	0	0	0	0	0	0	0	0	0	37
21:30	0	22	3	0	0	0	0	0	0	0	0	0	0	0	0	25
21:45	0	36	5	0	0	0	0	0	0	0	0	0	0	0	0	41
22:00	0	24	6	0	0	0	0	0	0	0	0	0	0	0	0	30
Hour Total	0	116	17	0	0	0	0	0	0	0	0	0	0	0	0	133
22:15	0	17	3	0	0	0	0	0	0	0	0	0	0	0	0	20
22:30	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
22:45	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Hour Total	0	46	4	0	0	0	0	0	0	0	0	0	0	0	0	50
23:15	0	12	3	0	0	0	0	0	0	0	0	0	0	0	0	15
23:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
23:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
24:00	0	7	0	0	1	0	0	0	0	0	0	0	0	0	0	8
Hour Total	0	27	3	0	1	0	0	0	0	0	0	0	0	0	0	31
00:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
00:30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
00:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	18
01:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
01:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
04:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
04:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	8	3	0	0	0	0	0	0	0	0	0	0	0	0	11

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
05:30	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11
05:45	0	17	2	0	0	0	0	0	0	0	0	0	0	0	0	19
06:00	0	24	4	0	1	0	0	0	0	0	0	0	0	0	0	29
Hour Total	0	58	8	0	1	0	0	0	0	0	0	0	0	0	0	67
06:15	0	14	4	1	1	0	0	0	0	0	0	0	0	0	0	20
06:30	0	18	7	0	1	0	0	0	0	0	0	0	0	0	0	26
06:45	0	19	8	0	2	0	0	0	0	0	0	0	0	0	0	29
07:00	1	57	12	0	2	0	0	0	0	0	0	0	0	0	0	72
Hour Total	1	108	31	1	6	0	0	0	0	0	0	0	0	0	0	147
07:15	0	54	8	0	1	0	0	0	1	0	0	0	0	0	0	64
07:30	0	40	12	4	3	0	1	0	0	0	0	0	0	0	0	60
07:45	0	53	7	0	3	0	2	0	2	0	1	0	0	0	0	68
08:00	0	64	12	0	4	0	0	1	0	0	0	0	0	0	0	81
Hour Total	0	211	39	4	11	0	3	1	3	0	1	0	0	0	0	273
08:15	0	62	8	0	1	0	0	0	0	0	0	0	0	0	0	71
08:30	0	52	7	0	1	1	0	1	0	0	0	0	0	0	0	62
08:45	1	83	19	2	3	0	0	0	0	0	0	0	0	0	0	108
09:00	0	51	8	3	2	0	0	1	0	0	0	0	0	0	0	65
Hour Total	1	248	42	5	7	1	0	2	0	0	0	0	0	0	0	306
09:15	0	41	13	0	2	0	0	1	0	0	0	0	0	0	0	57
09:30	0	48	12	1	7	0	2	0	0	0	0	0	0	0	0	70
09:45	0	32	12	0	1	1	0	0	0	0	0	0	0	0	0	46
10:00	0	43	5	0	2	1	0	0	0	0	0	0	0	0	0	51
Hour Total	0	164	42	1	12	2	2	1	0	0	0	0	0	0	0	224
10:15	0	40	7	2	1	0	0	0	1	0	0	0	0	0	0	51
10:30	0	41	11	0	0	1	0	0	0	0	0	0	0	0	0	53
10:45	1	43	10	0	1	0	2	0	0	0	0	0	0	0	0	57
11:00	0	45	7	0	1	0	0	0	1	0	0	0	0	0	0	54
Hour Total	1	169	35	2	3	1	2	0	2	0	0	0	0	0	0	215
11:15	0	37	18	1	1	1	0	0	0	0	0	0	0	0	0	58
11:30	0	42	13	0	0	2	0	1	0	0	0	0	0	0	0	58
11:45	0	44	11	0	3	0	0	0	0	0	0	0	0	0	0	58
12:00	0	44	8	0	2	0	0	0	0	0	0	0	0	0	0	54
Hour Total	0	167	50	1	6	3	0	1	0	0	0	0	0	0	0	228
DAY TOTAL	7	3364	709	29	99	17	7	16	9	0	3	0	1	0	0	4261
PERCENTS	0.2%	79.0%	16.7%	0.7%	2.4%	0.4%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 95.7% Trucks & Buses 4.2%

AM Times	06:15	08:00	08:45	08:45	08:45	09:45	07:00	08:30	07:00		07:00					08:00
AM Peaks	1	261	52	6	14	3	3	3	3		1					322
PM Times	16:30	17:15	17:00	15:30	15:15	12:15		14:45	17:45		15:45		15:15			17:00
PM Peaks	2	350	101	6	18	4		5	2		1		1			456

GRAND TOTAL	20		2154		302		9		28		5		1		0	
	10080		83		44		33		2		1		0		12762	
PERCENTS	0.2%	79.0%	16.9%	0.7%	2.4%	0.4%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	1	2	9	12	17	4	1	0	0	46
12:30	0	0	0	0	0	0	2	17	21	7	0	0	0	0	47
12:45	0	0	0	0	0	0	1	16	31	8	2	0	0	0	58
13:00	0	0	0	0	0	0	2	10	36	18	4	1	0	0	71
Hour Total	0	0	0	0	0	1	7	52	100	50	10	2	0	0	222
13:15	0	0	1	0	0	0	1	10	23	17	3	0	0	0	55
13:30	0	0	0	0	1	1	3	11	22	15	2	0	0	0	55
13:45	0	0	0	0	0	1	4	11	21	12	3	0	0	0	52
14:00	0	0	0	0	0	1	4	17	31	12	2	0	0	0	67
Hour Total	0	0	1	0	1	3	12	49	97	56	10	0	0	0	229
14:15	0	0	0	0	0	0	2	23	23	26	0	1	0	0	75
14:30	0	0	0	0	0	1	11	14	19	18	3	0	0	0	66
14:45	0	0	0	0	1	0	4	20	29	21	2	0	0	1	78
15:00	0	0	0	0	0	1	3	26	44	22	5	0	0	0	101
Hour Total	0	0	0	0	1	2	20	83	115	87	10	1	0	1	320
15:15	0	0	0	0	0	0	12	33	38	10	0	0	0	0	93
15:30	0	1	0	0	0	0	16	40	42	13	0	0	0	0	112
15:45	0	0	0	0	0	2	4	14	44	20	4	0	0	0	88
16:00	0	0	0	3	1	0	9	16	31	18	5	0	0	0	83
Hour Total	0	1	0	3	1	2	41	103	155	61	9	0	0	0	376
16:15	0	0	0	0	2	0	1	23	48	19	4	0	0	0	97
16:30	0	1	0	1	0	1	6	34	40	25	3	0	0	1	112
16:45	0	0	0	0	1	2	6	18	28	35	6	0	0	1	97
17:00	0	0	1	0	6	8	5	21	45	27	5	1	0	0	119
Hour Total	0	1	1	1	9	11	18	96	161	106	18	1	0	2	425
17:15	0	0	0	0	0	2	5	27	62	29	3	0	0	3	131
17:30	0	1	0	1	5	5	8	31	62	26	4	0	0	0	143
17:45	0	0	2	2	4	4	0	26	44	25	0	0	0	2	109
18:00	0	1	1	3	1	7	12	29	40	22	3	0	0	1	120
Hour Total	0	2	3	6	10	18	25	113	208	102	10	0	0	6	503
18:15	0	0	0	1	4	4	2	23	30	5	5	0	0	0	74
18:30	0	0	0	0	2	2	3	16	25	23	2	1	0	0	74
18:45	0	0	0	0	2	2	8	15	24	17	1	1	0	0	70
19:00	0	0	0	1	4	4	4	6	24	19	1	0	0	0	63
Hour Total	0	0	0	2	12	12	17	60	103	64	9	2	0	0	281
19:15	0	0	0	0	1	4	3	12	33	9	3	1	0	0	66
19:30	1	0	0	0	3	1	5	7	12	12	0	0	0	0	41
19:45	0	0	0	0	0	0	3	7	22	6	1	0	0	0	39
20:00	0	0	0	0	0	0	1	8	19	13	0	1	0	0	42
Hour Total	1	0	0	0	4	5	12	34	86	40	4	2	0	0	188
20:15	0	0	0	0	0	0	0	9	22	8	0	1	0	1	41
20:30	0	0	0	0	0	0	1	5	8	11	2	2	0	0	29
20:45	0	0	0	2	0	0	4	8	18	5	0	0	0	0	37
21:00	0	0	0	0	0	3	10	8	5	5	0	0	0	0	31

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	2	0	3	15	30	53	29	2	3	0	1	138
21:15	0	0	0	0	1	1	2	12	11	6	0	0	0	0	33
21:30	0	0	0	1	0	1	1	4	7	7	1	1	0	0	23
21:45	0	0	0	0	0	0	2	8	7	1	1	0	0	0	19
22:00	0	0	0	0	0	0	0	12	14	7	0	0	0	0	33
Hour Total	0	0	0	1	1	2	5	36	39	21	2	1	0	0	108
22:15	0	0	0	0	0	0	1	6	6	2	2	2	0	0	19
22:30	0	0	0	1	0	1	0	1	4	2	0	0	0	0	9
22:45	0	0	0	0	0	0	0	2	8	2	0	0	0	0	12
23:00	0	0	0	0	0	0	2	3	6	2	1	0	0	0	14
Hour Total	0	0	0	1	0	1	3	12	24	8	3	2	0	0	54
23:15	0	0	0	0	0	0	1	3	6	2	0	0	0	0	12
23:30	0	0	1	0	0	1	1	2	3	2	0	0	0	0	10
23:45	0	0	0	0	0	0	1	5	3	0	0	0	0	0	9
24:00	0	0	0	0	0	1	0	3	5	0	0	0	0	0	9
Hour Total	0	0	1	0	0	2	3	13	17	4	0	0	0	0	40
00:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
00:30	0	0	0	0	0	0	0	0	3	1	1	0	0	0	5
00:45	0	1	0	0	0	0	1	1	1	0	0	0	0	0	4
01:00	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
Hour Total	0	1	0	0	0	0	1	2	9	1	1	0	0	0	15
01:15	0	0	0	0	0	0	0	3	3	0	0	0	0	0	6
01:30	0	0	0	0	0	0	0	2	1	1	0	0	0	0	4
01:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Hour Total	0	0	0	0	0	0	0	6	6	1	0	0	0	0	13
02:15	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	1	3	0	0	0	0	0	4
03:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:30	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	1	0	2	1	0	0	0	0	4
Hour Total	0	0	0	0	0	1	1	1	4	1	0	0	0	0	8
04:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
04:45	0	0	0	0	0	0	0	4	3	0	1	0	0	0	8
05:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	4	5	1	1	0	0	0	11

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	1	3	1	0	0	0	0	5
05:30	0	0	0	0	0	0	0	4	3	4	1	0	0	0	12
05:45	0	0	0	0	0	0	0	6	7	4	2	1	0	0	20
06:00	0	0	0	0	0	0	0	4	7	7	2	1	0	0	21
Hour Total	0	0	0	0	0	0	0	15	20	16	5	2	0	0	58
06:15	0	0	0	0	0	1	0	6	5	7	2	0	0	0	21
06:30	0	0	1	0	0	1	4	4	7	4	0	0	0	0	21
06:45	0	0	0	0	0	0	2	5	17	8	2	0	0	0	34
07:00	0	0	1	0	0	9	4	10	21	18	3	0	0	0	66
Hour Total	0	0	2	0	0	11	10	25	50	37	7	0	0	0	142
07:15	0	0	0	0	1	6	4	9	9	17	3	1	0	0	50
07:30	0	0	0	4	2	0	2	5	24	19	3	0	0	0	59
07:45	0	0	0	0	0	0	3	18	25	15	1	0	0	0	62
08:00	0	0	0	0	0	0	1	21	40	16	4	0	0	0	82
Hour Total	0	0	0	4	3	6	10	53	98	67	11	1	0	0	253
08:15	0	0	0	0	1	0	0	9	32	18	4	0	0	0	64
08:30	0	0	0	0	0	0	4	19	31	20	1	0	0	0	75
08:45	1	1	0	1	9	3	6	30	37	13	1	0	0	0	102
09:00	0	0	0	0	0	0	8	14	24	23	3	0	0	0	72
Hour Total	1	1	0	1	10	3	18	72	124	74	9	0	0	0	313
09:15	0	0	0	0	0	0	2	17	34	12	2	0	0	0	67
09:30	0	0	0	0	0	0	1	17	25	24	4	0	0	0	71
09:45	0	0	0	0	0	0	1	7	23	14	5	0	0	0	50
10:00	0	0	0	0	0	0	2	9	16	16	1	0	0	0	44
Hour Total	0	0	0	0	0	0	6	50	98	66	12	0	0	0	232
10:15	0	0	0	0	0	2	1	14	18	8	0	0	0	0	43
10:30	1	0	0	0	0	1	2	14	24	9	2	0	0	0	53
10:45	0	0	1	0	1	2	1	7	17	15	0	0	0	0	44
11:00	0	0	0	2	1	2	3	19	10	10	1	0	0	0	48
Hour Total	1	0	1	2	2	7	7	54	69	42	3	0	0	0	188
11:15	0	0	0	0	0	3	5	7	20	17	2	0	0	0	54
11:30	0	0	0	0	0	2	4	9	13	9	1	0	0	0	38
11:45	0	1	0	0	0	0	2	20	13	9	0	0	0	0	45
12:00	0	0	0	0	0	2	0	9	19	13	3	1	0	0	47
Hour Total	0	1	0	0	0	7	11	45	65	48	6	1	0	0	184
DAY TOTAL	3	7	9	23	54	97	242	1009	1709	982	142	18	0	10	4305
PERCENTS	0.1%	0.2%	0.3%	0.6%	1.3%	2.3%	5.6%	23.4%	39.6%	22.8%	3.2%	0.4%	0.0%	0.2%	100%

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
41.1 mph

85th Percentile Speed
52.6 mph

Median Speed
47.1 mph

Average Speed
46.4 mph

10 MPH Pace Speed
40 mph to 50 mph
2718 vehicles in pace
Representing 63.1% of the total vehicles

Vehicles > 50 MPH
1152
26.8%

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	1	0	0	0	0	2	16	19	11	1	0	0	1	51
12:30	0	0	0	0	0	2	2	11	18	11	1	1	0	0	46
12:45	1	0	0	0	0	0	2	14	26	8	0	0	0	0	51
13:00	1	0	0	0	1	0	2	9	25	16	1	0	0	0	55
Hour Total	2	1	0	0	1	2	8	50	88	46	3	1	0	1	203
13:15	0	0	0	0	0	1	3	16	13	13	4	0	0	0	50
13:30	0	0	0	0	0	0	2	17	28	11	2	0	0	0	60
13:45	0	0	1	0	0	0	1	16	25	21	1	0	0	0	65
14:00	0	1	0	0	1	0	5	19	16	15	0	0	0	0	57
Hour Total	0	1	1	0	1	1	11	68	82	60	7	0	0	0	232
14:15	0	0	1	1	1	1	6	16	22	14	1	1	0	0	64
14:30	0	0	0	0	0	0	8	17	17	12	0	0	0	0	54
14:45	0	0	0	0	0	1	0	22	40	15	1	0	0	0	79
15:00	0	0	0	0	3	6	4	13	30	22	6	2	0	0	86
Hour Total	0	0	1	1	4	8	18	68	109	63	8	3	0	0	283
15:15	0	0	0	0	0	2	7	24	37	13	5	1	0	0	89
15:30	0	0	0	1	0	4	8	16	40	21	1	0	0	0	91
15:45	0	0	0	1	0	1	3	16	34	24	2	0	0	1	82
16:00	0	0	0	0	1	0	3	12	18	27	3	1	0	0	65
Hour Total	0	0	0	2	1	7	21	68	129	85	11	2	0	1	327
16:15	0	0	0	0	1	0	1	21	54	28	5	0	0	0	110
16:30	0	1	0	2	1	0	5	23	32	39	5	0	0	0	108
16:45	0	0	0	0	0	0	2	22	43	18	6	1	0	0	92
17:00	0	0	1	0	1	0	3	26	48	20	1	0	0	1	101
Hour Total	0	1	1	2	3	0	11	92	177	105	17	1	0	1	411
17:15	0	0	0	0	0	1	1	26	51	26	1	0	0	0	106
17:30	0	0	1	3	2	0	3	20	66	34	4	0	0	0	133
17:45	0	0	1	4	4	3	2	11	46	23	4	0	0	0	98
18:00	0	0	0	3	2	3	4	14	33	31	5	1	0	0	96
Hour Total	0	0	2	10	8	7	10	71	196	114	14	1	0	0	433
18:15	0	2	0	0	4	5	6	23	20	16	3	0	0	0	79
18:30	0	0	2	0	0	1	3	14	32	26	2	1	0	1	82
18:45	0	0	0	0	0	2	7	21	20	16	1	0	0	0	67
19:00	0	0	0	0	2	9	7	19	17	8	3	1	0	0	66
Hour Total	0	2	2	0	6	17	23	77	89	66	9	2	0	1	294
19:15	0	0	0	0	0	1	6	16	21	9	2	0	0	0	55
19:30	0	0	0	0	0	2	8	8	22	11	0	0	0	1	52
19:45	0	0	0	1	1	4	1	14	15	6	0	0	0	0	42
20:00	0	0	0	0	0	2	2	6	3	6	2	0	0	0	21
Hour Total	0	0	0	1	1	9	17	44	61	32	4	0	0	1	170
20:15	0	0	0	0	0	0	1	10	18	10	1	0	0	0	40
20:30	0	0	0	0	0	0	2	18	21	5	0	0	1	0	47
20:45	0	0	0	0	0	1	3	6	16	6	0	0	0	0	32
21:00	0	0	0	0	0	3	3	13	7	2	0	0	0	0	28

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	4	9	47	62	23	1	0	1	0	147
21:15	0	0	0	0	0	2	7	11	7	3	1	0	0	0	31
21:30	0	0	0	0	0	0	4	10	7	6	0	0	0	0	27
21:45	0	0	0	0	0	0	4	8	3	7	0	0	0	0	22
22:00	0	1	0	0	0	0	2	9	5	5	1	0	0	0	23
Hour Total	0	1	0	0	0	2	17	38	22	21	2	0	0	0	103
22:15	0	0	0	0	0	0	2	7	4	6	1	0	0	0	20
22:30	0	0	0	0	0	0	1	4	4	0	0	0	1	0	10
22:45	0	0	0	0	0	1	0	7	6	0	0	1	0	0	15
23:00	0	0	0	0	0	0	0	3	7	3	0	0	0	0	13
Hour Total	0	0	0	0	0	1	3	21	21	9	1	1	1	0	58
23:15	0	0	0	0	0	0	1	3	7	1	0	0	0	0	12
23:30	0	0	0	0	0	0	1	1	3	1	0	0	0	0	6
23:45	0	0	0	0	0	0	2	0	3	2	0	0	0	0	7
24:00	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
Hour Total	0	0	0	0	0	0	4	6	14	4	0	0	0	0	28
00:15	0	0	0	0	0	0	0	2	2	1	0	0	0	0	5
00:30	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
00:45	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
01:00	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
Hour Total	0	0	0	0	0	0	0	3	7	3	0	0	0	0	13
01:15	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	1	3	3	0	0	0	0	7
02:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	3	5	3	0	0	0	0	11
02:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
02:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	2	1	1	0	0	0	0	4
Hour Total	0	0	0	0	0	1	0	5	2	1	1	0	0	0	10
03:15	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
03:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hour Total	0	0	0	0	0	0	1	1	2	3	0	0	0	0	7
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3
04:45	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
05:00	0	0	1	0	0	0	0	2	1	0	0	0	0	0	4
Hour Total	0	0	1	0	0	0	1	5	2	1	0	0	0	0	10

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	1	3	2	1	0	0	0	7
05:30	0	0	0	0	0	0	1	3	7	3	0	0	0	0	14
05:45	0	0	0	0	0	0	0	4	5	5	1	1	0	0	16
06:00	0	0	0	0	0	0	1	7	10	8	1	0	0	0	27
Hour Total	0	0	0	0	0	0	2	15	25	18	3	1	0	0	64
06:15	0	0	0	0	0	0	0	5	7	6	1	0	0	0	19
06:30	0	0	0	0	0	0	2	5	5	6	1	0	0	1	20
06:45	0	0	0	0	0	0	2	2	17	7	5	1	0	0	34
07:00	0	0	1	0	5	5	2	12	17	23	4	0	0	0	69
Hour Total	0	0	1	0	5	5	6	24	46	42	11	1	0	1	142
07:15	0	0	0	0	0	0	2	7	20	16	5	0	0	0	50
07:30	0	0	0	0	0	0	4	18	28	9	1	2	0	1	63
07:45	0	0	0	0	2	1	2	20	17	15	5	0	0	0	62
08:00	0	0	0	0	0	0	10	8	34	22	5	0	0	0	79
Hour Total	0	0	0	0	2	1	18	53	99	62	16	2	0	1	254
08:15	0	0	0	1	2	1	1	8	26	36	4	0	0	0	79
08:30	2	0	1	1	4	1	9	20	21	14	0	0	0	0	73
08:45	0	0	0	0	0	1	11	44	43	10	2	0	0	0	111
09:00	0	0	0	0	0	0	2	16	34	12	1	0	0	0	65
Hour Total	2	0	1	2	6	3	23	88	124	72	7	0	0	0	328
09:15	0	0	0	0	0	1	4	19	23	9	0	0	0	0	56
09:30	0	0	0	0	0	1	1	26	37	10	1	0	0	0	76
09:45	0	0	0	0	0	0	4	17	12	19	1	0	0	0	53
10:00	0	0	0	0	1	0	1	23	23	12	5	0	0	0	65
Hour Total	0	0	0	0	1	2	10	85	95	50	7	0	0	0	250
10:15	0	1	0	0	0	0	3	17	24	9	1	0	0	0	55
10:30	0	0	0	0	0	1	2	21	15	14	1	0	0	0	54
10:45	0	0	0	0	0	1	0	9	24	13	1	1	0	0	49
11:00	0	0	0	0	0	1	2	13	18	7	4	0	0	0	45
Hour Total	0	1	0	0	0	3	7	60	81	43	7	1	0	0	203
11:15	0	0	0	0	0	0	6	16	30	8	2	0	0	0	62
11:30	0	0	0	0	0	1	3	8	22	7	3	0	0	0	44
11:45	0	1	0	0	1	2	1	10	22	12	3	0	0	0	52
12:00	0	0	0	0	0	1	3	7	31	11	3	0	0	1	57
Hour Total	0	1	0	0	1	4	13	41	105	38	11	0	0	1	215
DAY TOTAL	4	8	10	18	40	77	233	1033	1643	964	140	16	2	8	4196
PERCENTS	0.1%	0.2%	0.3%	0.5%	1.0%	1.9%	5.6%	24.7%	39.1%	22.9%	3.3%	0.3%	0.0%	0.1%	100%

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
41.2 mph

85th Percentile Speed
52.6 mph

Median Speed
47.1 mph

Average Speed
46.5 mph

10 MPH Pace Speed
40 mph to 50 mph
2676 vehicles in pace
Representing 63.7% of the total vehicles

Vehicles > 50 MPH
1130
26.9%

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	0	5	14	16	6	1	0	0	0	42
12:30	0	0	0	1	0	0	1	9	23	15	0	0	0	1	50
12:45	0	0	1	1	4	3	9	20	22	5	2	0	0	0	67
13:00	0	0	0	0	0	0	3	12	21	10	3	0	0	0	49
Hour Total	0	0	1	2	4	3	18	55	82	36	6	0	0	1	208
13:15	0	0	0	0	0	0	3	10	15	8	4	1	0	0	41
13:30	0	0	0	0	0	0	2	9	26	13	0	0	0	1	51
13:45	0	0	0	0	0	0	1	10	22	20	2	0	0	0	55
14:00	0	0	0	0	0	0	2	18	30	20	0	0	0	0	70
Hour Total	0	0	0	0	0	0	8	47	93	61	6	1	0	1	217
14:15	0	0	0	0	0	0	1	17	30	13	8	0	0	0	69
14:30	0	1	0	0	0	0	7	19	25	6	4	1	0	0	63
14:45	0	0	0	0	0	0	2	26	33	12	1	1	0	0	75
15:00	0	0	0	1	0	3	1	31	27	13	4	0	0	0	80
Hour Total	0	1	0	1	0	3	11	93	115	44	17	2	0	0	287
15:15	0	0	0	0	1	2	4	34	35	20	4	0	1	0	101
15:30	0	0	0	0	0	0	5	22	37	19	3	1	0	1	88
15:45	0	0	0	0	0	0	0	24	37	18	2	0	0	1	82
16:00	0	0	0	0	2	2	2	9	33	17	4	0	0	0	69
Hour Total	0	0	0	0	3	4	11	89	142	74	13	1	1	2	340
16:15	0	0	0	0	0	2	7	24	40	24	1	1	0	0	99
16:30	1	0	1	1	5	1	5	22	27	22	1	0	0	0	86
16:45	0	0	0	0	0	1	6	15	40	23	3	0	0	0	88
17:00	0	0	0	0	2	5	12	18	40	28	4	0	0	0	109
Hour Total	1	0	1	1	7	9	30	79	147	97	9	1	0	0	382
17:15	0	0	1	0	0	2	4	23	43	31	4	1	0	0	109
17:30	0	0	1	0	0	2	5	16	67	43	1	0	0	0	135
17:45	0	0	0	0	0	0	8	26	40	28	1	0	0	0	103
18:00	0	0	1	1	3	0	2	22	42	31	1	0	0	0	103
Hour Total	0	0	3	1	3	4	19	87	192	133	7	1	0	0	450
18:15	0	0	0	0	2	0	3	23	26	16	2	0	0	0	72
18:30	0	0	0	4	2	1	1	12	31	28	2	0	0	0	81
18:45	0	0	0	0	0	0	3	9	39	19	0	0	0	1	71
19:00	0	0	0	0	0	0	1	15	26	20	4	0	0	0	66
Hour Total	0	0	0	4	4	1	8	59	122	83	8	0	0	1	290
19:15	0	0	0	0	0	0	3	15	32	10	4	0	0	0	64
19:30	0	0	0	0	0	0	1	18	30	15	4	0	0	0	68
19:45	0	0	0	0	0	0	7	8	22	11	0	0	0	0	48
20:00	0	0	0	0	0	0	3	13	15	11	2	0	0	0	44
Hour Total	0	0	0	0	0	0	14	54	99	47	10	0	0	0	224
20:15	0	0	0	0	2	0	1	6	19	11	3	0	0	0	42
20:30	0	0	0	0	0	2	3	15	15	4	2	0	0	0	41
20:45	0	0	0	0	0	1	3	9	7	3	0	0	0	0	23
21:00	0	0	0	0	0	0	6	13	15	2	1	0	0	0	37

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	2	3	13	43	56	20	6	0	0	0	143
21:15	0	0	0	0	0	0	5	13	18	1	0	0	0	0	37
21:30	0	0	0	0	0	0	2	8	10	4	1	0	0	0	25
21:45	0	0	0	0	0	1	2	14	19	4	1	0	0	0	41
22:00	0	0	0	0	0	1	3	9	12	4	0	0	0	1	30
Hour Total	0	0	0	0	0	2	12	44	59	13	2	0	0	1	133
22:15	0	0	0	0	0	0	1	8	9	1	0	0	1	0	20
22:30	0	0	0	0	0	0	1	4	5	0	0	0	0	0	10
22:45	0	0	0	0	0	0	1	3	6	1	0	0	0	0	11
23:00	0	0	0	0	0	0	0	4	3	2	0	0	0	0	9
Hour Total	0	0	0	0	0	0	3	19	23	4	0	0	1	0	50
23:15	0	0	1	0	0	0	0	6	3	3	2	0	0	0	15
23:30	0	0	1	0	0	0	1	2	2	0	0	0	0	0	6
23:45	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
24:00	0	0	0	0	0	0	1	3	3	1	0	0	0	0	8
Hour Total	0	0	2	0	0	0	2	12	9	4	2	0	0	0	31
00:15	0	0	0	0	0	0	0	2	0	0	1	0	0	0	3
00:30	0	0	0	0	0	0	0	2	2	1	0	0	0	0	5
00:45	0	0	0	0	0	0	0	2	2	1	0	0	0	0	5
01:00	0	0	0	0	0	0	0	0	3	2	0	0	0	0	5
Hour Total	0	0	0	0	0	0	0	6	7	4	1	0	0	0	18
01:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
01:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3
Hour Total	0	0	0	0	0	0	0	2	3	1	0	0	0	0	6
02:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	0	1	2	0	1	0	0	0	0	4
03:15	0	0	0	0	1	0	0	1	0	0	1	0	0	0	3
03:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Hour Total	0	0	0	0	1	0	1	1	2	0	2	0	0	0	7
04:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:30	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4
04:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
05:00	0	0	0	0	0	0	0	1	2	0	0	0	0	1	4
Hour Total	0	0	0	0	0	0	2	4	4	0	0	0	0	1	11

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	1	3	2	2	0	0	0	0	8
05:30	0	0	0	0	0	0	1	3	7	0	0	0	0	0	11
05:45	0	0	0	1	0	0	0	4	12	2	0	0	0	0	19
06:00	0	0	0	0	0	1	0	6	7	12	2	1	0	0	29
Hour Total	0	0	0	1	0	1	2	16	28	16	2	1	0	0	67
06:15	0	0	0	0	0	0	0	2	12	5	1	0	0	0	20
06:30	0	0	0	0	0	0	2	4	11	5	3	0	0	1	26
06:45	0	0	0	0	0	1	1	4	10	11	1	0	0	1	29
07:00	1	0	1	0	0	0	2	14	33	15	4	1	0	1	72
Hour Total	1	0	1	0	0	1	5	24	66	36	9	1	0	3	147
07:15	0	0	0	0	0	7	8	14	28	6	1	0	0	0	64
07:30	0	0	0	0	1	4	3	16	20	15	1	0	0	0	60
07:45	0	0	0	0	0	1	8	16	26	16	1	0	0	0	68
08:00	0	0	0	0	0	0	4	20	33	20	4	0	0	0	81
Hour Total	0	0	0	0	1	12	23	66	107	57	7	0	0	0	273
08:15	0	0	0	0	0	3	4	7	31	24	2	0	0	0	71
08:30	0	0	0	0	0	0	7	25	19	10	0	0	0	1	62
08:45	1	0	2	2	1	1	12	36	35	18	0	0	0	0	108
09:00	0	0	0	0	0	0	4	19	20	20	2	0	0	0	65
Hour Total	1	0	2	2	1	4	27	87	105	72	4	0	0	1	306
09:15	0	0	0	0	0	0	4	11	27	12	2	0	0	1	57
09:30	0	0	0	0	0	0	7	15	32	16	0	0	0	0	70
09:45	0	0	0	0	0	0	0	15	20	10	1	0	0	0	46
10:00	0	0	0	0	0	0	5	8	17	19	2	0	0	0	51
Hour Total	0	0	0	0	0	0	16	49	96	57	5	0	0	1	224
10:15	0	1	0	0	0	1	1	16	18	11	3	0	0	0	51
10:30	0	0	0	0	0	0	8	14	20	11	0	0	0	0	53
10:45	1	0	0	0	0	0	2	22	19	10	3	0	0	0	57
11:00	0	0	0	0	0	1	4	14	25	7	2	1	0	0	54
Hour Total	1	1	0	0	0	2	15	66	82	39	8	1	0	0	215
11:15	0	0	0	0	1	1	1	23	18	12	1	1	0	0	58
11:30	0	0	0	0	0	0	0	18	28	11	1	0	0	0	58
11:45	0	0	1	0	0	0	3	17	24	11	1	0	1	0	58
12:00	0	0	0	1	0	0	2	10	25	12	4	0	0	0	54
Hour Total	0	0	1	1	1	1	6	68	95	46	7	1	1	0	228
DAY TOTAL	4	2	11	13	27	50	247	1072	1734	945	131	10	3	12	4261
PERCENTS	0.1%	0.1%	0.3%	0.4%	0.7%	1.2%	5.8%	25.2%	40.7%	22.1%	3.0%	0.2%	0.0%	0.2%	100%

Site Reference: Site A
Site ID: 000000003554
Location: Longhill, btw Burlington & Ford Colony
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
GRAND TOTAL	11		30		121		722		5086		413		5		
	17		54		224		3114		2891		44		30		12762
PERCENTS	0.1%	0.2%	0.3%	0.5%	1.0%	1.8%	5.6%	24.4%	39.8%	22.6%	3.2%	0.3%	0.0%	0.2%	100%

Statistical Information...

15th Percentile Speed
41.3 mph

85th Percentile Speed
52.5 mph

Median Speed
47.0 mph

Average Speed
46.6 mph

10 MPH Pace Speed
40 mph to 50 mph
2806 vehicles in pace
Representing 65.8% of the total vehicles

Vehicles > 50 MPH
1101
25.8%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	47	6	0	2	0	0	0	0	0	0	0	0	0	0	55
12:30	0	39	9	0	5	1	0	0	0	0	0	0	0	0	0	54
12:45	0	55	13	0	0	1	0	1	1	0	0	0	0	0	0	71
13:00	1	42	9	0	1	0	0	0	0	1	1	0	0	0	0	55
Hour Total	1	183	37	0	8	2	0	1	1	1	1	0	0	0	0	235
13:15	0	53	10	0	2	1	0	0	0	0	0	0	0	0	0	66
13:30	1	59	15	0	2	0	0	0	0	0	0	0	0	0	0	77
13:45	0	51	7	0	0	1	0	0	0	0	0	0	0	0	0	59
14:00	0	43	11	0	2	0	0	1	0	0	0	0	0	0	0	57
Hour Total	1	206	43	0	6	2	0	1	0	0	0	0	0	0	0	259
14:15	0	47	9	0	3	1	0	0	0	0	0	0	0	0	0	60
14:30	0	64	18	0	4	3	0	0	0	0	0	0	0	0	0	89
14:45	0	61	13	0	2	1	0	0	0	0	0	0	0	0	0	77
15:00	1	71	9	0	4	0	0	0	0	0	0	0	0	0	0	85
Hour Total	1	243	49	0	13	5	0	0	0	0	0	0	0	0	0	311
15:15	0	84	15	0	3	0	1	0	0	0	0	0	0	0	0	103
15:30	0	55	16	0	5	0	0	0	0	0	0	0	0	0	0	76
15:45	0	67	17	0	4	1	0	0	0	0	0	0	0	0	0	89
16:00	1	71	12	0	4	2	0	0	0	0	0	0	0	0	0	90
Hour Total	1	277	60	0	16	3	1	0	0	0	0	0	0	0	0	358
16:15	1	82	13	0	1	0	0	0	0	0	0	0	0	0	0	97
16:30	0	71	11	0	2	0	0	0	0	0	0	0	0	0	0	84
16:45	1	79	13	0	3	1	0	0	1	0	0	0	0	0	0	98
17:00	1	83	12	0	0	0	0	0	1	0	0	0	0	0	0	97
Hour Total	3	315	49	0	6	1	0	0	2	0	0	0	0	0	0	376
17:15	2	88	18	0	2	1	0	0	0	0	0	0	0	0	0	111
17:30	2	87	16	0	3	0	0	0	0	0	0	0	0	0	0	108
17:45	1	88	12	0	0	0	0	0	0	0	0	0	0	0	0	101
18:00	0	69	5	0	0	0	0	0	0	0	0	0	0	0	0	74
Hour Total	5	332	51	0	5	1	0	0	0	0	0	0	0	0	0	394
18:15	0	67	5	0	0	0	0	1	0	0	0	0	0	0	0	73
18:30	0	62	6	0	1	1	0	0	0	0	0	0	0	0	0	70
18:45	0	77	18	0	0	0	0	0	0	0	0	0	0	0	0	95
19:00	1	73	14	0	0	0	0	0	0	0	0	0	0	0	0	88
Hour Total	1	279	43	0	1	1	0	1	0	0	0	0	0	0	0	326
19:15	0	72	7	0	1	0	0	0	0	0	0	0	0	0	0	80
19:30	1	84	18	0	0	0	0	0	0	0	0	0	0	0	0	103
19:45	1	60	6	0	0	0	0	0	0	0	0	0	0	0	0	67
20:00	1	44	3	0	1	0	0	0	0	0	0	0	0	0	0	49
Hour Total	3	260	34	0	2	0	0	0	0	0	0	0	0	0	0	299
20:15	0	47	5	0	0	0	0	0	0	0	0	0	0	0	0	52
20:30	0	46	8	0	0	0	0	0	0	0	0	0	0	0	0	54
20:45	0	47	2	0	0	0	0	0	0	0	0	0	0	0	0	49
21:00	0	55	6	0	0	0	0	0	0	0	0	0	0	0	0	61

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	195	21	0	0	0	0	0	0	0	0	0	0	0	0	216
21:15	0	41	5	0	0	0	0	0	0	0	0	0	0	0	0	46
21:30	0	54	7	0	0	0	0	0	0	0	0	0	0	0	0	61
21:45	0	36	9	0	1	0	0	0	0	0	0	0	0	0	0	46
22:00	0	25	1	0	0	0	0	0	0	0	0	0	0	0	0	26
Hour Total	0	156	22	0	1	0	0	0	0	0	0	0	0	0	0	179
22:15	0	29	3	0	1	0	0	0	0	0	0	0	0	0	0	33
22:30	1	26	0	0	0	1	0	0	0	0	0	0	0	0	0	28
22:45	0	23	2	0	0	0	0	0	0	0	0	0	0	0	0	25
23:00	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
Hour Total	1	97	6	0	1	1	0	0	0	0	0	0	0	0	0	106
23:15	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	18
23:30	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
23:45	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	18
24:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	55	1	0	0	0	0	0	0	0	0	0	0	0	0	56
00:15	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
00:30	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
00:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	21	2	0	0	0	0	0	0	0	0	0	0	0	0	23
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
03:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
04:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
05:30	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
05:45	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11
06:00	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	16
Hour Total	0	36	4	0	0	0	0	0	0	0	0	0	0	0	0	40
06:15	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10
06:30	0	8	4	0	2	1	0	0	0	0	0	0	0	0	0	15
06:45	0	23	2	0	4	0	0	0	0	0	0	0	0	0	0	29
07:00	0	25	4	0	4	0	0	0	0	0	0	0	0	0	0	33
Hour Total	0	65	11	0	10	1	0	0	0	0	0	0	0	0	0	87
07:15	0	54	4	0	5	0	0	0	0	0	0	0	0	0	0	63
07:30	0	41	11	0	0	2	0	0	0	0	0	0	0	0	0	54
07:45	0	50	9	2	4	1	0	0	0	0	0	0	0	0	0	66
08:00	0	73	13	0	5	0	0	0	0	0	0	0	0	0	0	91
Hour Total	0	218	37	2	14	3	0	0	0	0	0	0	0	0	0	274
08:15	0	50	11	0	4	1	0	0	0	0	0	0	0	0	0	66
08:30	1	59	12	0	7	3	0	0	0	0	0	0	0	0	0	82
08:45	0	51	10	0	3	1	0	0	0	0	0	0	0	0	0	65
09:00	0	61	9	0	7	2	0	0	0	0	0	0	0	0	0	79
Hour Total	1	221	42	0	21	7	0	0	0	0	0	0	0	0	0	292
09:15	0	41	11	0	3	1	0	0	0	0	0	0	0	0	0	56
09:30	0	32	9	0	4	0	0	1	0	0	0	0	0	0	0	46
09:45	0	31	6	0	1	0	0	0	0	0	0	0	0	0	0	38
10:00	0	46	10	0	0	0	0	1	0	0	0	0	0	0	0	57
Hour Total	0	150	36	0	8	1	0	2	0	0	0	0	0	0	0	197
10:15	0	35	5	0	2	0	0	0	0	0	0	0	0	0	0	42
10:30	0	40	7	0	5	1	0	0	0	0	0	0	0	0	0	53
10:45	2	44	12	0	1	0	0	0	0	0	0	0	0	0	0	59
11:00	0	45	6	0	0	0	0	0	0	0	0	0	0	0	0	51
Hour Total	2	164	30	0	8	1	0	0	0	0	0	0	0	0	0	205
11:15	0	40	9	1	1	2	0	0	0	0	0	0	0	0	0	53
11:30	0	38	10	0	1	1	0	0	0	0	0	0	0	0	0	50
11:45	0	46	10	0	1	0	0	0	0	0	0	0	0	0	0	57
12:00	0	43	7	0	4	0	0	0	0	0	0	0	0	0	0	54
Hour Total	0	167	36	1	7	3	0	0	0	0	0	0	0	0	0	214
DAY TOTAL	20	3668	616	3	127	32	1	5	3	1	1	0	0	0	0	4477
PERCENTS	0.5%	82.0%	13.8%	0.1%	2.8%	0.7%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 96.1% Trucks & Buses 3.8%

AM Times	10:00	08:00	08:00	07:00	08:15	08:15		09:15								07:45
AM Peaks	2	233	46	2	21	7		2								305
PM Times	16:45	17:00	15:15		15:00	13:45	14:30	12:15	16:15	12:15	12:15					17:00
PM Peaks	6	346	60		16	5	1	1	2	1	1					417

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	47	9	0	0	1	1	0	0	0	0	0	0	0	0	58
12:30	0	48	14	0	3	0	0	0	0	0	0	0	0	0	0	65
12:45	0	48	10	0	2	0	0	1	0	0	0	0	0	0	0	61
13:00	0	37	8	0	1	0	0	0	0	1	0	0	0	0	0	47
Hour Total	0	180	41	0	6	1	1	1	0	1	0	0	0	0	0	231
13:15	0	41	7	0	2	0	0	1	0	0	0	0	0	0	0	51
13:30	0	47	15	0	2	0	0	0	0	0	0	0	0	0	0	64
13:45	0	57	8	0	1	0	0	0	0	0	0	0	0	0	0	66
14:00	0	45	7	0	1	0	1	0	0	0	0	0	0	0	0	54
Hour Total	0	190	37	0	6	0	1	1	0	0	0	0	0	0	0	235
14:15	0	72	16	0	4	1	0	0	0	0	0	0	0	0	0	93
14:30	0	65	13	0	4	3	1	0	0	0	0	0	0	0	0	86
14:45	1	66	11	0	3	0	0	0	0	0	0	0	0	0	0	81
15:00	0	77	13	0	7	1	1	0	0	0	0	0	0	0	0	99
Hour Total	1	280	53	0	18	5	2	0	0	0	0	0	0	0	0	359
15:15	0	70	13	0	1	1	0	1	0	0	0	0	0	0	0	86
15:30	0	58	17	0	4	2	0	0	0	0	0	0	0	0	0	81
15:45	0	66	14	2	3	0	0	0	0	0	0	0	0	0	0	85
16:00	0	74	11	0	4	0	0	0	0	1	0	0	0	0	0	90
Hour Total	0	268	55	2	12	3	0	1	0	1	0	0	0	0	0	342
16:15	2	50	8	0	0	2	0	0	0	0	0	0	0	0	0	62
16:30	0	58	12	0	4	0	0	1	0	0	0	0	0	0	0	75
16:45	0	90	11	0	2	0	0	0	0	0	0	0	0	0	0	103
17:00	0	73	19	0	2	0	1	0	0	0	0	0	0	0	0	95
Hour Total	2	271	50	0	8	2	1	1	0	0	0	0	0	0	0	335
17:15	5	64	14	0	2	2	0	0	0	0	0	0	0	0	0	87
17:30	1	85	9	0	1	0	0	0	0	0	0	0	0	0	0	96
17:45	0	73	6	0	1	0	0	0	0	0	0	0	0	0	0	80
18:00	0	86	11	0	0	0	0	0	0	0	0	0	0	0	0	97
Hour Total	6	308	40	0	4	2	0	0	0	0	0	0	0	0	0	360
18:15	2	57	9	0	0	0	0	1	0	0	0	0	0	0	0	69
18:30	2	56	4	0	1	0	0	0	0	0	0	0	0	0	0	63
18:45	1	41	4	0	0	0	0	0	0	0	0	0	0	0	0	46
19:00	1	45	7	0	0	1	0	0	0	0	0	0	0	0	0	54
Hour Total	6	199	24	0	1	1	0	1	0	0	0	0	0	0	0	232
19:15	2	78	5	0	0	0	0	0	0	0	0	0	0	0	0	85
19:30	1	88	14	0	1	0	0	0	0	0	0	0	0	0	0	104
19:45	0	82	13	0	0	1	0	0	0	0	0	0	0	0	0	96
20:00	0	45	5	0	1	0	0	0	0	0	0	0	0	0	0	51
Hour Total	3	293	37	0	2	1	0	0	0	0	0	0	0	0	0	336
20:15	0	46	5	0	0	0	0	0	0	0	0	0	0	0	0	51
20:30	0	37	9	0	0	0	0	0	0	0	0	0	0	0	0	46
20:45	0	39	5	0	0	0	0	0	0	0	0	0	0	0	0	44
21:00	0	48	9	0	0	0	0	1	0	0	0	0	0	0	0	58

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	170	28	0	0	0	0	1	0	0	0	0	0	0	0	199
21:15	0	46	4	0	0	0	0	0	0	0	0	0	0	0	0	50
21:30	0	29	4	0	0	0	0	0	0	0	0	0	0	0	0	33
21:45	0	28	3	0	0	0	0	0	0	0	0	0	0	0	0	31
22:00	0	28	1	0	0	0	0	0	0	0	0	0	0	0	0	29
Hour Total	0	131	12	0	0	0	0	0	0	0	0	0	0	0	0	143
22:15	0	27	2	0	0	0	0	0	0	0	0	0	0	0	0	29
22:30	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
22:45	0	15	2	0	1	0	0	0	0	0	0	0	0	0	0	18
23:00	0	16	2	0	0	0	0	0	0	0	0	0	0	0	0	18
Hour Total	0	77	7	0	1	0	0	0	0	0	0	0	0	0	0	85
23:15	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
23:30	0	17	2	0	0	0	0	0	0	0	0	0	0	0	0	19
23:45	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
24:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Hour Total	0	55	3	0	0	0	0	0	0	0	0	0	0	0	0	58
00:15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
00:30	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
00:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	21	1	0	0	0	0	0	0	0	0	0	0	0	0	22
01:15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:45	0	4	0	0	1	0	0	0	0	0	0	0	0	0	0	5
02:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
Hour Total	0	18	1	0	1	0	0	0	0	0	0	0	0	0	0	20
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
03:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
05:30	0	11	0	0	0	0	0	1	0	0	0	0	0	0	0	12
05:45	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
06:00	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Hour Total	0	38	1	0	0	0	0	1	0	0	0	0	0	0	0	40
06:15	0	10	3	0	0	0	0	0	0	0	0	0	0	0	0	13
06:30	0	11	2	0	2	1	0	1	0	0	0	0	0	0	0	17
06:45	0	23	2	0	3	1	0	0	0	0	0	0	0	0	0	29
07:00	0	33	5	0	2	0	0	0	0	0	0	0	0	0	0	40
Hour Total	0	77	12	0	7	2	0	1	0	0	0	0	0	0	0	99
07:15	0	35	5	0	3	2	0	0	0	0	0	0	0	0	0	45
07:30	0	51	5	0	1	1	0	0	0	0	0	0	0	0	0	58
07:45	0	51	13	0	3	2	0	0	0	0	0	0	0	0	0	69
08:00	0	77	9	0	3	1	0	0	0	0	0	0	0	0	0	90
Hour Total	0	214	32	0	10	6	0	0	0	0	0	0	0	0	0	262
08:15	0	50	13	0	5	1	0	0	0	0	0	0	0	0	0	69
08:30	0	67	14	0	6	3	0	0	0	0	0	0	0	0	0	90
08:45	1	49	5	0	1	1	0	0	0	0	0	0	0	0	0	57
09:00	0	52	10	1	4	2	0	0	0	0	0	0	0	0	0	69
Hour Total	1	218	42	1	16	7	0	0	0	0	0	0	0	0	0	285
09:15	0	46	10	0	4	1	1	0	0	0	0	0	0	0	0	62
09:30	0	45	11	0	4	2	0	0	0	0	0	0	0	0	0	62
09:45	1	49	11	0	2	0	0	0	0	0	0	0	0	0	0	63
10:00	0	41	13	0	0	0	0	0	0	0	0	0	0	0	0	54
Hour Total	1	181	45	0	10	3	1	0	0	0	0	0	0	0	0	241
10:15	0	36	12	0	0	0	1	0	1	0	0	0	0	0	0	50
10:30	0	32	9	0	3	2	0	0	0	0	0	0	0	0	0	46
10:45	0	46	10	0	1	0	0	0	0	0	0	0	0	0	0	57
11:00	0	37	5	0	2	0	0	0	0	0	0	0	0	0	0	44
Hour Total	0	151	36	0	6	2	1	0	1	0	0	0	0	0	0	197
11:15	0	44	8	0	2	0	0	0	0	0	0	0	0	0	0	54
11:30	0	41	4	0	1	0	0	0	0	0	0	0	0	0	0	46
11:45	0	34	14	0	1	0	0	0	0	0	0	0	0	0	0	49
12:00	0	41	14	0	2	1	1	0	0	0	0	0	0	0	0	59
Hour Total	0	160	40	0	6	1	1	0	0	0	0	0	0	0	0	208
DAY TOTAL	20	3521	599	3	114	36	8	8	1	2	0	0	0	0	0	4312
PERCENTS	0.5%	81.7%	13.9%	0.1%	2.7%	0.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 96.0% Trucks & Buses 3.9%

AM Times	08:00	07:45	07:45	08:15	07:45	07:45	08:30	04:45	09:30							07:45
AM Peaks	1	245	49	1	17	7	1	1	1							318
PM Times	16:45	16:45	15:00	15:00	14:15	14:15	13:45	12:30		12:15						16:45
PM Peaks	6	312	57	2	18	5	2	2		1						381

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	48	8	0	1	1	0	0	0	0	0	0	0	0	0	58
12:30	0	47	15	0	3	0	1	0	0	0	0	0	0	0	0	66
12:45	0	45	9	0	0	1	0	0	0	0	0	0	0	0	0	55
13:00	0	51	15	0	1	0	0	0	0	0	0	0	0	0	0	67
Hour Total	0	191	47	0	5	2	1	0	0	0	0	0	0	0	0	246
13:15	2	39	13	0	0	1	0	0	0	0	0	0	0	0	0	55
13:30	0	51	6	0	2	0	1	0	0	0	0	0	0	0	0	60
13:45	0	43	12	0	1	0	0	0	0	0	0	0	0	0	0	56
14:00	0	44	15	0	3	0	0	0	0	0	0	0	0	0	0	62
Hour Total	2	177	46	0	6	1	1	0	0	0	0	0	0	0	0	233
14:15	0	52	8	0	4	0	0	0	0	0	0	0	0	0	0	64
14:30	0	47	12	0	7	1	0	0	0	0	0	0	0	0	0	67
14:45	0	65	21	0	3	0	0	0	0	0	0	0	0	0	0	89
15:00	0	77	14	0	4	0	1	1	0	0	0	0	0	0	0	97
Hour Total	0	241	55	0	18	1	1	1	0	0	0	0	0	0	0	317
15:15	0	68	9	0	3	0	0	0	0	0	0	0	0	0	0	80
15:30	0	62	14	0	5	0	0	0	0	0	0	0	0	0	0	81
15:45	0	63	11	1	3	0	0	0	0	0	0	0	0	0	0	78
16:00	0	64	18	0	3	0	0	0	0	0	0	0	0	0	0	85
Hour Total	0	257	52	1	14	0	0	0	0	0	0	0	0	0	0	324
16:15	1	68	14	0	1	0	0	0	0	0	0	0	0	0	0	84
16:30	3	70	13	0	6	1	0	2	0	0	0	0	0	0	0	95
16:45	2	86	15	0	2	0	1	0	0	0	0	0	0	0	0	106
17:00	0	81	5	0	2	2	0	0	0	0	0	0	0	0	0	90
Hour Total	6	305	47	0	11	3	1	2	0	0	0	0	0	0	0	375
17:15	1	75	10	2	2	1	0	1	0	0	0	0	0	0	0	92
17:30	1	80	14	0	1	0	0	0	0	0	0	0	0	0	0	96
17:45	0	87	6	0	1	1	1	0	0	0	0	0	0	0	0	96
18:00	2	66	14	0	0	0	0	0	0	0	0	0	0	0	0	82
Hour Total	4	308	44	2	4	2	1	1	0	0	0	0	0	0	0	366
18:15	0	66	10	0	0	0	1	0	0	0	0	0	0	0	0	77
18:30	0	48	14	0	0	1	0	0	0	0	0	0	0	0	0	63
18:45	0	79	6	0	1	0	0	0	1	0	0	0	0	0	0	87
19:00	0	58	14	0	0	1	0	0	0	0	0	0	0	0	0	73
Hour Total	0	251	44	0	1	2	1	0	1	0	0	0	0	0	0	300
19:15	1	76	15	0	0	0	0	0	0	0	0	0	0	0	0	92
19:30	0	67	17	0	1	0	0	0	0	0	0	0	0	0	0	85
19:45	0	81	11	0	0	0	0	0	0	0	0	0	0	0	0	92
20:00	0	53	4	0	0	0	0	0	0	0	0	0	0	0	0	57
Hour Total	1	277	47	0	1	0	0	0	0	0	0	0	0	0	0	326
20:15	2	44	5	0	0	0	0	0	0	0	0	0	0	0	0	51
20:30	0	49	2	0	0	1	0	0	0	0	0	0	0	0	0	52
20:45	0	40	8	0	0	0	0	0	0	0	0	0	0	0	0	48
21:00	0	52	7	0	0	0	0	0	0	0	0	0	0	0	0	59

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	2	185	22	0	0	1	0	0	0	0	0	0	0	0	0	210
21:15	1	38	4	0	0	0	0	0	0	0	0	0	0	0	0	43
21:30	0	52	10	0	0	0	0	0	0	0	0	0	0	0	0	62
21:45	1	43	5	0	0	0	0	0	0	0	0	0	0	0	0	49
22:00	1	26	4	0	0	0	0	0	0	0	0	0	0	0	0	31
Hour Total	3	159	23	0	0	0	0	0	0	0	0	0	0	0	0	185
22:15	1	33	4	0	0	0	0	1	0	0	0	0	0	0	0	39
22:30	0	18	4	0	1	0	0	0	0	0	0	0	0	0	0	23
22:45	0	16	3	0	0	0	0	0	0	0	0	0	0	0	0	19
23:00	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Hour Total	2	79	11	0	1	0	0	1	0	0	0	0	0	0	0	94
23:15	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15
23:30	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
23:45	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
24:00	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Hour Total	0	52	1	0	0	0	0	0	0	0	0	0	0	0	0	53
00:15	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	8
00:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
00:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	21	2	0	0	0	0	0	0	0	0	0	0	0	0	23
01:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
03:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
05:30	0	15	1	0	0	1	0	1	0	0	0	0	0	0	0	18
05:45	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13
06:00	0	16	2	0	0	0	0	0	0	0	0	0	0	0	0	18
Hour Total	0	47	4	0	0	1	0	1	0	0	0	0	0	0	0	53
06:15	0	8	4	0	0	0	0	0	0	0	0	0	0	0	0	12
06:30	0	12	2	0	2	1	0	0	0	0	0	0	0	0	0	17
06:45	0	34	6	0	3	0	0	0	0	0	0	0	0	0	0	43
07:00	0	37	9	0	4	0	0	0	0	0	0	0	0	0	0	50
Hour Total	0	91	21	0	9	1	0	0	0	0	0	0	0	0	0	122
07:15	0	32	4	1	5	0	0	0	0	0	0	0	0	0	0	42
07:30	0	48	10	0	0	1	0	0	0	0	0	0	0	0	0	59
07:45	0	57	10	0	4	1	0	0	0	0	0	0	0	0	0	72
08:00	1	59	9	0	3	2	0	0	0	0	0	1	0	0	0	75
Hour Total	1	196	33	1	12	4	0	0	0	0	0	1	0	0	0	248
08:15	0	58	14	0	6	1	0	0	0	0	0	0	0	0	0	79
08:30	1	66	10	2	4	2	0	0	1	0	0	0	0	0	0	86
08:45	0	43	17	0	2	0	0	0	0	0	0	0	0	0	0	62
09:00	0	45	8	0	9	2	1	0	0	0	0	0	0	0	0	65
Hour Total	1	212	49	2	21	5	1	0	1	0	0	0	0	0	0	292
09:15	0	52	3	0	1	3	1	1	0	0	0	0	0	0	0	61
09:30	0	43	10	0	4	1	0	0	1	0	0	0	0	0	0	59
09:45	0	56	13	2	0	0	0	0	0	0	0	0	0	0	0	71
10:00	0	44	5	0	1	2	0	0	0	0	0	0	0	0	0	52
Hour Total	0	195	31	2	6	6	1	1	1	0	0	0	0	0	0	243
10:15	1	51	5	1	1	1	0	0	1	0	0	0	0	0	0	61
10:30	0	42	5	0	3	2	0	0	0	0	0	0	0	0	0	52
10:45	1	44	8	0	2	0	0	0	0	0	0	0	0	0	0	55
11:00	1	33	12	0	1	1	0	0	0	0	0	0	0	0	0	48
Hour Total	3	170	30	1	7	4	0	0	1	0	0	0	0	0	0	216
11:15	0	45	14	2	1	1	0	0	0	0	0	0	0	0	0	63
11:30	0	48	7	1	2	1	0	0	0	0	0	0	0	0	0	59
11:45	0	55	12	0	0	1	1	0	0	0	0	0	0	0	0	69
12:00	0	56	9	0	2	0	0	0	0	0	0	0	0	0	0	67
Hour Total	0	204	42	3	5	3	1	0	0	0	0	0	0	0	0	258
DAY TOTAL	25	3650	652	12	121	36	9	7	4	0	0	1	0	0	0	4517
PERCENTS	0.6%	80.9%	14.5%	0.3%	2.7%	0.8%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 95.7% Trucks & Buses 4.2%

AM Times	10:15	07:45	08:00	09:30	08:15	08:30	08:30	04:45	09:30			07:15				07:45
AM Peaks	3	240	50	3	21	7	2	1	2			1				312
PM Times	16:00	17:00	16:00	16:30	14:15	16:30	17:30	16:30	18:00							16:45
PM Peaks	6	323	60	2	18	4	2	3	1							384

GRAND TOTAL	65	1867	362	18	8	1	0	0								
	10839	18	104	20	3	1	0	13306								
PERCENTS	0.5%	81.5%	14.1%	0.2%	2.8%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	3	11	25	13	3	0	0	0	0	55
12:30	0	0	0	1	0	1	9	18	18	5	2	0	0	0	54
12:45	0	0	0	0	0	0	7	33	24	7	0	0	0	0	71
13:00	0	0	0	0	2	5	6	23	14	5	0	0	0	0	55
Hour Total	0	0	0	1	2	9	33	99	69	20	2	0	0	0	235
13:15	0	0	1	0	0	0	8	33	20	4	0	0	0	0	66
13:30	0	0	0	0	0	3	6	43	22	3	0	0	0	0	77
13:45	0	0	0	0	0	1	13	24	15	6	0	0	0	0	59
14:00	0	0	0	0	0	0	8	22	19	6	2	0	0	0	57
Hour Total	0	0	1	0	0	4	35	122	76	19	2	0	0	0	259
14:15	0	0	0	0	0	0	6	26	22	5	1	0	0	0	60
14:30	0	0	0	0	0	4	28	30	22	5	0	0	0	0	89
14:45	0	0	0	1	0	5	5	36	24	6	0	0	0	0	77
15:00	0	0	0	0	0	1	8	51	13	11	0	1	0	0	85
Hour Total	0	0	0	1	0	10	47	143	81	27	1	1	0	0	311
15:15	0	1	0	0	1	9	15	52	21	4	0	0	0	0	103
15:30	0	0	0	0	0	2	14	33	22	5	0	0	0	0	76
15:45	0	0	0	0	0	1	10	33	32	12	1	0	0	0	89
16:00	0	0	0	0	0	3	13	37	28	8	1	0	0	0	90
Hour Total	0	1	0	0	1	15	52	155	103	29	2	0	0	0	358
16:15	0	0	0	0	0	3	14	33	39	8	0	0	0	0	97
16:30	0	0	0	1	3	2	12	42	20	3	0	0	0	1	84
16:45	0	0	0	0	1	1	13	38	34	10	1	0	0	0	98
17:00	0	0	0	0	0	3	14	42	31	7	0	0	0	0	97
Hour Total	0	0	0	1	4	9	53	155	124	28	1	0	0	1	376
17:15	0	0	0	0	0	4	20	42	40	5	0	0	0	0	111
17:30	0	0	0	0	3	8	18	41	30	8	0	0	0	0	108
17:45	0	0	0	1	3	9	10	40	27	10	1	0	0	0	101
18:00	0	0	0	0	0	0	22	23	24	5	0	0	0	0	74
Hour Total	0	0	0	1	6	21	70	146	121	28	1	0	0	0	394
18:15	0	0	0	1	3	5	16	20	21	7	0	0	0	0	73
18:30	0	0	0	0	1	3	10	24	25	7	0	0	0	0	70
18:45	0	0	0	0	1	3	22	38	22	8	1	0	0	0	95
19:00	0	0	0	0	2	4	12	26	39	5	0	0	0	0	88
Hour Total	0	0	0	1	7	15	60	108	107	27	1	0	0	0	326
19:15	0	0	0	0	2	6	12	22	29	9	0	0	0	0	80
19:30	0	0	0	0	0	1	11	46	36	9	0	0	0	0	103
19:45	0	0	0	0	3	9	7	31	15	2	0	0	0	0	67
20:00	0	0	0	0	1	2	1	18	22	4	1	0	0	0	49
Hour Total	0	0	0	0	6	18	31	117	102	24	1	0	0	0	299
20:15	0	0	0	0	0	4	18	18	10	1	1	0	0	0	52
20:30	0	0	0	1	0	0	6	30	14	3	0	0	0	0	54
20:45	0	0	1	1	1	1	6	24	14	1	0	0	0	0	49
21:00	0	0	0	5	15	4	10	17	9	1	0	0	0	0	61

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	1	7	16	9	40	89	47	6	1	0	0	0	216
21:15	0	0	0	0	3	0	6	22	14	1	0	0	0	0	46
21:30	0	0	1	3	2	1	9	28	15	1	0	1	0	0	61
21:45	0	0	0	0	0	1	2	24	14	4	1	0	0	0	46
22:00	0	0	0	0	0	0	3	10	12	1	0	0	0	0	26
Hour Total	0	0	1	3	5	2	20	84	55	7	1	1	0	0	179
22:15	0	0	0	0	0	0	4	12	14	3	0	0	0	0	33
22:30	0	0	0	2	0	1	5	7	12	1	0	0	0	0	28
22:45	0	0	0	0	1	0	4	10	8	1	1	0	0	0	25
23:00	0	0	0	0	1	1	2	4	10	1	0	1	0	0	20
Hour Total	0	0	0	2	2	2	15	33	44	6	1	1	0	0	106
23:15	0	0	2	0	1	0	3	7	4	1	0	0	0	0	18
23:30	0	0	0	0	0	0	3	6	6	1	0	0	0	0	16
23:45	0	0	0	0	0	1	3	9	4	1	0	0	0	0	18
24:00	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
Hour Total	0	0	2	0	1	1	9	24	16	3	0	0	0	0	56
00:15	0	0	0	0	0	0	1	5	4	0	0	0	0	0	10
00:30	0	0	0	0	0	0	3	3	2	0	0	0	0	0	8
00:45	0	0	0	0	0	0	1	2	0	1	0	0	0	0	4
01:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	5	11	6	1	0	0	0	0	23
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
01:45	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
02:00	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
Hour Total	0	0	0	0	0	0	2	7	1	0	0	0	0	0	10
02:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
02:30	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
02:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	0	0	2	3	0	0	0	0	0	5
03:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	0	4	1	0	0	0	0	5
04:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	3	1	1	1	0	0	0	0	6
05:00	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
Hour Total	0	0	0	0	0	0	4	3	2	1	0	0	0	0	10

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	2	0	2	2	0	0	0	0	0	6
05:30	0	0	0	0	0	1	2	1	2	1	0	0	0	0	7
05:45	0	0	0	0	0	0	1	3	5	2	0	0	0	0	11
06:00	0	0	0	0	0	0	2	5	4	5	0	0	0	0	16
Hour Total	0	0	0	0	0	3	5	11	13	8	0	0	0	0	40
06:15	0	0	0	0	0	0	2	2	4	1	1	0	0	0	10
06:30	0	0	2	0	1	0	3	3	5	1	0	0	0	0	15
06:45	0	1	0	0	0	0	0	12	13	3	0	0	0	0	29
07:00	0	0	0	0	0	0	4	13	11	5	0	0	0	0	33
Hour Total	0	1	2	0	1	0	9	30	33	10	1	0	0	0	87
07:15	0	0	0	0	0	2	3	26	23	9	0	0	0	0	63
07:30	1	0	1	1	0	5	10	27	7	2	0	0	0	0	54
07:45	0	0	0	0	1	3	5	32	21	4	0	0	0	0	66
08:00	0	0	0	0	0	1	4	43	35	8	0	0	0	0	91
Hour Total	1	0	1	1	1	11	22	128	86	23	0	0	0	0	274
08:15	0	0	0	0	0	1	12	37	12	3	1	0	0	0	66
08:30	0	0	0	0	0	1	12	36	29	4	0	0	0	0	82
08:45	0	2	0	0	0	0	10	38	11	3	1	0	0	0	65
09:00	0	0	0	0	0	6	19	37	16	1	0	0	0	0	79
Hour Total	0	2	0	0	0	8	53	148	68	11	2	0	0	0	292
09:15	0	1	0	0	0	0	8	21	22	4	0	0	0	0	56
09:30	0	0	0	0	0	0	8	18	17	3	0	0	0	0	46
09:45	0	0	0	0	0	4	4	16	11	3	0	0	0	0	38
10:00	0	0	0	0	0	1	11	25	18	2	0	0	0	0	57
Hour Total	0	1	0	0	0	5	31	80	68	12	0	0	0	0	197
10:15	0	0	0	0	0	1	5	17	16	3	0	0	0	0	42
10:30	0	0	0	0	0	4	6	28	12	3	0	0	0	0	53
10:45	0	0	0	0	0	2	10	23	19	5	0	0	0	0	59
11:00	0	0	0	0	0	3	13	22	10	3	0	0	0	0	51
Hour Total	0	0	0	0	0	10	34	90	57	14	0	0	0	0	205
11:15	0	0	0	1	1	2	8	21	17	1	2	0	0	0	53
11:30	0	0	0	1	0	1	10	23	13	2	0	0	0	0	50
11:45	0	1	0	0	0	1	6	28	18	3	0	0	0	0	57
12:00	0	0	0	0	0	3	5	19	23	4	0	0	0	0	54
Hour Total	0	1	0	2	1	7	29	91	71	10	2	0	0	0	214
DAY TOTAL	1	6	8	20	53	159	659	1876	1357	315	19	3	0	1	4477
PERCENTS	0.1%	0.2%	0.2%	0.5%	1.2%	3.5%	14.7%	41.9%	30.3%	7.0%	0.4%	0.0%	0.0%	0.0%	100%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
38.2 mph

85th Percentile Speed
48.8 mph

Median Speed
43.6 mph

Average Speed
43.4 mph

10 MPH Pace Speed
40 mph to 50 mph
3233 vehicles in pace
Representing 72.2% of the total vehicles

Vehicles > 50 MPH
338
7.5%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	0	7	26	20	5	0	0	0	0	58
12:30	0	0	0	0	1	3	13	24	21	3	0	0	0	0	65
12:45	0	0	0	0	2	0	10	26	18	4	1	0	0	0	61
13:00	0	0	0	0	1	0	2	27	13	3	1	0	0	0	47
Hour Total	0	0	0	0	4	3	32	103	72	15	2	0	0	0	231
13:15	0	0	0	1	0	0	7	24	17	2	0	0	0	0	51
13:30	0	0	0	0	1	2	8	23	21	8	1	0	0	0	64
13:45	2	1	1	2	1	1	6	22	24	4	2	0	0	0	66
14:00	0	0	0	1	0	0	8	17	21	6	1	0	0	0	54
Hour Total	2	1	1	4	2	3	29	86	83	20	4	0	0	0	235
14:15	0	0	0	0	0	3	17	46	23	4	0	0	0	0	93
14:30	0	0	0	0	1	10	19	27	24	5	0	0	0	0	86
14:45	0	0	1	0	0	4	12	29	27	4	4	0	0	0	81
15:00	1	0	0	0	1	6	14	50	19	6	2	0	0	0	99
Hour Total	1	0	1	0	2	23	62	152	93	19	6	0	0	0	359
15:15	0	0	0	0	0	1	12	43	22	8	0	0	0	0	86
15:30	0	0	0	2	3	6	19	32	15	4	0	0	0	0	81
15:45	0	0	0	0	0	2	10	44	25	4	0	0	0	0	85
16:00	0	0	0	0	0	1	3	44	38	4	0	0	0	0	90
Hour Total	0	0	0	2	3	10	44	163	100	20	0	0	0	0	342
16:15	0	0	0	0	0	1	13	20	22	6	0	0	0	0	62
16:30	1	1	3	3	0	1	9	30	22	5	0	0	0	0	75
16:45	0	0	0	0	1	1	11	37	40	11	1	1	0	0	103
17:00	0	0	0	0	3	9	22	41	18	2	0	0	0	0	95
Hour Total	1	1	3	3	4	12	55	128	102	24	1	1	0	0	335
17:15	0	0	0	0	9	23	29	20	6	0	0	0	0	0	87
17:30	0	0	0	0	1	7	14	34	33	7	0	0	0	0	96
17:45	0	0	1	0	2	6	11	28	26	6	0	0	0	0	80
18:00	0	0	0	1	1	3	10	43	28	10	1	0	0	0	97
Hour Total	0	0	1	1	13	39	64	125	93	23	1	0	0	0	360
18:15	1	0	0	0	2	5	11	21	20	9	0	0	0	0	69
18:30	0	0	0	0	3	0	10	22	19	9	0	0	0	0	63
18:45	0	0	0	0	0	1	2	18	16	9	0	0	0	0	46
19:00	0	0	0	0	1	3	2	27	18	3	0	0	0	0	54
Hour Total	1	0	0	0	6	9	25	88	73	30	0	0	0	0	232
19:15	0	0	0	1	2	4	11	37	27	3	0	0	0	0	85
19:30	0	0	0	0	0	5	14	49	33	3	0	0	0	0	104
19:45	0	0	0	0	2	4	21	34	28	7	0	0	0	0	96
20:00	0	0	0	0	0	1	6	24	15	4	1	0	0	0	51
Hour Total	0	0	0	1	4	14	52	144	103	17	1	0	0	0	336
20:15	0	0	0	0	0	1	13	23	13	1	0	0	0	0	51
20:30	0	0	0	0	3	3	8	16	14	2	0	0	0	0	46
20:45	0	0	0	0	0	2	11	25	5	1	0	0	0	0	44
21:00	0	0	1	2	6	4	12	22	9	2	0	0	0	0	58

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	1	2	9	10	44	86	41	6	0	0	0	0	199
21:15	0	0	0	2	3	0	5	25	13	2	0	0	0	0	50
21:30	0	0	0	0	0	1	5	22	5	0	0	0	0	0	33
21:45	0	0	0	0	0	2	5	14	8	2	0	0	0	0	31
22:00	0	0	1	0	0	1	10	12	4	1	0	0	0	0	29
Hour Total	0	0	1	2	3	4	25	73	30	5	0	0	0	0	143
22:15	0	0	0	0	0	1	6	13	8	1	0	0	0	0	29
22:30	0	0	0	0	0	0	4	7	6	3	0	0	0	0	20
22:45	0	0	0	0	0	1	4	7	5	1	0	0	0	0	18
23:00	0	0	0	0	0	0	3	5	8	2	0	0	0	0	18
Hour Total	0	0	0	0	0	2	17	32	27	7	0	0	0	0	85
23:15	0	0	3	0	0	0	4	8	5	0	0	0	0	0	20
23:30	0	0	0	0	0	0	2	9	7	1	0	0	0	0	19
23:45	0	0	0	0	0	0	0	6	3	0	0	0	0	0	9
24:00	0	0	0	0	0	0	0	6	4	0	0	0	0	0	10
Hour Total	0	0	3	0	0	0	6	29	19	1	0	0	0	0	58
00:15	0	0	0	0	0	0	0	1	2	2	0	0	0	0	5
00:30	0	0	0	0	0	0	0	4	2	1	0	0	0	0	7
00:45	0	0	0	0	0	0	1	3	1	0	0	0	0	0	5
01:00	0	0	0	0	0	0	1	2	1	1	0	0	0	0	5
Hour Total	0	0	0	0	0	0	2	10	6	4	0	0	0	0	22
01:15	0	0	0	0	0	1	0	2	2	0	0	0	0	0	5
01:30	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
01:45	0	0	0	0	0	0	0	2	2	1	0	0	0	0	5
02:00	0	0	0	0	0	1	0	4	2	0	0	0	0	0	7
Hour Total	0	0	0	0	0	2	0	10	7	1	0	0	0	0	20
02:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
02:45	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
03:00	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
Hour Total	0	0	0	0	0	0	1	1	5	2	0	0	0	0	9
03:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
03:30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
03:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	1	3	1	1	0	0	0	0	6
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
04:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00	0	0	0	0	0	0	1	1	2	0	0	0	0	0	4
Hour Total	0	0	0	0	0	1	1	2	3	1	0	0	0	0	8

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	1	2	1	0	0	0	0	4
05:30	0	0	0	0	0	0	2	4	4	1	1	0	0	0	12
05:45	0	0	0	0	0	0	1	7	1	3	0	0	0	0	12
06:00	0	0	0	0	0	0	0	6	4	2	0	0	0	0	12
Hour Total	0	0	0	0	0	0	3	18	11	7	1	0	0	0	40
06:15	0	0	0	0	0	0	1	4	5	3	0	0	0	0	13
06:30	0	2	1	1	0	1	1	3	7	0	1	0	0	0	17
06:45	0	0	0	0	0	0	2	12	12	3	0	0	0	0	29
07:00	0	0	0	0	0	0	6	11	19	4	0	0	0	0	40
Hour Total	0	2	1	1	0	1	10	30	43	10	1	0	0	0	99
07:15	0	0	1	0	0	0	5	19	17	2	1	0	0	0	45
07:30	0	0	0	0	0	5	5	29	13	6	0	0	0	0	58
07:45	0	0	3	0	0	2	13	25	20	6	0	0	0	0	69
08:00	0	0	0	0	0	1	7	45	29	6	2	0	0	0	90
Hour Total	0	0	4	0	0	8	30	118	79	20	3	0	0	0	262
08:15	0	0	0	0	1	2	24	23	15	4	0	0	0	0	69
08:30	0	1	0	1	1	4	23	34	19	7	0	0	0	0	90
08:45	0	0	0	0	0	3	8	26	17	3	0	0	0	0	57
09:00	0	1	0	0	2	1	16	31	17	1	0	0	0	0	69
Hour Total	0	2	0	1	4	10	71	114	68	15	0	0	0	0	285
09:15	0	0	0	0	1	3	15	24	17	1	1	0	0	0	62
09:30	1	0	0	2	2	1	13	26	15	2	0	0	0	0	62
09:45	0	0	0	0	0	2	14	24	23	0	0	0	0	0	63
10:00	0	0	0	0	2	1	7	28	10	5	1	0	0	0	54
Hour Total	1	0	0	2	5	7	49	102	65	8	2	0	0	0	241
10:15	0	0	0	0	0	0	11	19	16	3	1	0	0	0	50
10:30	0	0	0	1	2	1	4	20	12	6	0	0	0	0	46
10:45	0	0	0	0	0	4	10	22	16	5	0	0	0	0	57
11:00	0	0	0	0	0	2	10	15	15	2	0	0	0	0	44
Hour Total	0	0	0	1	2	7	35	76	59	16	1	0	0	0	197
11:15	0	0	0	0	0	2	4	25	18	5	0	0	0	0	54
11:30	0	0	0	0	0	0	3	18	16	7	2	0	0	0	46
11:45	0	0	1	1	0	1	8	21	15	2	0	0	0	0	49
12:00	0	0	0	0	0	0	10	24	21	3	1	0	0	0	59
Hour Total	0	0	1	1	0	3	25	88	70	17	3	0	0	0	208
DAY TOTAL	6	6	17	21	61	168	683	1781	1253	289	26	1	0	0	4312
PERCENTS	0.2%	0.2%	0.4%	0.5%	1.5%	3.8%	15.8%	41.3%	29.0%	6.7%	0.6%	0.0%	0.0%	0.0%	100%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
37.7 mph

85th Percentile Speed
48.7 mph

Median Speed
43.4 mph

Average Speed
43.0 mph

10 MPH Pace Speed
40 mph to 50 mph
3034 vehicles in pace
Representing 70.3% of the total vehicles

Vehicles > 50 MPH
316
7.3%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	1	0	8	27	19	3	0	0	0	0	58
12:30	0	0	0	0	0	2	13	29	17	5	0	0	0	0	66
12:45	0	0	0	0	0	1	11	32	10	1	0	0	0	0	55
13:00	0	0	0	0	1	2	10	33	19	2	0	0	0	0	67
Hour Total	0	0	0	0	2	5	42	121	65	11	0	0	0	0	246
13:15	0	0	0	0	0	2	7	9	23	12	2	0	0	0	55
13:30	0	0	0	0	0	0	10	21	22	6	1	0	0	0	60
13:45	0	0	0	0	0	2	8	21	18	5	2	0	0	0	56
14:00	0	0	0	1	0	0	3	20	31	7	0	0	0	0	62
Hour Total	0	0	0	1	0	4	28	71	94	30	5	0	0	0	233
14:15	0	0	0	0	0	6	5	22	26	5	0	0	0	0	64
14:30	0	0	0	1	1	3	13	26	20	3	0	0	0	0	67
14:45	0	0	0	1	0	5	26	33	18	4	2	0	0	0	89
15:00	0	0	0	0	0	0	17	46	32	2	0	0	0	0	97
Hour Total	0	0	0	2	1	14	61	127	96	14	2	0	0	0	317
15:15	0	0	0	0	1	0	8	39	24	8	0	0	0	0	80
15:30	0	0	0	1	1	7	15	34	20	1	2	0	0	0	81
15:45	0	0	2	0	1	0	8	22	37	8	0	0	0	0	78
16:00	0	0	0	0	0	6	15	30	25	9	0	0	0	0	85
Hour Total	0	0	2	1	3	13	46	125	106	26	2	0	0	0	324
16:15	0	0	0	0	0	0	16	31	28	9	0	0	0	0	84
16:30	1	0	3	1	0	3	21	42	22	2	0	0	0	0	95
16:45	0	0	0	0	0	5	13	47	36	5	0	0	0	0	106
17:00	0	0	0	0	0	2	8	36	37	6	1	0	0	0	90
Hour Total	1	0	3	1	0	10	58	156	123	22	1	0	0	0	375
17:15	0	0	1	0	5	1	9	26	45	4	1	0	0	0	92
17:30	0	0	0	0	0	4	9	35	39	6	2	1	0	0	96
17:45	0	0	0	0	1	0	18	44	23	10	0	0	0	0	96
18:00	0	0	0	2	1	1	9	22	42	5	0	0	0	0	82
Hour Total	0	0	1	2	7	6	45	127	149	25	3	1	0	0	366
18:15	0	0	0	0	2	7	12	23	28	5	0	0	0	0	77
18:30	0	0	3	0	1	1	8	24	18	7	1	0	0	0	63
18:45	0	0	0	0	0	9	14	33	25	4	2	0	0	0	87
19:00	0	0	0	1	0	1	3	30	34	3	1	0	0	0	73
Hour Total	0	0	3	1	3	18	37	110	105	19	4	0	0	0	300
19:15	0	0	0	0	0	2	17	39	27	7	0	0	0	0	92
19:30	0	0	0	0	0	2	10	41	23	8	1	0	0	0	85
19:45	0	0	0	0	0	0	5	42	34	11	0	0	0	0	92
20:00	0	0	0	0	0	0	11	23	17	6	0	0	0	0	57
Hour Total	0	0	0	0	0	4	43	145	101	32	1	0	0	0	326
20:15	0	0	0	0	1	2	4	24	16	4	0	0	0	0	51
20:30	0	0	0	1	1	0	9	23	15	2	1	0	0	0	52
20:45	0	0	0	0	0	0	6	29	11	2	0	0	0	0	48
21:00	0	0	0	0	0	4	13	29	12	1	0	0	0	0	59

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	1	2	6	32	105	54	9	1	0	0	0	210
21:15	0	0	0	0	3	3	8	18	11	0	0	0	0	0	43
21:30	0	0	0	0	0	2	18	29	13	0	0	0	0	0	62
21:45	0	0	0	1	0	6	9	20	12	1	0	0	0	0	49
22:00	0	0	0	0	3	4	4	13	7	0	0	0	0	0	31
Hour Total	0	0	0	1	6	15	39	80	43	1	0	0	0	0	185
22:15	0	0	0	0	0	1	9	17	9	3	0	0	0	0	39
22:30	0	0	0	0	1	2	2	11	4	3	0	0	0	0	23
22:45	0	0	1	0	0	2	2	6	8	0	0	0	0	0	19
23:00	0	0	0	1	0	0	1	6	4	1	0	0	0	0	13
Hour Total	0	0	1	1	1	5	14	40	25	7	0	0	0	0	94
23:15	0	0	1	0	0	0	2	5	5	0	2	0	0	0	15
23:30	0	0	1	0	0	0	1	7	7	0	0	0	0	0	16
23:45	0	0	0	0	0	0	1	5	6	0	0	0	0	0	12
24:00	0	0	0	0	0	0	5	3	2	0	0	0	0	0	10
Hour Total	0	0	2	0	0	0	9	20	20	0	2	0	0	0	53
00:15	0	0	0	1	0	0	0	3	4	0	0	0	0	0	8
00:30	0	0	0	0	0	0	1	0	3	2	0	0	0	0	6
00:45	0	0	0	0	0	0	1	2	2	0	0	0	0	0	5
01:00	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
Hour Total	0	0	0	1	0	0	2	7	11	2	0	0	0	0	23
01:15	0	0	0	0	0	0	0	1	2	1	0	0	0	0	4
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	1	2	2	0	0	0	0	0	5
02:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Hour Total	0	0	0	0	0	0	2	3	5	1	0	0	0	0	11
02:15	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
02:30	0	0	0	0	0	1	1	0	0	0	1	0	0	0	3
02:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	2	2	0	0	0	0	0	0	4
Hour Total	0	0	0	0	0	1	3	4	1	0	1	0	0	0	10
03:15	0	0	0	0	0	1	0	0	2	0	0	0	0	0	3
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	1	0	0	2	0	0	0	0	0	3
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3
04:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00	0	0	0	0	0	0	3	1	0	0	0	0	0	0	4
Hour Total	0	0	0	0	0	0	4	3	0	2	0	0	0	0	9

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	2	1	1	0	0	0	0	0	4
05:30	0	0	0	0	0	0	3	10	2	3	0	0	0	0	18
05:45	0	0	0	0	0	0	2	3	8	0	0	0	0	0	13
06:00	0	0	0	0	0	0	0	10	4	4	0	0	0	0	18
Hour Total	0	0	0	0	0	0	7	24	15	7	0	0	0	0	53
06:15	0	0	0	0	0	0	0	3	5	3	1	0	0	0	12
06:30	0	0	1	0	1	0	2	7	4	2	0	0	0	0	17
06:45	0	0	0	0	0	1	7	10	21	4	0	0	0	0	43
07:00	0	0	0	0	0	0	5	21	18	5	1	0	0	0	50
Hour Total	0	0	1	0	1	1	14	41	48	14	2	0	0	0	122
07:15	0	0	1	0	0	3	1	22	15	0	0	0	0	0	42
07:30	0	1	0	1	1	5	9	24	15	3	0	0	0	0	59
07:45	0	0	0	0	0	0	6	39	19	7	1	0	0	0	72
08:00	0	0	0	0	0	5	10	31	24	4	1	0	0	0	75
Hour Total	0	1	1	1	1	13	26	116	73	14	2	0	0	0	248
08:15	0	0	0	0	0	4	16	25	25	9	0	0	0	0	79
08:30	0	0	2	3	2	5	15	45	10	4	0	0	0	0	86
08:45	0	0	0	0	0	3	15	28	13	3	0	0	0	0	62
09:00	0	0	0	0	0	5	14	31	13	2	0	0	0	0	65
Hour Total	0	0	2	3	2	17	60	129	61	18	0	0	0	0	292
09:15	0	0	0	0	0	2	15	24	15	4	0	1	0	0	61
09:30	0	0	0	0	0	4	15	28	11	1	0	0	0	0	59
09:45	0	0	0	0	0	2	8	32	21	8	0	0	0	0	71
10:00	0	0	0	0	0	0	12	26	12	2	0	0	0	0	52
Hour Total	0	0	0	0	0	8	50	110	59	15	0	1	0	0	243
10:15	0	0	0	1	0	5	13	20	13	9	0	0	0	0	61
10:30	0	0	0	0	0	0	9	23	15	5	0	0	0	0	52
10:45	0	0	0	0	0	1	8	26	14	5	1	0	0	0	55
11:00	0	0	0	0	0	4	8	19	13	4	0	0	0	0	48
Hour Total	0	0	0	1	0	10	38	88	55	23	1	0	0	0	216
11:15	0	0	0	0	0	2	7	24	20	9	1	0	0	0	63
11:30	0	0	0	0	0	3	9	30	14	3	0	0	0	0	59
11:45	0	0	1	1	1	3	9	31	15	7	1	0	0	0	69
12:00	0	0	0	0	0	1	12	27	25	2	0	0	0	0	67
Hour Total	0	0	1	1	1	9	37	112	74	21	2	0	0	0	258
DAY TOTAL	1	1	17	18	30	160	697	1864	1385	313	29	2	0	0	4517
PERCENTS	0.1%	0.1%	0.4%	0.4%	0.7%	3.6%	15.4%	41.2%	30.6%	6.9%	0.6%	0.0%	0.0%	0.0%	100%

Site Reference: Site A
Site ID: 000000009381
Location: Longhill, btw Burlington and Ford Col.
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31583 76.78114

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
GRAND TOTAL	8	42	144	2039	3995	74	0								
	13	59	487	5521	917	6	1								13306
PERCENTS	0.1%	0.1%	0.4%	0.5%	1.1%	3.7%	15.4%	41.4%	30.0%	6.8%	0.5%	0.0%	0.0%	0.0%	100%

Statistical Information...

15th Percentile Speed
38.2 mph

85th Percentile Speed
48.8 mph

Median Speed
43.6 mph

Average Speed
43.4 mph

10 MPH Pace Speed
40 mph to 50 mph
3249 vehicles in pace
Representing 71.9% of the total vehicles

Vehicles > 50 MPH
344
7.6%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	87	13	0	0	1	0	0	0	0	1	0	0	0	0	102
12:30	0	59	21	0	1	1	0	0	1	0	0	0	0	0	0	83
12:45	0	69	17	0	4	0	0	0	0	0	0	0	0	0	0	90
13:00	1	89	20	0	4	0	0	0	0	0	0	0	0	0	0	114
Hour Total	1	304	71	0	9	2	0	0	1	0	1	0	0	0	0	389
13:15	0	67	17	0	4	0	0	0	0	0	0	0	0	0	0	88
13:30	0	69	18	1	2	2	0	0	0	0	0	0	0	0	0	92
13:45	0	68	15	0	1	3	0	0	0	0	0	0	0	0	0	87
14:00	0	65	10	1	2	0	0	0	0	0	0	0	0	0	0	78
Hour Total	0	269	60	2	9	5	0	0	0	0	0	0	0	0	0	345
14:15	0	77	18	2	4	0	0	0	0	0	0	0	0	0	0	101
14:30	0	66	19	0	2	1	0	0	0	0	0	0	0	0	0	88
14:45	0	84	20	0	2	2	0	0	0	0	0	0	0	0	0	108
15:00	0	98	13	0	3	0	0	1	0	0	0	0	0	0	0	115
Hour Total	0	325	70	2	11	3	0	1	0	0	0	0	0	0	0	412
15:15	1	95	18	0	7	0	0	0	2	0	0	0	0	0	0	123
15:30	0	105	16	3	4	0	0	0	0	0	0	0	0	0	0	128
15:45	0	100	18	0	2	1	0	0	0	0	0	0	0	0	0	121
16:00	0	81	16	0	3	0	0	0	0	0	0	0	0	0	0	100
Hour Total	1	381	68	3	16	1	0	0	2	0	0	0	0	0	0	472
16:15	0	94	12	2	1	1	0	0	0	0	0	0	0	0	0	110
16:30	0	97	23	2	3	1	0	0	0	0	0	0	0	0	0	126
16:45	0	99	24	1	2	0	0	0	0	0	0	0	0	0	0	126
17:00	0	109	22	0	1	0	0	0	0	0	0	0	0	0	0	132
Hour Total	0	399	81	5	7	2	0	0	0	0	0	0	0	0	0	494
17:15	0	97	27	2	1	0	0	0	0	0	0	0	0	0	0	127
17:30	0	122	16	0	3	0	0	0	0	0	0	0	0	0	0	141
17:45	0	116	9	0	0	0	0	0	1	0	0	0	0	0	0	126
18:00	0	115	16	0	1	0	0	0	0	0	0	0	0	0	0	132
Hour Total	0	450	68	2	5	0	0	0	1	0	0	0	0	0	0	526
18:15	0	83	11	0	0	0	0	0	0	0	0	0	0	0	0	94
18:30	0	71	9	0	0	0	0	0	0	0	0	0	0	0	0	80
18:45	0	92	10	0	2	0	0	0	0	0	0	0	0	0	0	104
19:00	0	95	11	0	0	0	0	0	0	0	0	0	0	0	0	106
Hour Total	0	341	41	0	2	0	0	0	0	0	0	0	0	0	0	384
19:15	0	100	13	0	0	0	0	0	0	0	0	0	0	0	0	113
19:30	0	107	7	0	0	0	0	0	0	0	0	0	0	0	0	114
19:45	0	81	17	0	1	0	0	0	0	0	0	0	0	0	0	99
20:00	0	73	11	0	1	0	0	0	0	0	0	0	0	0	0	85
Hour Total	0	361	48	0	2	0	0	0	0	0	0	0	0	0	0	411
20:15	0	45	10	0	0	0	0	0	0	0	0	0	0	0	0	55
20:30	0	58	7	0	2	0	0	0	0	0	0	0	0	0	0	67
20:45	0	51	8	0	0	0	0	0	0	0	0	0	0	0	0	59
21:00	1	47	4	0	0	0	0	0	0	0	0	0	0	0	0	52

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	1	201	29	0	2	0	0	0	0	0	0	0	0	0	0	233
21:15	1	43	8	0	0	0	0	0	0	0	0	0	0	0	0	52
21:30	0	58	6	0	0	0	0	0	0	0	0	0	0	0	0	64
21:45	0	41	4	0	0	0	0	0	0	0	0	0	0	0	0	45
22:00	0	24	3	0	0	0	0	0	0	0	0	0	0	0	0	27
Hour Total	1	166	21	0	0	0	0	0	0	0	0	0	0	0	0	188
22:15	0	21	1	0	1	0	0	0	0	0	0	0	0	0	0	23
22:30	1	21	1	0	0	0	0	0	0	0	0	0	0	0	0	23
22:45	0	15	1	0	0	0	0	0	0	0	0	0	0	0	0	16
23:00	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
Hour Total	1	68	4	0	1	0	0	0	0	0	0	0	0	0	0	74
23:15	0	28	2	0	0	0	0	0	0	0	0	0	0	0	0	30
23:30	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	12
23:45	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
24:00	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Hour Total	0	55	5	0	0	0	0	0	0	0	0	0	0	0	0	60
00:15	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
00:30	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
00:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
01:15	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	6
01:30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	12	1	0	1	0	0	0	0	0	0	0	0	0	0	14
02:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
03:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	12
04:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	9
05:00	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	13	6	0	0	0	0	0	0	0	0	0	0	0	0	19

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
05:30	0	11	3	0	0	0	0	0	0	0	0	0	0	0	0	14
05:45	0	23	2	0	0	0	0	0	0	0	0	0	0	0	0	25
06:00	0	24	2	0	1	0	0	0	0	0	0	0	0	0	0	27
Hour Total	0	65	8	0	1	0	0	0	0	0	0	0	0	0	0	74
06:15	0	21	4	1	1	0	0	0	0	0	0	0	0	0	0	27
06:30	2	33	7	0	1	0	0	0	0	0	0	0	0	0	0	43
06:45	0	42	9	0	1	0	0	0	0	0	0	0	0	0	0	52
07:00	0	70	11	1	2	2	0	0	0	0	0	0	0	0	0	86
Hour Total	2	166	31	2	5	2	0	0	0	0	0	0	0	0	0	208
07:15	0	95	17	2	0	0	0	0	2	0	0	0	0	0	0	116
07:30	0	63	10	1	4	0	0	1	0	0	0	0	0	0	0	79
07:45	0	78	14	0	4	0	0	0	0	0	0	0	0	0	0	96
08:00	0	107	10	0	3	0	0	0	0	0	0	0	0	0	0	120
Hour Total	0	343	51	3	11	0	0	1	2	0	0	0	0	0	0	411
08:15	0	80	12	0	2	0	0	0	1	0	0	0	0	0	0	95
08:30	0	90	20	1	1	1	0	0	0	0	0	0	0	0	0	113
08:45	0	125	20	4	4	0	0	0	0	0	0	0	1	0	0	154
09:00	0	95	11	1	3	0	0	0	0	0	0	0	0	0	0	110
Hour Total	0	390	63	6	10	1	0	0	1	0	0	0	1	0	0	472
09:15	1	79	11	0	1	0	0	0	0	0	0	0	0	0	0	92
09:30	0	86	14	0	7	0	0	0	0	0	0	0	0	0	0	107
09:45	0	81	12	1	1	0	0	0	0	0	0	0	0	0	0	95
10:00	0	70	16	0	1	1	0	0	0	0	0	0	0	0	0	88
Hour Total	1	316	53	1	10	1	0	0	0	0	0	0	0	0	0	382
10:15	0	62	12	1	2	0	0	0	0	0	0	0	0	0	0	77
10:30	0	76	17	0	2	0	0	1	0	0	0	0	0	0	0	96
10:45	0	56	11	0	3	0	0	0	0	0	0	0	0	0	0	70
11:00	0	60	14	0	0	1	0	1	0	0	0	0	0	0	0	76
Hour Total	0	254	54	1	7	1	0	2	0	0	0	0	0	0	0	319
11:15	2	71	14	1	0	1	0	0	0	0	0	0	0	0	0	89
11:30	0	55	10	0	2	0	0	0	0	0	0	0	0	0	0	67
11:45	0	51	8	0	4	1	0	0	1	0	0	0	0	0	0	65
12:00	0	69	16	0	0	0	0	0	0	0	0	0	0	0	0	85
Hour Total	2	246	48	1	6	2	0	0	1	0	0	0	0	0	0	306
DAY TOTAL	10	5155	887	28	115	20	0	4	8	0	1	0	1	0	0	6229
PERCENTS	0.2%	82.8%	14.3%	0.5%	1.8%	0.3%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.1% Trucks & Buses 2.8%

AM Times	05:45	08:00	08:15	08:15	08:45	11:00		10:15	06:30				08:00			08:00
AM Peaks	2	402	63	6	15	3		2	2				1			482
PM Times	20:30	17:15	16:30	15:30	14:45	13:00		14:15	14:30		12:15					16:45
PM Peaks	2	450	96	5	16	5		1	2		1					526

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	69	10	0	2	0	0	1	0	0	0	0	0	0	0	82
12:30	0	86	8	0	0	0	0	0	0	0	0	0	0	0	0	94
12:45	0	63	20	0	5	0	0	0	0	0	0	0	0	0	0	88
13:00	0	72	11	0	5	0	0	0	0	0	0	0	0	0	0	88
Hour Total	0	290	49	0	12	0	0	1	0	0	0	0	0	0	0	352
13:15	0	65	17	0	0	0	0	0	0	0	0	0	0	0	0	82
13:30	1	78	14	1	1	0	0	0	1	0	0	0	0	0	0	96
13:45	0	78	19	1	1	0	0	3	0	0	0	0	0	0	0	102
14:00	0	63	16	1	3	0	0	0	0	0	0	0	0	0	0	83
Hour Total	1	284	66	3	5	0	0	3	1	0	0	0	0	0	0	363
14:15	0	72	16	1	5	1	0	0	0	1	0	0	0	0	0	96
14:30	0	72	17	0	4	0	0	0	0	0	0	0	0	0	0	93
14:45	0	66	19	0	3	0	0	0	0	0	0	0	0	0	0	88
15:00	0	86	16	0	3	2	0	1	0	0	0	0	0	0	0	108
Hour Total	0	296	68	1	15	3	0	1	0	1	0	0	0	0	0	385
15:15	0	100	22	1	7	0	0	0	0	0	0	0	0	0	0	130
15:30	0	81	16	3	2	1	0	0	1	0	0	0	0	0	0	104
15:45	1	76	19	0	4	0	0	0	0	0	0	0	0	0	0	100
16:00	0	84	12	0	1	1	0	0	0	0	0	0	0	0	0	98
Hour Total	1	341	69	4	14	2	0	0	1	0	0	0	0	0	0	432
16:15	0	116	16	2	4	0	0	0	0	0	0	0	0	0	0	138
16:30	1	110	12	2	3	0	0	0	0	0	0	0	0	0	0	128
16:45	1	96	26	1	0	0	0	1	0	0	0	0	0	0	0	125
17:00	0	97	27	0	3	0	0	0	0	0	0	0	0	0	0	127
Hour Total	2	419	81	5	10	0	0	1	0	0	0	0	0	0	0	518
17:15	1	98	15	0	2	0	0	1	0	0	0	0	0	0	0	117
17:30	0	115	18	0	0	0	0	0	0	0	0	0	0	0	0	133
17:45	0	123	15	0	0	0	0	0	0	0	0	0	0	0	0	138
18:00	0	103	22	0	1	0	0	0	0	0	0	0	0	0	0	126
Hour Total	1	439	70	0	3	0	0	1	0	0	0	0	0	0	0	514
18:15	0	100	14	1	1	0	0	0	0	0	0	0	0	0	0	116
18:30	1	84	18	0	0	0	0	0	0	0	0	0	0	0	0	103
18:45	0	90	11	0	2	0	0	0	0	0	0	0	0	0	0	103
19:00	0	76	17	0	0	0	0	0	0	0	0	0	0	0	0	93
Hour Total	1	350	60	1	3	0	0	0	0	0	0	0	0	0	0	415
19:15	0	99	10	0	0	0	0	0	0	0	0	0	0	0	0	109
19:30	0	123	16	0	0	0	0	0	0	0	0	0	0	0	0	139
19:45	0	110	13	0	1	0	0	0	0	0	0	0	0	0	0	124
20:00	0	43	5	0	0	0	0	0	0	0	0	0	0	0	0	48
Hour Total	0	375	44	0	1	0	0	0	0	0	0	0	0	0	0	420
20:15	0	52	6	0	1	0	0	1	0	0	0	0	0	0	0	60
20:30	1	55	7	0	1	0	0	0	0	0	0	0	0	0	0	64
20:45	0	43	3	0	0	0	0	0	0	0	0	0	0	0	0	46
21:00	0	53	9	0	0	0	0	0	0	0	0	0	0	0	0	62

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	1	203	25	0	2	0	0	1	0	0	0	0	0	0	0	232
21:15	0	42	3	0	0	0	0	0	0	0	0	0	0	0	0	45
21:30	0	26	9	0	1	0	0	0	0	0	0	0	0	0	0	36
21:45	1	32	6	0	0	0	0	0	0	0	0	0	0	0	0	39
22:00	0	19	4	0	0	0	0	0	0	0	0	0	0	0	0	23
Hour Total	1	119	22	0	1	0	0	0	0	0	0	0	0	0	0	143
22:15	0	18	3	0	0	0	0	0	0	0	0	0	0	0	0	21
22:30	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
22:45	0	20	3	0	1	0	0	0	0	0	0	0	0	0	0	24
23:00	0	18	5	0	0	0	0	0	0	0	0	0	0	0	0	23
Hour Total	0	75	12	0	1	0	0	0	0	0	0	0	0	0	0	88
23:15	0	16	1	0	0	0	0	0	0	0	0	0	0	0	0	17
23:30	0	13	4	0	0	0	0	0	0	0	0	0	0	0	0	17
23:45	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
24:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	40	5	0	0	0	0	0	0	0	0	0	0	0	0	45
00:15	1	7	2	0	0	0	0	0	0	0	0	0	0	0	0	10
00:30	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4
00:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	2	15	3	0	0	0	0	0	0	0	0	0	0	0	0	20
01:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
02:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
03:15	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3
03:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	5	3	0	1	0	0	0	0	0	0	0	0	0	0	9
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
04:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	7
Hour Total	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	18

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	10
05:30	0	10	4	0	0	0	0	0	0	0	0	0	0	0	0	14
05:45	0	20	3	0	0	0	0	0	0	0	0	0	0	0	0	23
06:00	0	28	2	1	1	0	0	0	0	0	0	0	0	0	0	32
Hour Total	0	66	11	1	1	0	0	0	0	0	0	0	0	0	0	79
06:15	0	22	3	1	0	0	0	0	0	0	0	0	0	0	0	26
06:30	0	32	6	0	1	0	0	0	0	0	0	0	0	0	0	39
06:45	0	41	9	0	1	0	0	0	0	0	0	0	0	0	0	51
07:00	0	71	9	2	2	3	0	0	0	0	0	0	0	0	0	87
Hour Total	0	166	27	3	4	3	0	0	0	0	0	0	0	0	0	203
07:15	0	99	18	0	2	0	0	0	0	0	0	0	0	0	0	119
07:30	0	60	9	3	2	0	1	0	0	0	0	0	0	0	0	75
07:45	0	96	5	0	4	0	0	0	0	0	0	0	0	0	0	105
08:00	0	110	19	0	2	0	0	0	0	0	0	0	0	0	0	131
Hour Total	0	365	51	3	10	0	1	0	0	0	0	0	0	0	0	430
08:15	0	86	10	0	1	0	0	0	0	0	0	0	0	0	0	97
08:30	0	72	15	0	0	0	0	0	0	0	0	0	0	0	0	87
08:45	0	117	18	2	6	1	0	1	0	0	0	0	0	0	0	145
09:00	2	97	17	1	2	0	0	0	0	0	0	0	0	0	0	119
Hour Total	2	372	60	3	9	1	0	1	0	0	0	0	0	0	0	448
09:15	1	73	10	0	2	0	0	1	0	0	0	0	0	0	0	87
09:30	0	79	17	2	7	0	0	0	0	0	0	0	0	0	0	105
09:45	0	87	14	0	1	0	0	0	0	0	0	0	0	0	0	102
10:00	0	86	14	0	2	1	0	0	0	0	0	0	0	0	0	103
Hour Total	1	325	55	2	12	1	0	1	0	0	0	0	0	0	0	397
10:15	0	92	14	1	1	0	0	0	0	0	0	0	0	0	0	108
10:30	0	71	11	0	3	1	0	1	0	0	0	0	0	0	0	87
10:45	1	74	13	0	0	1	0	0	0	0	0	0	0	0	0	89
11:00	0	66	24	0	3	0	0	3	0	0	0	0	0	0	0	96
Hour Total	1	303	62	1	7	2	0	4	0	0	0	0	0	0	0	380
11:15	0	73	9	1	1	0	0	0	0	0	0	0	0	0	0	84
11:30	0	71	11	0	0	0	0	0	0	0	0	0	0	0	0	82
11:45	0	66	12	0	3	0	0	1	0	0	0	0	0	0	0	82
12:00	1	62	17	1	0	0	0	0	0	0	0	0	0	0	0	81
Hour Total	1	272	49	2	4	0	0	1	0	0	0	0	0	0	0	329
DAY TOTAL	15	5152	899	29	115	12	1	15	2	1	0	0	0	0	0	6241
PERCENTS	0.3%	82.6%	14.5%	0.5%	1.8%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.1% Trucks & Buses 2.8%

AM Times	08:30	08:00	08:00	06:45	08:45	06:15	06:45	10:15								08:00
AM Peaks	3	385	62	5	17	3	1	4								460
PM Times	16:30	17:30	16:45	15:30	14:30	14:15		13:00	12:45	13:30						16:15
PM Peaks	3	441	86	5	17	3		3	1	1						518

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	52	13	0	1	1	0	0	0	0	0	0	0	0	0	67
12:30	0	63	13	0	3	2	0	0	0	0	0	0	0	0	0	81
12:45	1	87	20	0	6	1	0	0	0	0	0	0	0	0	0	115
13:00	0	74	9	0	3	1	0	0	0	0	0	0	0	0	0	87
Hour Total	1	276	55	0	13	5	0	0	0	0	0	0	0	0	0	350
13:15	1	57	9	0	0	0	0	1	0	0	0	0	0	0	0	68
13:30	0	53	11	0	2	1	0	0	0	0	0	0	0	0	0	67
13:45	0	67	17	1	2	1	0	0	0	0	0	0	0	0	0	88
14:00	0	73	14	2	5	1	0	1	0	0	0	0	0	0	0	96
Hour Total	1	250	51	3	9	3	0	2	0	0	0	0	0	0	0	319
14:15	1	83	12	2	5	0	0	0	0	0	0	0	0	0	0	103
14:30	0	70	24	0	1	0	0	0	0	0	0	0	0	0	0	95
14:45	1	75	18	0	2	0	0	3	0	0	0	0	0	0	0	99
15:00	0	84	14	0	2	0	0	1	0	0	0	0	0	0	0	101
Hour Total	2	312	68	2	10	0	0	4	0	0	0	0	0	0	0	398
15:15	0	103	17	0	6	1	0	0	0	0	0	0	0	0	0	127
15:30	0	108	10	3	4	0	0	3	0	0	0	0	0	0	0	128
15:45	0	88	18	0	2	2	0	0	1	0	0	0	0	0	0	111
16:00	0	76	16	0	4	0	0	1	0	0	0	0	0	0	0	97
Hour Total	0	375	61	3	16	3	0	4	1	0	0	0	0	0	0	463
16:15	0	106	13	1	2	0	0	0	0	0	0	0	0	0	0	122
16:30	0	97	19	3	2	0	0	1	0	0	0	0	0	0	0	122
16:45	0	82	16	0	2	0	0	0	0	0	0	0	0	0	0	100
17:00	0	109	18	0	1	0	0	0	0	0	0	0	0	0	0	128
Hour Total	0	394	66	4	7	0	0	1	0	0	0	0	0	0	0	472
17:15	1	93	19	1	2	0	0	0	0	0	0	0	0	0	0	116
17:30	0	123	20	0	1	0	0	0	0	0	0	0	0	0	0	144
17:45	0	118	17	0	0	0	0	1	0	0	0	0	0	0	0	136
18:00	0	124	19	0	2	0	0	0	0	0	0	0	0	0	0	145
Hour Total	1	458	75	1	5	0	0	1	0	0	0	0	0	0	0	541
18:15	0	84	7	0	0	0	0	0	0	0	0	0	0	0	0	91
18:30	1	89	12	0	0	0	0	0	0	0	0	0	0	0	0	102
18:45	0	107	10	0	1	0	0	0	0	0	0	0	0	0	0	118
19:00	0	88	12	0	1	0	0	0	0	0	0	0	0	0	0	101
Hour Total	1	368	41	0	2	0	0	0	0	0	0	0	0	0	0	412
19:15	0	102	19	0	1	1	0	0	0	0	0	0	0	0	0	123
19:30	0	103	14	0	0	0	0	0	0	0	0	0	0	0	0	117
19:45	0	115	23	0	1	0	0	0	0	0	0	0	0	0	0	139
20:00	0	45	9	0	0	0	0	0	0	0	0	0	0	0	0	54
Hour Total	0	365	65	0	2	1	0	0	0	0	0	0	0	0	0	433
20:15	0	58	8	0	0	0	0	0	0	0	0	0	0	0	0	66
20:30	0	63	8	0	0	0	0	0	0	0	0	0	0	0	0	71
20:45	0	49	3	0	0	0	0	2	0	0	0	0	0	0	0	54
21:00	0	48	13	0	0	0	0	0	0	0	0	0	0	0	0	61

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	218	32	0	0	0	0	2	0	0	0	0	0	0	0	252
21:15	0	52	5	0	0	0	0	0	0	0	0	0	0	0	0	57
21:30	0	64	14	0	0	0	0	0	0	0	0	0	0	0	0	78
21:45	1	58	6	0	0	0	0	0	0	0	0	0	0	0	0	65
22:00	0	41	6	0	0	0	0	0	0	0	0	0	0	0	0	47
Hour Total	1	215	31	0	0	0	0	0	0	0	0	0	0	0	0	247
22:15	0	22	2	0	0	0	0	0	0	0	0	0	0	0	0	24
22:30	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
22:45	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
23:00	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	19
Hour Total	0	67	4	0	0	0	0	0	0	0	0	0	0	0	0	71
23:15	0	20	5	0	0	0	0	0	0	0	0	0	0	0	0	25
23:30	1	17	1	0	0	0	0	0	0	0	0	0	0	0	0	19
23:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
24:00	0	14	0	0	1	0	0	0	0	0	0	0	0	0	0	15
Hour Total	1	54	6	0	1	0	0	0	0	0	0	0	0	0	0	62
00:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
00:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
00:45	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	17	2	0	0	0	0	0	0	0	0	0	0	0	0	19
01:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
03:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10
04:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:30	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	9
04:45	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	14	6	0	0	0	0	0	0	0	0	0	0	0	0	20

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
05:30	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	14
05:45	0	20	3	0	0	0	0	0	0	0	0	0	0	0	0	23
06:00	0	26	2	0	1	0	0	0	0	0	0	0	0	0	0	29
Hour Total	0	66	8	0	1	0	0	0	0	0	0	0	0	0	0	75
06:15	0	20	7	1	0	0	0	0	0	0	0	0	0	0	0	28
06:30	0	34	7	0	1	0	0	0	0	0	0	0	0	0	0	42
06:45	0	37	8	0	2	0	0	0	0	0	0	0	0	0	0	47
07:00	0	72	14	1	1	1	0	0	0	0	0	0	0	0	0	89
Hour Total	0	163	36	2	4	1	0	0	0	0	0	0	0	0	0	206
07:15	0	104	17	1	0	0	0	0	1	0	0	0	0	0	0	123
07:30	1	46	15	2	1	0	1	0	0	0	0	0	0	0	0	66
07:45	0	94	9	1	4	0	2	0	0	0	0	0	0	0	0	110
08:00	0	93	13	0	4	0	0	0	0	0	0	0	0	0	0	110
Hour Total	1	337	54	4	9	0	3	0	1	0	0	0	0	0	0	409
08:15	0	87	5	0	1	0	0	1	0	0	0	0	0	0	0	94
08:30	0	70	10	0	0	1	0	0	0	0	0	0	0	0	0	81
08:45	0	127	16	3	6	0	0	1	0	0	0	0	0	0	0	153
09:00	1	107	16	2	3	0	0	1	0	0	0	0	0	0	0	130
Hour Total	1	391	47	5	10	1	0	3	0	0	0	0	0	0	0	458
09:15	0	72	10	0	2	0	0	0	0	0	0	0	0	0	0	84
09:30	0	94	12	2	7	0	1	0	0	0	0	0	0	0	0	116
09:45	3	68	15	0	2	1	0	1	0	0	0	0	0	0	0	90
10:00	0	84	7	0	1	2	0	0	0	0	0	0	0	0	0	94
Hour Total	3	318	44	2	12	3	1	1	0	0	0	0	0	0	0	384
10:15	0	98	11	1	2	0	0	0	1	0	0	0	0	0	0	113
10:30	0	84	10	0	0	1	0	0	0	0	0	0	0	0	0	95
10:45	0	80	15	0	3	0	2	1	0	0	0	0	0	0	0	101
11:00	0	82	8	0	1	0	1	0	0	0	0	0	0	0	0	92
Hour Total	0	344	44	1	6	1	3	1	1	0	0	0	0	0	0	401
11:15	0	71	29	1	1	0	0	0	0	0	0	0	0	0	0	102
11:30	0	72	20	0	1	1	0	0	0	0	0	0	0	0	0	94
11:45	1	90	15	0	1	0	0	0	0	0	0	0	0	0	0	107
12:00	0	70	16	0	4	0	0	0	0	0	0	0	0	0	0	90
Hour Total	1	303	80	1	7	1	0	0	0	0	0	0	0	0	0	393
DAY TOTAL	14	5326	878	28	114	19	7	19	3	0	0	0	0	0	0	6408
PERCENTS	0.3%	83.2%	13.8%	0.5%	1.7%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.0% Trucks & Buses 2.9%

AM Times	09:00	08:45	11:15	08:45	08:45	09:45	07:00	08:15	06:30							08:45
AM Peaks	4	400	80	7	18	4	3	3	1							483
PM Times	12:30	17:15	17:15	13:30	15:15	12:15		14:45	15:00							17:15
PM Peaks	2	458	75	5	16	5		7	1							541

GRAND TOTAL	39	2664	344	8	13	1	1	0								
	15633	85	51	38	1	0	0	18878								
PERCENTS	0.3%	82.9%	14.2%	0.4%	1.8%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	1	0	0	0	0	0	5	18	28	42	8	0	0	0	102
12:30	0	0	0	0	0	0	2	14	37	25	5	0	0	0	83
12:45	0	0	0	0	0	0	0	18	48	19	5	0	0	0	90
13:00	0	0	0	0	0	0	0	27	38	42	7	0	0	0	114
Hour Total	1	0	0	0	0	0	7	77	151	128	25	0	0	0	389
13:15	0	0	0	0	0	0	0	12	42	29	4	1	0	0	88
13:30	0	0	0	0	0	0	1	13	31	38	7	2	0	0	92
13:45	0	0	0	0	0	1	0	17	34	26	8	1	0	0	87
14:00	0	0	0	0	0	0	1	11	31	28	7	0	0	0	78
Hour Total	0	0	0	0	0	1	2	53	138	121	26	4	0	0	345
14:15	0	0	0	0	0	1	8	19	45	24	4	0	0	0	101
14:30	0	2	4	2	3	4	19	24	21	9	0	0	0	0	88
14:45	0	0	0	0	0	0	15	22	42	24	5	0	0	0	108
15:00	0	0	0	0	0	0	1	17	46	45	6	0	0	0	115
Hour Total	0	2	4	2	3	5	43	82	154	102	15	0	0	0	412
15:15	0	0	0	0	0	8	26	53	26	6	4	0	0	0	123
15:30	0	0	0	0	5	5	23	31	44	19	0	1	0	0	128
15:45	0	0	0	0	0	2	6	22	49	34	5	3	0	0	121
16:00	0	0	0	0	0	0	5	30	39	20	6	0	0	0	100
Hour Total	0	0	0	0	5	15	60	136	158	79	15	4	0	0	472
16:15	0	0	0	0	0	0	3	29	37	36	3	1	0	1	110
16:30	0	0	0	0	0	0	2	27	62	27	8	0	0	0	126
16:45	0	0	0	0	0	0	1	21	45	46	9	1	2	1	126
17:00	0	0	0	0	0	0	3	19	45	55	9	1	0	0	132
Hour Total	0	0	0	0	0	0	9	96	189	164	29	3	2	2	494
17:15	0	0	0	0	0	0	5	17	67	30	6	1	1	0	127
17:30	0	0	1	4	8	2	7	18	53	41	5	1	0	1	141
17:45	0	0	0	0	0	3	5	18	38	51	9	0	0	2	126
18:00	0	0	0	0	0	0	8	22	57	40	4	1	0	0	132
Hour Total	0	0	1	4	8	5	25	75	215	162	24	3	1	3	526
18:15	0	0	0	0	0	0	2	22	37	27	5	0	1	0	94
18:30	0	0	0	0	0	0	1	8	30	34	4	2	1	0	80
18:45	0	0	0	0	0	0	2	19	43	34	6	0	0	0	104
19:00	0	0	0	0	0	0	8	27	33	32	6	0	0	0	106
Hour Total	0	0	0	0	0	0	13	76	143	127	21	2	2	0	384
19:15	0	0	0	0	0	0	12	33	40	24	4	0	0	0	113
19:30	1	0	0	0	0	0	1	34	46	28	3	1	0	0	114
19:45	0	0	0	0	0	1	5	23	46	18	6	0	0	0	99
20:00	0	0	0	0	0	1	1	12	32	36	3	0	0	0	85
Hour Total	1	0	0	0	0	2	19	102	164	106	16	1	0	0	411
20:15	0	0	0	0	0	0	7	13	18	15	2	0	0	0	55
20:30	0	0	0	0	0	1	2	12	30	21	1	0	0	0	67
20:45	0	0	0	0	0	0	4	18	22	12	2	1	0	0	59
21:00	0	0	0	0	0	0	5	20	12	14	1	0	0	0	52

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	1	18	63	82	62	6	1	0	0	233
21:15	0	0	0	0	0	1	4	12	25	9	1	0	0	0	52
21:30	0	0	0	0	0	0	5	11	26	17	5	0	0	0	64
21:45	0	0	0	0	0	1	4	10	17	11	1	1	0	0	45
22:00	0	0	0	0	0	0	1	6	12	8	0	0	0	0	27
Hour Total	0	0	0	0	0	2	14	39	80	45	7	1	0	0	188
22:15	0	0	0	0	0	1	1	5	10	5	1	0	0	0	23
22:30	0	0	0	0	0	0	2	2	7	9	3	0	0	0	23
22:45	0	0	0	0	0	0	0	3	8	5	0	0	0	0	16
23:00	0	0	0	0	0	0	1	4	4	3	0	0	0	0	12
Hour Total	0	0	0	0	0	1	4	14	29	22	4	0	0	0	74
23:15	0	0	0	0	0	0	1	8	12	7	2	0	0	0	30
23:30	0	0	0	0	0	0	0	1	10	1	0	0	0	0	12
23:45	0	0	0	0	0	0	0	2	2	2	0	0	0	0	6
24:00	0	0	0	0	0	0	1	1	7	3	0	0	0	0	12
Hour Total	0	0	0	0	0	0	2	12	31	13	2	0	0	0	60
00:15	0	0	0	0	0	0	0	0	5	2	0	0	0	0	7
00:30	0	0	0	0	0	0	0	2	3	2	0	0	0	0	7
00:45	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
01:00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
Hour Total	0	0	0	0	0	0	0	3	13	4	0	0	0	0	20
01:15	0	0	0	0	0	0	0	1	2	3	0	0	0	0	6
01:30	0	0	0	0	0	0	0	0	1	2	1	0	0	0	4
01:45	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
02:00	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Hour Total	0	0	0	0	0	0	0	2	5	6	1	0	0	0	14
02:15	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	1	3	0	0	0	0	0	4
03:15	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
03:30	0	0	0	0	0	0	0	1	1	2	0	0	0	0	4
03:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	2	0	3	0	0	0	0	5
Hour Total	0	0	0	0	0	0	0	3	3	6	0	0	0	0	12
04:15	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3
04:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45	0	0	0	0	0	0	0	0	5	3	1	0	0	0	9
05:00	0	0	0	0	0	0	0	2	2	1	0	0	0	0	5
Hour Total	0	0	0	0	0	0	0	4	7	7	1	0	0	0	19

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	1	1	0	3	3	0	0	0	0	8
05:30	0	0	0	0	0	0	0	4	5	4	1	0	0	0	14
05:45	0	0	0	0	0	0	2	4	12	6	1	0	0	0	25
06:00	0	0	0	0	0	0	1	4	13	7	2	0	0	0	27
Hour Total	0	0	0	0	0	1	4	12	33	20	4	0	0	0	74
06:15	0	0	0	0	0	0	1	4	9	9	3	1	0	0	27
06:30	0	0	0	0	0	0	1	12	13	14	3	0	0	0	43
06:45	0	0	0	0	0	0	2	6	20	24	0	0	0	0	52
07:00	0	0	0	0	0	0	2	25	34	21	2	2	0	0	86
Hour Total	0	0	0	0	0	0	6	47	76	68	8	3	0	0	208
07:15	1	4	6	2	4	8	21	28	27	13	2	0	0	0	116
07:30	0	0	0	0	1	7	12	23	25	7	4	0	0	0	79
07:45	0	0	0	0	0	0	1	18	31	41	5	0	0	0	96
08:00	0	0	0	0	0	0	2	25	50	38	4	0	0	1	120
Hour Total	1	4	6	2	5	15	36	94	133	99	15	0	0	1	411
08:15	0	0	0	0	0	0	1	14	39	34	6	1	0	0	95
08:30	0	0	0	0	0	0	0	23	50	35	5	0	0	0	113
08:45	1	0	0	1	0	3	30	58	41	18	2	0	0	0	154
09:00	0	0	0	0	0	0	9	32	52	16	1	0	0	0	110
Hour Total	1	0	0	1	0	3	40	127	182	103	14	1	0	0	472
09:15	0	0	0	0	0	1	4	18	40	24	4	1	0	0	92
09:30	0	0	0	0	0	0	2	29	47	23	6	0	0	0	107
09:45	0	0	0	0	0	0	2	17	30	40	5	1	0	0	95
10:00	0	0	0	0	2	1	0	11	40	29	4	0	1	0	88
Hour Total	0	0	0	0	2	2	8	75	157	116	19	2	1	0	382
10:15	0	0	0	0	0	0	3	11	27	30	6	0	0	0	77
10:30	0	0	0	0	0	0	0	18	43	31	4	0	0	0	96
10:45	0	0	0	0	0	0	2	16	30	17	4	0	0	1	70
11:00	0	0	0	0	0	0	2	24	34	13	3	0	0	0	76
Hour Total	0	0	0	0	0	0	7	69	134	91	17	0	0	1	319
11:15	1	0	0	0	0	0	5	16	32	32	2	0	0	1	89
11:30	0	0	0	0	0	0	0	20	20	22	5	0	0	0	67
11:45	0	0	0	0	0	0	4	14	26	14	7	0	0	0	65
12:00	0	0	0	0	0	0	4	22	27	29	2	0	0	1	85
Hour Total	1	0	0	0	0	0	13	72	105	97	16	0	0	2	306
DAY TOTAL	5	6	11	9	23	53	330	1334	2385	1748	285	25	6	9	6229
PERCENTS	0.1%	0.1%	0.2%	0.2%	0.4%	0.9%	5.3%	21.5%	38.3%	28.0%	4.5%	0.4%	0.0%	0.1%	100%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
41.9 mph

85th Percentile Speed
53.3 mph

Median Speed
47.8 mph

Average Speed
47.5 mph

10 MPH Pace Speed
45 mph to 55 mph
4133 vehicles in pace
Representing 66.3% of the total vehicles

Vehicles > 45 MPH
4458
71.6%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	0	4	16	25	32	4	1	0	0	82
12:30	0	0	0	0	0	0	2	30	36	21	5	0	0	0	94
12:45	0	0	0	0	0	0	2	17	36	27	6	0	0	0	88
13:00	0	0	0	0	0	0	1	21	36	25	5	0	0	0	88
Hour Total	0	0	0	0	0	0	9	84	133	105	20	1	0	0	352
13:15	0	0	0	0	0	0	0	12	34	31	4	1	0	0	82
13:30	0	0	0	0	0	0	0	17	45	28	5	1	0	0	96
13:45	0	0	1	0	0	0	0	10	39	38	12	2	0	0	102
14:00	0	0	0	0	0	0	2	17	36	26	2	0	0	0	83
Hour Total	0	0	1	0	0	0	2	56	154	123	23	4	0	0	363
14:15	0	0	0	0	0	3	3	17	45	23	5	0	0	0	96
14:30	0	0	0	0	0	10	17	30	24	12	0	0	0	0	93
14:45	0	0	0	0	0	2	5	18	29	28	5	0	1	0	88
15:00	0	0	0	0	0	1	8	20	46	30	3	0	0	0	108
Hour Total	0	0	0	0	0	16	33	85	144	93	13	0	1	0	385
15:15	0	0	0	0	2	1	21	43	45	15	2	1	0	0	130
15:30	0	0	0	0	0	4	21	26	31	20	2	0	0	0	104
15:45	0	0	0	0	0	0	2	18	42	33	4	0	0	1	100
16:00	0	0	0	0	0	0	10	23	31	27	7	0	0	0	98
Hour Total	0	0	0	0	2	5	54	110	149	95	15	1	0	1	432
16:15	0	0	0	0	0	0	1	29	50	54	3	1	0	0	138
16:30	0	0	0	0	0	0	3	26	48	45	5	0	1	0	128
16:45	0	0	0	0	0	0	5	24	62	26	7	1	0	0	125
17:00	0	0	0	0	0	0	1	22	48	50	4	1	1	0	127
Hour Total	0	0	0	0	0	0	10	101	208	175	19	3	2	0	518
17:15	0	0	0	0	0	0	0	12	44	52	8	1	0	0	117
17:30	0	0	0	0	0	0	3	22	48	49	11	0	0	0	133
17:45	0	0	0	0	0	0	4	22	69	41	1	0	1	0	138
18:00	0	0	0	0	0	2	0	16	56	44	7	1	0	0	126
Hour Total	0	0	0	0	0	2	7	72	217	186	27	2	1	0	514
18:15	0	1	0	0	0	0	3	17	48	35	11	0	0	1	116
18:30	0	0	0	0	0	0	2	11	36	48	6	0	0	0	103
18:45	0	0	0	0	0	1	4	15	47	29	6	1	0	0	103
19:00	0	0	0	0	0	0	0	16	38	35	3	1	0	0	93
Hour Total	0	1	0	0	0	1	9	59	169	147	26	2	0	1	415
19:15	0	0	0	0	0	0	4	27	46	27	5	0	0	0	109
19:30	0	0	0	0	0	0	4	35	71	28	0	1	0	0	139
19:45	0	0	0	0	0	1	4	39	57	19	3	1	0	0	124
20:00	0	0	0	0	0	1	3	13	16	13	2	0	0	0	48
Hour Total	0	0	0	0	0	2	15	114	190	87	10	2	0	0	420
20:15	0	0	0	0	0	0	1	13	25	18	2	1	0	0	60
20:30	0	0	0	0	0	0	2	19	22	21	0	0	0	0	64
20:45	0	0	0	0	0	0	3	3	16	17	7	0	0	0	46
21:00	0	0	0	0	0	0	3	25	26	8	0	0	0	0	62

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	0	9	60	89	64	9	1	0	0	232
21:15	0	0	0	0	0	0	2	15	15	12	1	0	0	0	45
21:30	0	0	0	0	0	0	1	9	15	10	1	0	0	0	36
21:45	0	0	0	0	0	0	2	18	8	10	1	0	0	0	39
22:00	0	0	0	0	0	1	1	7	7	4	2	0	1	0	23
Hour Total	0	0	0	0	0	1	6	49	45	36	5	0	1	0	143
22:15	0	0	0	0	0	0	0	4	8	7	1	1	0	0	21
22:30	0	0	0	0	0	0	0	6	8	6	0	0	0	0	20
22:45	0	0	0	0	0	0	2	5	11	5	0	1	0	0	24
23:00	0	0	0	0	0	0	1	7	11	3	1	0	0	0	23
Hour Total	0	0	0	0	0	0	3	22	38	21	2	2	0	0	88
23:15	0	0	0	0	0	0	0	4	9	3	1	0	0	0	17
23:30	0	0	0	0	0	1	0	7	7	2	0	0	0	0	17
23:45	0	0	0	0	0	0	0	3	1	2	0	0	0	0	6
24:00	0	0	0	0	0	0	0	2	3	0	0	0	0	0	5
Hour Total	0	0	0	0	0	1	0	16	20	7	1	0	0	0	45
00:15	0	0	0	0	0	1	0	2	5	1	1	0	0	0	10
00:30	0	0	0	0	0	0	1	1	1	1	0	0	0	0	4
00:45	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
01:00	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3
Hour Total	0	0	0	0	0	1	1	5	9	3	1	0	0	0	20
01:15	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	2	5	0	0	0	0	0	7
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	0	0	2	9	0	0	0	0	0	11
02:15	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
02:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
Hour Total	0	0	0	0	0	0	0	0	7	3	0	0	0	0	10
03:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
03:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
04:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Hour Total	0	0	0	0	0	0	0	1	6	2	0	0	0	0	9
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	3	1	1	1	0	0	0	6
04:45	0	0	0	0	0	0	0	2	2	0	1	0	0	0	5
05:00	0	0	0	0	0	0	0	1	5	1	0	0	0	0	7
Hour Total	0	0	0	0	0	0	0	6	8	2	2	0	0	0	18

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	4	4	1	1	0	0	0	10
05:30	0	0	0	0	0	0	0	1	6	7	0	0	0	0	14
05:45	0	0	0	0	0	0	0	2	11	7	3	0	0	0	23
06:00	0	0	0	0	0	0	1	4	16	10	1	0	0	0	32
Hour Total	0	0	0	0	0	0	1	11	37	25	5	0	0	0	79
06:15	0	0	0	0	0	0	1	1	11	9	4	0	0	0	26
06:30	0	0	0	0	0	0	0	7	19	10	3	0	0	0	39
06:45	0	0	0	0	0	0	1	6	17	23	4	0	0	0	51
07:00	0	0	0	0	0	2	14	17	25	26	2	1	0	0	87
Hour Total	0	0	0	0	0	2	16	31	72	68	13	1	0	0	203
07:15	0	0	0	1	1	3	16	58	30	9	1	0	0	0	119
07:30	0	0	0	0	1	4	12	21	28	7	1	0	0	1	75
07:45	0	0	0	0	0	0	3	17	45	36	4	0	0	0	105
08:00	0	0	0	0	0	0	3	12	53	56	6	1	0	0	131
Hour Total	0	0	0	1	2	7	34	108	156	108	12	1	0	1	430
08:15	0	0	0	0	0	0	2	14	31	44	6	0	0	0	97
08:30	0	0	0	0	0	0	1	14	36	26	9	1	0	0	87
08:45	0	0	0	0	0	1	10	57	56	19	2	0	0	0	145
09:00	1	0	0	0	0	2	14	45	43	13	1	0	0	0	119
Hour Total	1	0	0	0	0	3	27	130	166	102	18	1	0	0	448
09:15	0	0	0	0	0	1	4	13	46	18	5	0	0	0	87
09:30	0	0	0	0	0	0	2	22	55	24	2	0	0	0	105
09:45	0	0	0	0	0	0	2	15	54	24	7	0	0	0	102
10:00	0	0	0	0	0	0	1	27	37	31	7	0	0	0	103
Hour Total	0	0	0	0	0	1	9	77	192	97	21	0	0	0	397
10:15	0	0	0	0	0	0	1	30	48	26	2	1	0	0	108
10:30	0	0	0	0	0	0	0	21	37	20	8	1	0	0	87
10:45	0	0	0	0	0	0	2	16	35	30	6	0	0	0	89
11:00	0	0	0	0	0	0	3	17	45	24	7	0	0	0	96
Hour Total	0	0	0	0	0	0	6	84	165	100	23	2	0	0	380
11:15	0	0	0	0	0	1	1	14	38	24	5	1	0	0	84
11:30	0	0	0	0	0	1	1	13	43	21	3	0	0	0	82
11:45	0	0	0	0	0	0	3	18	36	19	6	0	0	0	82
12:00	0	0	0	0	0	0	4	14	32	25	6	0	0	0	81
Hour Total	0	0	0	0	0	2	9	59	149	89	20	1	0	0	329
DAY TOTAL	1	1	1	1	4	44	260	1342	2532	1738	285	24	5	3	6241
PERCENTS	0.1%	0.1%	0.1%	0.1%	0.1%	0.8%	4.1%	21.5%	40.5%	27.8%	4.5%	0.3%	0.0%	0.0%	100%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
42.3 mph

85th Percentile Speed
53.2 mph

Median Speed
47.9 mph

Average Speed
47.8 mph

10 MPH Pace Speed
45 mph to 55 mph
4270 vehicles in pace
Representing 68.4% of the total vehicles

Vehicles > 45 MPH
4587
73.5%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	0	0	7	31	21	6	1	0	1	67
12:30	0	0	0	0	0	0	2	8	35	33	3	0	0	0	81
12:45	0	0	0	0	0	0	4	24	60	24	2	0	1	0	115
13:00	0	0	0	0	0	0	1	15	27	34	9	1	0	0	87
Hour Total	0	0	0	0	0	0	7	54	153	112	20	2	1	1	350
13:15	0	0	0	0	0	0	1	11	28	23	4	1	0	0	68
13:30	0	0	0	0	0	0	4	10	27	25	1	0	0	0	67
13:45	0	0	0	0	0	0	1	15	36	31	5	0	0	0	88
14:00	0	0	0	0	0	0	3	17	37	35	3	1	0	0	96
Hour Total	0	0	0	0	0	0	9	53	128	114	13	2	0	0	319
14:15	1	0	0	0	0	0	8	25	42	19	8	0	0	0	103
14:30	0	0	0	1	1	8	15	34	25	10	0	1	0	0	95
14:45	0	0	0	0	0	3	13	32	33	15	2	1	0	0	99
15:00	0	0	0	0	0	4	10	18	36	28	5	0	0	0	101
Hour Total	1	0	0	1	1	15	46	109	136	72	15	2	0	0	398
15:15	0	0	0	0	3	6	21	53	41	2	0	0	1	0	127
15:30	0	0	0	0	0	1	11	50	47	18	1	0	0	0	128
15:45	0	0	0	0	0	0	11	21	38	36	5	0	0	0	111
16:00	0	0	0	0	1	0	2	12	41	33	7	1	0	0	97
Hour Total	0	0	0	0	4	7	45	136	167	89	13	1	1	0	463
16:15	0	0	0	0	0	0	2	25	49	34	11	0	1	0	122
16:30	0	0	0	0	0	0	3	31	42	36	7	2	1	0	122
16:45	0	0	0	0	0	0	2	22	34	35	4	2	0	1	100
17:00	0	0	0	0	0	0	1	13	70	39	3	1	1	0	128
Hour Total	0	0	0	0	0	0	8	91	195	144	25	5	3	1	472
17:15	1	0	0	0	0	0	1	8	54	42	8	2	0	0	116
17:30	0	0	0	0	0	0	1	27	55	56	5	0	0	0	144
17:45	0	0	0	0	0	0	4	16	60	44	10	2	0	0	136
18:00	0	0	0	0	0	0	2	14	63	57	8	1	0	0	145
Hour Total	1	0	0	0	0	0	8	65	232	199	31	5	0	0	541
18:15	0	0	0	0	0	1	0	19	37	27	6	0	0	1	91
18:30	0	0	0	0	0	0	1	16	49	28	8	0	0	0	102
18:45	0	0	0	0	0	0	4	20	58	26	10	0	0	0	118
19:00	0	0	0	0	0	0	2	22	47	22	7	1	0	0	101
Hour Total	0	0	0	0	0	1	7	77	191	103	31	1	0	1	412
19:15	0	0	0	0	0	5	2	23	52	37	4	0	0	0	123
19:30	0	0	0	0	0	0	6	35	45	27	4	0	0	0	117
19:45	0	0	0	0	0	2	7	40	47	39	4	0	0	0	139
20:00	0	0	0	0	0	0	4	12	22	8	4	3	1	0	54
Hour Total	0	0	0	0	0	7	19	110	166	111	16	3	1	0	433
20:15	0	0	0	0	0	0	3	16	21	22	4	0	0	0	66
20:30	0	0	0	0	0	0	3	17	22	29	0	0	0	0	71
20:45	0	0	0	0	0	0	3	16	23	12	0	0	0	0	54
21:00	0	0	0	0	0	0	5	15	26	13	2	0	0	0	61

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	0	14	64	92	76	6	0	0	0	252
21:15	0	0	0	0	2	0	6	14	21	14	0	0	0	0	57
21:30	0	0	0	0	0	0	12	24	25	16	1	0	0	0	78
21:45	1	0	0	0	0	0	3	9	32	17	3	0	0	0	65
22:00	0	0	0	0	0	0	1	13	24	8	1	0	0	0	47
Hour Total	1	0	0	0	2	0	22	60	102	55	5	0	0	0	247
22:15	0	0	0	0	0	0	1	4	13	6	0	0	0	0	24
22:30	0	0	0	0	0	1	0	5	8	2	0	0	0	0	16
22:45	0	0	0	0	0	0	0	5	7	0	0	0	0	0	12
23:00	0	0	0	0	0	0	0	2	12	4	0	1	0	0	19
Hour Total	0	0	0	0	0	1	1	16	40	12	0	1	0	0	71
23:15	0	0	0	0	0	0	0	3	10	10	2	0	0	0	25
23:30	0	0	0	0	0	0	1	8	7	3	0	0	0	0	19
23:45	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
24:00	0	0	0	0	0	0	0	7	5	3	0	0	0	0	15
Hour Total	0	0	0	0	0	0	1	19	24	16	2	0	0	0	62
00:15	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3
00:30	0	0	0	0	0	0	0	0	3	3	0	0	0	0	6
00:45	0	0	0	0	0	0	0	0	2	3	0	0	0	0	5
01:00	0	0	0	0	0	0	0	1	3	1	0	0	0	0	5
Hour Total	0	0	0	0	0	0	0	1	10	7	1	0	0	0	19
01:15	0	0	0	0	0	0	1	1	0	1	1	0	0	0	4
01:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
01:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Hour Total	0	0	0	0	0	0	1	3	1	2	1	0	0	0	8
02:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
02:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
02:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	0	0	3	2	0	0	0	0	0	5
03:15	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3
03:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
04:00	0	0	0	0	0	0	1	0	0	2	0	0	0	0	3
Hour Total	0	0	0	0	0	0	1	1	4	4	0	0	0	0	10
04:15	0	0	0	0	0	0	0	1	0	2	0	0	0	0	3
04:30	0	0	0	0	0	0	0	4	4	1	0	0	0	0	9
04:45	0	0	0	0	0	0	0	2	1	2	0	0	0	0	5
05:00	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
Hour Total	0	0	0	0	0	0	0	7	6	7	0	0	0	0	20

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	1	1	0	6	1	0	0	0	0	9
05:30	0	0	0	0	0	0	1	1	7	5	0	0	0	0	14
05:45	0	0	0	0	0	0	1	2	13	6	0	1	0	0	23
06:00	0	0	0	0	0	0	1	4	11	13	0	0	0	0	29
Hour Total	0	0	0	0	0	1	4	7	37	25	0	1	0	0	75
06:15	0	0	0	0	0	0	0	4	8	12	3	1	0	0	28
06:30	0	0	0	0	0	0	1	10	14	13	3	1	0	0	42
06:45	0	0	0	0	0	0	0	10	23	13	0	1	0	0	47
07:00	1	0	0	0	0	0	4	12	40	24	7	1	0	0	89
Hour Total	1	0	0	0	0	0	5	36	85	62	13	4	0	0	206
07:15	0	0	0	0	5	8	24	40	33	13	0	0	0	0	123
07:30	0	0	0	0	1	8	8	16	22	10	1	0	0	0	66
07:45	0	0	0	0	0	2	3	24	42	33	6	0	0	0	110
08:00	0	0	0	0	0	0	4	20	37	37	10	2	0	0	110
Hour Total	0	0	0	0	6	18	39	100	134	93	17	2	0	0	409
08:15	0	0	0	0	0	0	1	20	34	33	6	0	0	0	94
08:30	0	0	0	0	0	0	1	15	35	25	3	2	0	0	81
08:45	0	0	0	0	0	0	19	53	58	21	2	0	0	0	153
09:00	0	0	0	0	1	8	16	47	34	23	1	0	0	0	130
Hour Total	0	0	0	0	1	8	37	135	161	102	12	2	0	0	458
09:15	0	0	0	0	0	2	3	21	34	22	2	0	0	0	84
09:30	0	0	0	0	0	0	5	23	48	38	2	0	0	0	116
09:45	1	0	0	0	0	0	1	27	33	23	4	1	0	0	90
10:00	0	0	0	0	0	0	5	25	42	16	6	0	0	0	94
Hour Total	1	0	0	0	0	2	14	96	157	99	14	1	0	0	384
10:15	0	0	0	0	0	1	2	18	56	31	5	0	0	0	113
10:30	0	0	0	0	0	2	5	25	30	26	6	1	0	0	95
10:45	0	0	0	0	0	0	2	16	44	35	4	0	0	0	101
11:00	0	0	0	0	0	0	4	32	42	11	3	0	0	0	92
Hour Total	0	0	0	0	0	3	13	91	172	103	18	1	0	0	401
11:15	0	0	0	0	0	0	1	27	44	26	4	0	0	0	102
11:30	0	0	0	0	0	0	2	25	39	25	3	0	0	0	94
11:45	1	0	0	0	0	0	1	20	54	26	3	2	0	0	107
12:00	0	0	0	0	0	0	3	15	36	29	5	1	1	0	90
Hour Total	1	0	0	0	0	0	7	87	173	106	15	3	1	0	393
DAY TOTAL	6	0	0	1	14	63	308	1421	2568	1713	268	36	7	3	6408
PERCENTS	0.1%	0.0%	0.0%	0.1%	0.3%	1.0%	4.9%	22.2%	40.0%	26.7%	4.1%	0.5%	0.1%	0.0%	100%

Site Reference: Site B
Site ID: 000000003721
Location: Longhill, btw Warhill and Laffayette HS
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
GRAND TOTAL	12	12	41	898	7485	838	18								
	7	11	160	4097	5199	85	15								18878
PERCENTS	0.1%	0.1%	0.1%	0.1%	0.3%	0.9%	4.8%	21.7%	39.6%	27.5%	4.4%	0.4%	0.0%	0.0%	100%

Statistical Information...

15th Percentile Speed
42.0 mph

85th Percentile Speed
53.1 mph

Median Speed
47.7 mph

Average Speed
47.5 mph

10 MPH Pace Speed
45 mph to 55 mph
4281 vehicles in pace
Representing 66.8% of the total vehicles

Vehicles > 45 MPH
4595
71.7%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	75	9	0	5	0	0	0	0	0	0	0	0	0	0	89
12:30	1	73	18	1	1	0	0	0	1	0	0	0	0	0	0	95
12:45	0	80	20	0	2	2	0	0	1	0	0	0	0	0	0	105
13:00	0	73	11	0	2	0	0	0	0	1	0	0	0	0	0	87
Hour Total	1	301	58	1	10	2	0	0	2	1	0	0	0	0	0	376
13:15	0	74	16	0	2	2	0	0	0	0	0	0	0	0	0	94
13:30	0	87	21	0	2	2	0	0	0	0	0	0	0	0	0	112
13:45	0	80	10	0	1	0	0	0	0	0	0	0	0	0	0	91
14:00	0	76	18	0	3	1	0	1	0	0	0	0	0	0	0	99
Hour Total	0	317	65	0	8	5	0	1	0	0	0	0	0	0	0	396
14:15	0	73	18	0	3	1	0	0	1	0	0	0	0	0	0	96
14:30	0	90	22	1	6	0	0	0	0	0	0	0	0	0	0	119
14:45	0	109	21	0	3	0	0	1	0	0	1	0	0	0	0	135
15:00	1	103	19	0	5	0	0	0	0	0	0	0	0	0	0	128
Hour Total	1	375	80	1	17	1	0	1	1	0	1	0	0	0	0	478
15:15	1	121	25	0	2	0	1	0	0	0	0	0	0	0	0	150
15:30	0	101	17	0	6	0	0	0	0	0	0	0	0	0	0	124
15:45	1	114	18	3	1	1	0	0	0	0	0	0	0	0	0	138
16:00	1	116	17	0	3	0	0	0	0	0	0	0	0	0	0	137
Hour Total	3	452	77	3	12	1	1	0	0	0	0	0	0	0	0	549
16:15	0	127	15	1	1	0	0	0	0	0	0	0	0	0	0	144
16:30	0	126	19	0	3	0	0	0	0	0	0	0	0	0	0	148
16:45	0	149	24	0	2	1	0	0	0	0	0	0	0	0	0	176
17:00	1	136	23	0	0	0	0	0	0	0	0	0	0	0	0	160
Hour Total	1	538	81	1	6	1	0	0	0	0	0	0	0	0	0	628
17:15	2	175	31	3	1	1	0	0	0	0	0	0	0	0	0	213
17:30	1	191	26	0	1	0	0	0	0	0	0	0	0	0	0	219
17:45	0	184	23	0	0	0	0	0	0	0	0	0	0	0	0	207
18:00	0	132	14	0	0	0	0	0	0	0	0	0	0	0	0	146
Hour Total	3	682	94	3	2	1	0	0	0	0	0	0	0	0	0	785
18:15	0	130	17	0	0	0	0	0	0	0	0	0	0	0	0	147
18:30	1	112	14	0	2	0	0	0	0	0	0	0	0	0	0	129
18:45	0	109	16	0	0	0	0	0	0	0	0	0	0	0	0	125
19:00	0	103	12	0	0	0	0	0	0	0	0	0	0	0	0	115
Hour Total	1	454	59	0	2	0	0	0	0	0	0	0	0	0	0	516
19:15	1	102	10	0	1	0	0	0	0	0	0	0	0	0	0	114
19:30	0	85	5	0	0	0	0	0	0	0	0	0	0	0	0	90
19:45	1	70	6	0	0	0	0	0	0	0	0	0	0	0	0	77
20:00	1	61	1	0	1	0	0	0	0	0	0	0	0	0	0	64
Hour Total	3	318	22	0	2	0	0	0	0	0	0	0	0	0	0	345
20:15	0	67	8	0	0	0	0	0	0	0	0	0	0	0	0	75
20:30	0	59	7	0	1	0	0	0	0	0	0	0	0	0	0	67
20:45	0	65	2	0	0	0	0	0	0	0	0	0	0	0	0	67
21:00	0	52	5	0	0	1	0	0	0	0	0	0	0	0	0	58

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	243	22	0	1	1	0	0	0	0	0	0	0	0	0	267
21:15	0	67	5	0	0	0	0	0	0	0	0	0	0	0	0	72
21:30	0	53	5	0	0	0	0	0	0	0	0	0	0	0	0	58
21:45	0	57	3	0	1	0	0	0	0	0	0	0	0	0	0	61
22:00	0	40	2	0	0	0	0	0	0	0	0	0	0	0	0	42
Hour Total	0	217	15	0	1	0	0	0	0	0	0	0	0	0	0	233
22:15	0	43	1	0	0	0	0	0	0	0	0	0	0	0	0	44
22:30	0	24	1	0	0	0	0	0	0	0	0	0	0	0	0	25
22:45	0	28	4	0	0	0	0	0	0	0	0	0	0	0	0	32
23:00	0	21	1	0	0	0	0	0	0	0	0	0	0	0	0	22
Hour Total	0	116	7	0	0	0	0	0	0	0	0	0	0	0	0	123
23:15	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	18
23:30	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	16
23:45	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	22
24:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
Hour Total	0	60	4	0	0	0	0	0	0	0	0	0	0	0	0	64
00:15	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	12
00:30	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
00:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	31	3	0	0	0	0	0	0	0	0	0	0	0	0	34
01:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	14
02:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
03:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	10
04:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
05:30	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	9
05:45	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
06:00	0	25	2	0	0	0	0	0	0	0	0	0	0	0	0	27
Hour Total	0	47	8	0	0	0	0	0	0	0	0	0	0	0	0	55
06:15	0	6	1	0	0	0	0	0	1	0	0	0	0	0	0	8
06:30	0	16	4	1	4	0	0	0	0	0	0	0	0	0	0	25
06:45	0	29	3	0	3	0	0	0	0	0	0	0	0	0	0	35
07:00	1	39	8	0	2	0	0	0	0	0	0	0	0	0	0	50
Hour Total	1	90	16	1	9	0	0	0	1	0	0	0	0	0	0	118
07:15	1	54	12	1	5	0	0	0	0	0	0	0	0	0	0	73
07:30	0	51	19	0	2	0	0	0	0	0	0	0	0	0	0	72
07:45	1	74	10	1	7	1	0	0	0	0	0	0	0	0	0	94
08:00	0	80	28	0	2	0	0	0	0	0	0	0	0	0	0	110
Hour Total	2	259	69	2	16	1	0	0	0	0	0	0	0	0	0	349
08:15	0	66	14	1	5	0	0	0	0	0	0	0	0	0	0	86
08:30	0	84	16	0	6	0	0	0	0	0	0	0	0	0	0	106
08:45	0	85	22	0	2	1	0	0	0	0	0	0	0	0	0	110
09:00	0	91	21	1	7	1	0	0	0	0	0	0	0	0	0	121
Hour Total	0	326	73	2	20	2	0	0	0	0	0	0	0	0	0	423
09:15	0	62	21	0	4	0	0	1	0	0	0	0	0	0	0	88
09:30	0	48	18	0	4	0	0	1	0	0	0	0	0	0	0	71
09:45	0	50	11	0	1	0	0	0	0	0	0	0	0	0	0	62
10:00	0	48	14	0	2	0	0	0	0	0	0	0	0	0	0	64
Hour Total	0	208	64	0	11	0	0	2	0	0	0	0	0	0	0	285
10:15	0	50	8	0	0	0	0	0	0	0	0	0	0	0	0	58
10:30	2	47	15	1	4	0	0	1	0	0	0	0	0	0	0	70
10:45	1	50	18	0	4	0	0	0	0	0	0	0	0	0	0	73
11:00	0	65	11	0	1	0	0	0	1	0	0	0	0	0	0	78
Hour Total	3	212	52	1	9	0	0	1	1	0	0	0	0	0	0	279
11:15	1	47	19	2	1	2	0	0	0	0	0	0	0	0	0	72
11:30	0	70	21	0	1	1	0	0	0	0	0	0	0	0	0	93
11:45	0	66	19	0	0	0	0	0	0	0	0	0	0	0	0	85
12:00	0	64	16	0	6	0	0	0	0	0	0	0	0	0	0	86
Hour Total	1	247	75	2	8	3	0	0	0	0	0	0	0	0	0	336
DAY TOTAL	20	5529	949	17	134	18	1	5	5	1	1	0	0	0	0	6680
PERCENTS	0.3%	82.8%	14.3%	0.3%	2.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.2% Trucks & Buses 2.7%

AM Times	10:30	08:15	08:45	10:30	07:45	10:45		08:45	05:30							08:30
AM Peaks	4	326	82	3	20	3		2	1							425
PM Times	16:45	17:00	16:45	15:30	14:15	12:45	14:30	14:00	12:15	12:15	14:00					17:00
PM Peaks	4	686	104	4	17	6	1	2	2	1	1					799

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	75	21	0	1	1	0	0	0	0	0	0	0	0	0	98
12:30	0	91	20	0	2	0	0	0	0	0	0	0	0	0	0	113
12:45	1	63	10	0	1	0	0	0	0	0	0	0	0	0	0	75
13:00	0	84	17	0	3	0	0	0	0	1	0	0	0	0	0	105
Hour Total	1	313	68	0	7	1	0	0	0	1	0	0	0	0	0	391
13:15	1	65	19	0	3	0	0	1	0	0	0	0	0	0	0	89
13:30	1	70	26	0	1	0	0	1	0	0	0	0	0	0	0	99
13:45	0	83	14	0	2	0	0	1	0	0	0	0	0	0	0	100
14:00	0	73	15	0	4	1	0	0	0	0	0	0	0	0	0	93
Hour Total	2	291	74	0	10	1	0	3	0	0	0	0	0	0	0	381
14:15	0	92	19	0	5	0	0	0	0	0	0	0	0	0	0	116
14:30	0	127	14	1	5	0	0	0	2	0	0	0	0	0	0	149
14:45	1	109	17	0	6	0	0	0	0	0	0	0	0	0	0	133
15:00	0	114	19	1	5	0	0	0	0	0	0	0	0	0	0	139
Hour Total	1	442	69	2	21	0	0	0	2	0	0	0	0	0	0	537
15:15	0	105	21	0	1	0	0	1	0	0	0	0	0	0	0	128
15:30	0	93	21	0	3	0	0	0	0	0	0	0	0	0	0	117
15:45	0	104	19	1	3	0	0	0	0	0	0	0	0	0	0	127
16:00	0	135	15	0	1	0	0	0	0	1	0	0	0	0	0	152
Hour Total	0	437	76	1	8	0	0	1	0	1	0	0	0	0	0	524
16:15	1	99	15	1	0	1	0	0	0	0	0	0	0	0	0	117
16:30	0	128	20	0	4	0	0	2	0	0	0	0	0	0	0	154
16:45	0	140	21	0	2	0	0	0	0	0	0	0	0	0	0	163
17:00	2	135	24	0	1	0	0	0	0	0	0	0	0	0	0	162
Hour Total	3	502	80	1	7	1	0	2	0	0	0	0	0	0	0	596
17:15	2	158	27	2	1	0	0	0	0	0	0	0	0	0	0	190
17:30	1	183	22	0	1	0	0	0	0	0	0	0	0	0	0	207
17:45	0	166	18	0	1	0	0	0	0	0	0	0	0	0	0	185
18:00	0	134	20	0	1	0	0	0	0	0	0	0	0	0	0	155
Hour Total	3	641	87	2	4	0	0	0	0	0	0	0	0	0	0	737
18:15	2	97	17	0	1	0	0	0	0	0	0	0	0	0	0	117
18:30	2	123	13	0	1	0	0	0	0	0	0	0	0	0	0	139
18:45	1	83	10	0	0	0	0	0	0	0	0	0	0	0	0	94
19:00	0	87	14	0	1	0	0	0	0	0	0	0	0	0	0	102
Hour Total	5	390	54	0	3	0	0	0	0	0	0	0	0	0	0	452
19:15	1	86	7	0	1	0	0	0	0	0	0	0	0	0	0	95
19:30	0	91	5	0	0	0	0	0	0	0	0	0	0	0	0	96
19:45	0	79	5	0	0	0	0	0	0	0	0	0	0	0	0	84
20:00	0	76	12	0	1	0	0	0	0	0	0	0	0	0	0	89
Hour Total	1	332	29	0	2	0	0	0	0	0	0	0	0	0	0	364
20:15	0	73	4	0	0	0	0	0	0	0	0	0	0	0	0	77
20:30	1	65	12	0	0	0	0	0	0	0	0	0	0	0	0	78
20:45	0	69	4	0	0	0	0	0	0	0	0	0	0	0	0	73
21:00	0	70	7	0	0	0	0	0	0	0	0	0	0	0	0	77

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	1	277	27	0	0	0	0	0	0	0	0	0	0	0	0	305
21:15	0	57	5	0	0	0	0	0	0	0	0	0	0	0	0	62
21:30	0	49	6	0	1	0	0	0	0	0	0	0	0	0	0	56
21:45	0	52	3	0	1	0	0	0	0	0	0	0	0	0	0	56
22:00	0	37	4	0	0	0	0	0	0	0	0	0	0	0	0	41
Hour Total	0	195	18	0	2	0	0	0	0	0	0	0	0	0	0	215
22:15	0	42	2	0	0	0	0	0	0	0	0	0	0	0	0	44
22:30	0	27	2	0	0	0	0	0	0	0	0	0	0	0	0	29
22:45	1	27	1	0	0	0	0	0	0	0	0	0	0	0	0	29
23:00	0	17	6	0	0	0	0	0	0	0	0	0	0	0	0	23
Hour Total	1	113	11	0	0	0	0	0	0	0	0	0	0	0	0	125
23:15	0	21	2	0	0	0	0	0	0	0	0	0	0	0	0	23
23:30	0	13	3	0	0	0	0	0	0	0	0	0	0	0	0	16
23:45	0	13	3	0	0	0	0	0	0	0	0	0	0	0	0	16
24:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9
Hour Total	0	55	9	0	0	0	0	0	0	0	0	0	0	0	0	64
00:15	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
00:30	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
00:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
Hour Total	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	28
01:15	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
01:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:45	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
Hour Total	0	21	1	0	1	0	0	0	0	0	0	0	0	0	0	23
02:15	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	12
03:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30	0	11	1	0	0	0	0	1	0	0	0	0	0	0	0	13
05:45	0	12	1	0	0	0	0	0	0	0	0	0	0	0	0	13
06:00	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	21
Hour Total	0	45	3	0	0	0	0	1	0	0	0	0	0	0	0	49
06:15	0	10	3	0	0	0	0	0	0	0	0	0	0	0	0	13
06:30	0	16	2	2	3	1	0	1	0	0	0	0	0	0	0	25
06:45	1	34	2	0	3	0	0	0	0	0	0	0	0	0	0	40
07:00	1	44	8	0	6	0	0	0	0	0	0	0	0	0	0	59
Hour Total	2	104	15	2	12	1	0	1	0	0	0	0	0	0	0	137
07:15	0	43	10	1	1	0	0	0	0	0	0	0	0	0	0	55
07:30	1	61	13	0	3	0	0	0	0	0	0	0	0	0	0	78
07:45	0	75	13	1	6	0	0	0	0	0	0	0	0	0	0	95
08:00	0	78	16	0	3	0	0	0	0	0	0	0	0	0	0	97
Hour Total	1	257	52	2	13	0	0	0	0	0	0	0	0	0	0	325
08:15	0	63	21	0	7	0	0	0	0	0	0	0	0	0	0	91
08:30	0	65	20	0	5	0	0	0	0	0	0	0	0	0	0	90
08:45	0	76	18	0	2	0	0	0	0	0	0	0	0	0	0	96
09:00	0	67	18	2	3	0	0	0	0	0	0	0	0	0	0	90
Hour Total	0	271	77	2	17	0	0	0	0	0	0	0	0	0	0	367
09:15	0	68	19	1	4	0	1	0	0	0	0	0	0	0	0	93
09:30	0	72	16	0	5	0	0	1	0	0	0	0	0	0	0	94
09:45	0	61	24	0	1	1	0	0	0	0	0	0	0	0	0	87
10:00	0	47	23	0	1	0	0	0	0	0	0	0	0	0	0	71
Hour Total	0	248	82	1	11	1	1	1	0	0	0	0	0	0	0	345
10:15	0	58	16	0	0	0	1	0	0	0	0	0	0	0	0	75
10:30	0	65	17	1	3	0	0	0	0	0	0	0	0	0	0	86
10:45	0	58	13	0	1	0	0	0	0	0	0	0	0	0	0	72
11:00	0	46	9	0	2	0	0	0	0	0	0	0	0	0	0	57
Hour Total	0	227	55	1	6	0	1	0	0	0	0	0	0	0	0	290
11:15	0	56	15	1	2	0	0	0	0	0	0	0	0	0	0	74
11:30	1	73	21	0	0	0	0	0	0	0	0	0	0	0	0	95
11:45	1	59	17	0	0	0	0	0	0	0	0	0	0	0	0	77
12:00	0	78	17	0	2	1	1	0	0	0	0	0	0	0	0	99
Hour Total	2	266	70	1	4	1	1	0	0	0	0	0	0	0	0	345
DAY TOTAL	23	5477	962	15	128	6	3	9	2	2	0	0	0	0	0	6627
PERCENTS	0.4%	82.7%	14.6%	0.3%	1.9%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.5% Trucks & Buses 2.4%

AM Times	06:45	08:45	09:15	06:30	07:45	05:45	08:30	04:45								08:00
AM Peaks	3	283	82	3	21	1	1	1								374
PM Times	16:45	17:00	16:45	14:15	14:15	12:15		13:00	13:45	12:15						17:00
PM Peaks	5	642	94	2	21	1		3	2	1						744

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	1	79	14	0	2	1	0	0	0	0	0	0	0	0	0	97
12:30	0	71	20	0	3	0	1	0	0	0	0	0	0	0	0	95
12:45	0	55	20	0	1	0	0	0	0	0	0	0	0	0	0	76
13:00	0	76	20	0	2	1	0	0	0	0	0	0	0	0	0	99
Hour Total	1	281	74	0	8	2	1	0	0	0	0	0	0	0	0	367
13:15	2	64	19	0	1	1	1	0	0	0	0	0	0	0	0	88
13:30	1	65	12	0	2	0	0	1	0	0	0	0	0	0	0	81
13:45	0	69	17	0	2	0	0	0	0	0	0	0	0	0	0	88
14:00	0	77	20	0	3	0	1	0	0	0	0	0	0	0	0	101
Hour Total	3	275	68	0	8	1	2	1	0	0	0	0	0	0	0	358
14:15	0	86	11	0	3	0	0	0	0	0	0	0	0	0	0	100
14:30	0	96	22	0	7	1	0	0	0	0	0	0	0	0	0	126
14:45	0	89	17	0	5	0	0	0	0	0	0	0	0	0	0	111
15:00	0	113	19	1	3	0	1	1	0	0	0	0	0	0	0	138
Hour Total	0	384	69	1	18	1	1	1	0	0	0	0	0	0	0	475
15:15	0	107	19	0	1	0	0	0	0	0	0	0	0	0	0	127
15:30	0	112	15	0	5	0	0	0	0	0	0	0	0	0	0	132
15:45	0	109	10	1	1	0	0	1	0	0	0	0	0	0	0	122
16:00	1	109	13	0	5	0	0	0	0	0	0	0	0	0	0	128
Hour Total	1	437	57	1	12	0	0	1	0	0	0	0	0	0	0	509
16:15	1	137	24	0	0	0	0	0	0	0	0	0	0	0	0	162
16:30	3	132	21	1	6	0	0	0	0	0	0	0	0	0	0	163
16:45	1	150	17	0	2	0	1	0	0	0	0	0	0	0	0	171
17:00	0	140	22	1	0	1	0	0	0	0	0	0	0	0	0	164
Hour Total	5	559	84	2	8	1	1	0	0	0	0	0	0	0	0	660
17:15	1	151	29	1	3	0	0	1	0	0	0	0	0	0	0	186
17:30	2	179	24	0	1	0	0	0	0	0	0	0	0	0	0	206
17:45	0	185	15	1	1	0	1	0	0	0	0	0	0	0	0	203
18:00	3	123	19	0	0	0	0	0	0	0	0	0	0	0	0	145
Hour Total	6	638	87	2	5	0	1	1	0	0	0	0	0	0	0	740
18:15	0	126	26	0	1	0	0	0	0	0	0	0	0	0	0	153
18:30	0	119	23	0	1	0	0	0	0	0	0	0	0	0	0	143
18:45	0	128	12	0	0	0	0	0	0	0	0	0	0	0	0	140
19:00	0	107	25	0	0	0	0	0	0	0	0	0	0	0	0	132
Hour Total	0	480	86	0	2	0	0	0	0	0	0	0	0	0	0	568
19:15	0	97	15	0	1	0	0	0	0	0	0	0	0	0	0	113
19:30	0	96	8	0	1	0	0	0	0	0	0	0	0	0	0	105
19:45	1	81	11	0	0	0	0	0	0	0	0	0	0	0	0	93
20:00	0	86	5	0	0	0	0	0	0	0	0	0	0	0	0	91
Hour Total	1	360	39	0	2	0	0	0	0	0	0	0	0	0	0	402
20:15	3	85	8	0	0	0	0	0	0	0	0	0	0	0	0	96
20:30	0	62	2	0	1	0	0	0	0	0	0	0	0	0	0	65
20:45	0	67	16	0	0	0	0	0	0	0	0	0	0	0	0	83
21:00	1	69	8	0	0	0	0	0	0	0	0	0	0	0	0	78

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	4	283	34	0	1	0	0	0	0	0	0	0	0	0	0	322
21:15	0	62	8	0	0	0	0	0	0	0	0	0	0	0	0	70
21:30	0	60	3	0	0	0	0	0	0	0	0	0	0	0	0	63
21:45	0	59	3	0	0	0	0	0	0	0	0	0	0	0	0	62
22:00	0	34	3	0	0	0	0	0	0	0	0	0	0	0	0	37
Hour Total	0	215	17	0	0	0	0	0	0	0	0	0	0	0	0	232
22:15	2	47	6	0	0	0	0	0	0	0	0	0	0	0	0	55
22:30	0	26	3	0	1	0	0	0	0	0	0	0	0	0	0	30
22:45	0	20	4	0	0	0	0	0	0	0	0	0	0	0	0	24
23:00	0	29	2	0	1	0	0	0	0	0	0	0	0	0	0	32
Hour Total	2	122	15	0	2	0	0	0	0	0	0	0	0	0	0	141
23:15	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	18
23:30	0	18	2	0	0	0	0	0	0	0	0	0	0	0	0	20
23:45	1	21	1	0	0	0	0	0	0	0	0	0	0	0	0	23
24:00	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	16
Hour Total	1	70	6	0	0	0	0	0	0	0	0	0	0	0	0	77
00:15	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
00:30	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
00:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	23	2	0	0	0	0	0	0	0	0	0	0	0	0	25
01:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
02:15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
02:30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
02:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17
03:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	8

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
05:30	0	12	3	0	0	0	0	1	0	0	0	0	0	0	0	16
05:45	0	13	4	0	0	0	0	0	0	0	0	0	0	0	0	17
06:00	0	20	2	0	0	0	0	0	0	0	0	0	0	0	0	22
Hour Total	0	50	9	0	0	0	0	1	0	0	0	0	0	0	0	60
06:15	0	6	5	0	0	0	0	0	0	0	0	0	0	0	0	11
06:30	0	19	2	2	3	0	0	0	0	0	0	0	0	0	0	26
06:45	1	40	6	0	4	0	0	0	0	0	0	0	0	0	0	51
07:00	0	41	8	0	4	0	0	0	0	0	0	0	0	0	0	53
Hour Total	1	106	21	2	11	0	0	0	0	0	0	0	0	0	0	141
07:15	0	54	8	1	7	0	0	0	0	0	0	0	0	0	0	70
07:30	0	66	8	0	2	0	0	0	0	0	0	0	0	0	0	76
07:45	2	75	14	1	4	0	0	0	0	0	0	0	0	0	0	96
08:00	0	64	17	0	4	0	0	0	0	0	0	0	0	0	0	85
Hour Total	2	259	47	2	17	0	0	0	0	0	0	0	0	0	0	327
08:15	0	77	16	1	6	0	0	0	0	0	0	0	0	0	0	100
08:30	0	76	11	1	4	0	0	0	0	0	0	0	0	0	0	92
08:45	0	75	31	0	3	1	0	0	0	0	0	0	0	0	0	110
09:00	0	86	17	3	6	2	2	0	0	0	0	0	0	0	0	116
Hour Total	0	314	75	5	19	3	2	0	0	0	0	0	0	0	0	418
09:15	0	73	20	1	2	2	0	1	0	0	0	0	0	0	0	99
09:30	0	58	16	2	4	0	0	0	1	0	0	0	0	0	0	81
09:45	0	63	11	2	0	0	0	0	0	0	0	0	0	0	0	76
10:00	0	66	13	0	1	1	0	0	0	0	0	0	0	0	0	81
Hour Total	0	260	60	5	7	3	0	1	1	0	0	0	0	0	0	337
10:15	0	59	10	1	1	2	0	1	0	0	0	0	0	0	0	74
10:30	1	71	18	0	3	2	0	0	0	0	0	0	0	0	0	95
10:45	0	71	11	1	0	0	0	0	0	0	0	0	0	0	0	83
11:00	0	62	23	0	1	0	0	0	0	0	0	0	0	0	0	86
Hour Total	1	263	62	2	5	4	0	1	0	0	0	0	0	0	0	338
11:15	0	63	25	2	2	0	0	0	0	0	0	0	0	0	0	92
11:30	0	54	17	1	2	0	0	0	0	0	0	0	0	0	0	74
11:45	1	90	16	0	0	0	1	0	0	0	0	0	0	0	0	108
12:00	0	87	16	0	2	0	0	0	0	0	0	0	0	0	0	105
Hour Total	1	294	74	3	6	0	1	0	0	0	0	0	0	0	0	379
DAY TOTAL	29	5713	988	25	131	15	9	7	1	0	0	0	0	0	0	6918
PERCENTS	0.5%	82.6%	14.3%	0.4%	1.8%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.2% Trucks & Buses 2.7%

AM Times	07:00	08:15	08:45	09:00	08:15	08:30	08:15	04:45	08:45							08:15
AM Peaks	2	314	84	8	19	5	2	1	1							418
PM Times	16:00	17:00	16:45	16:30	14:00	12:15	12:30	15:00								17:00
PM Peaks	6	655	92	3	18	2	2	2								759

GRAND TOTAL	72	2899	393	13	8	1	0	0								
	16719	57	39	21	3	0	0	20225								
PERCENTS	0.4%	82.7%	14.4%	0.3%	2.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	0	1	29	47	11	0	1	0	0	89
12:30	0	0	0	0	0	0	9	33	40	10	3	0	0	0	95
12:45	0	0	0	0	0	0	2	28	50	25	0	0	0	0	105
13:00	0	0	0	0	0	4	6	19	40	16	1	0	1	0	87
Hour Total	0	0	0	0	0	4	18	109	177	62	4	1	1	0	376
13:15	0	0	0	0	0	1	2	30	43	14	3	1	0	0	94
13:30	0	0	0	0	0	0	5	26	61	17	3	0	0	0	112
13:45	0	0	0	0	0	0	4	27	39	17	4	0	0	0	91
14:00	0	0	0	0	0	0	8	32	40	17	1	1	0	0	99
Hour Total	0	0	0	0	0	1	19	115	183	65	11	2	0	0	396
14:15	0	0	0	0	8	8	13	34	24	6	3	0	0	0	96
14:30	0	0	0	0	10	36	33	22	14	4	0	0	0	0	119
14:45	0	0	0	0	14	13	30	34	38	5	1	0	0	0	135
15:00	0	0	0	0	0	1	11	28	66	20	2	0	0	0	128
Hour Total	0	0	0	0	32	58	87	118	142	35	6	0	0	0	478
15:15	0	0	0	0	0	0	16	49	59	24	2	0	0	0	150
15:30	0	0	0	0	0	1	13	48	47	15	0	0	0	0	124
15:45	0	0	0	0	0	0	12	41	61	22	2	0	0	0	138
16:00	0	0	0	0	0	0	7	44	60	23	3	0	0	0	137
Hour Total	0	0	0	0	0	1	48	182	227	84	7	0	0	0	549
16:15	0	0	0	0	0	0	3	32	72	35	1	1	0	0	144
16:30	0	0	0	0	0	0	0	44	77	26	1	0	0	0	148
16:45	0	0	0	0	0	0	6	63	76	26	4	0	0	1	176
17:00	0	0	0	0	0	0	5	39	78	35	3	0	0	0	160
Hour Total	0	0	0	0	0	0	14	178	303	122	9	1	0	1	628
17:15	0	0	0	0	0	0	16	90	86	19	2	0	0	0	213
17:30	0	0	0	0	3	6	22	83	85	20	0	0	0	0	219
17:45	0	0	0	0	0	0	7	99	73	23	5	0	0	0	207
18:00	0	0	0	0	0	0	4	27	77	33	5	0	0	0	146
Hour Total	0	0	0	0	3	6	49	299	321	95	12	0	0	0	785
18:15	0	0	0	0	0	0	8	45	58	33	3	0	0	0	147
18:30	0	0	0	0	0	2	5	40	57	20	5	0	0	0	129
18:45	0	0	0	0	0	0	10	28	61	24	2	0	0	0	125
19:00	0	0	0	0	0	0	4	30	56	22	3	0	0	0	115
Hour Total	0	0	0	0	0	2	27	143	232	99	13	0	0	0	516
19:15	0	0	0	0	0	1	20	36	43	12	2	0	0	0	114
19:30	0	0	0	0	0	0	4	34	36	15	1	0	0	0	90
19:45	0	0	0	0	0	0	3	21	39	13	1	0	0	0	77
20:00	0	0	0	0	0	0	2	17	30	12	3	0	0	0	64
Hour Total	0	0	0	0	0	1	29	108	148	52	7	0	0	0	345
20:15	0	0	0	0	0	0	6	31	26	11	1	0	0	0	75
20:30	0	0	0	0	0	0	2	15	38	10	2	0	0	0	67
20:45	0	0	0	0	0	0	1	23	33	9	1	0	0	0	67
21:00	0	0	0	0	0	0	2	19	25	11	1	0	0	0	58

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	0	11	88	122	41	5	0	0	0	267
21:15	0	0	0	0	0	0	4	23	31	13	1	0	0	0	72
21:30	0	0	0	0	0	2	3	20	27	4	2	0	0	0	58
21:45	0	0	0	0	0	0	1	25	30	5	0	0	0	0	61
22:00	0	0	0	0	0	0	3	16	16	6	1	0	0	0	42
Hour Total	0	0	0	0	0	2	11	84	104	28	4	0	0	0	233
22:15	0	0	0	0	0	1	2	11	20	8	1	0	1	0	44
22:30	0	0	0	0	0	0	0	3	7	15	0	0	0	0	25
22:45	0	0	0	0	0	0	1	5	17	9	0	0	0	0	32
23:00	0	0	0	0	0	0	0	3	11	6	2	0	0	0	22
Hour Total	0	0	0	0	0	1	3	22	55	38	3	0	1	0	123
23:15	0	0	0	0	0	0	0	2	10	4	2	0	0	0	18
23:30	0	0	0	0	0	0	0	5	9	2	0	0	0	0	16
23:45	0	0	0	0	0	0	0	7	10	4	1	0	0	0	22
24:00	0	0	0	0	0	0	1	0	4	3	0	0	0	0	8
Hour Total	0	0	0	0	0	0	1	14	33	13	3	0	0	0	64
00:15	0	0	0	0	0	0	1	2	4	5	0	0	0	0	12
00:30	0	0	0	0	0	0	0	4	5	2	1	0	0	0	12
00:45	0	0	0	0	0	0	1	1	2	1	0	0	0	0	5
01:00	0	0	0	0	0	0	0	1	3	1	0	0	0	0	5
Hour Total	0	0	0	0	0	0	2	8	14	9	1	0	0	0	34
01:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
01:30	0	0	0	0	0	0	0	1	3	1	0	0	0	0	5
01:45	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
02:00	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6
Hour Total	0	0	0	0	0	0	0	6	7	1	0	0	0	0	14
02:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:30	0	0	0	0	0	0	0	1	2	1	0	0	0	0	4
02:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	0	0	1	4	1	0	0	0	0	6
03:15	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
03:30	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
03:45	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4
04:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	2	5	3	0	0	0	0	10
04:15	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
04:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
04:45	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
05:00	0	0	0	0	0	0	0	1	1	3	0	0	0	0	5
Hour Total	0	0	0	0	0	1	0	4	1	4	1	0	0	0	11

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	4	2	2	0	0	0	0	8
05:30	0	0	0	0	0	0	1	2	1	4	1	0	0	0	9
05:45	0	0	0	0	0	0	0	2	4	4	1	0	0	0	11
06:00	0	0	0	0	0	0	0	5	14	7	1	0	0	0	27
Hour Total	0	0	0	0	0	0	1	13	21	17	3	0	0	0	55
06:15	0	0	0	0	0	1	0	0	4	3	0	0	0	0	8
06:30	0	0	0	0	0	0	2	8	9	3	3	0	0	0	25
06:45	0	0	0	0	0	2	1	12	13	7	0	0	0	0	35
07:00	0	0	0	0	0	1	8	20	15	6	0	0	0	0	50
Hour Total	0	0	0	0	0	4	11	40	41	19	3	0	0	0	118
07:15	0	0	0	0	4	11	23	25	9	1	0	0	0	0	73
07:30	0	0	0	0	6	21	23	14	6	1	1	0	0	0	72
07:45	0	0	0	0	0	0	4	25	50	15	0	0	0	0	94
08:00	0	0	0	0	0	0	3	34	57	13	2	1	0	0	110
Hour Total	0	0	0	0	10	32	53	98	122	30	3	1	0	0	349
08:15	0	0	0	0	0	0	5	29	41	9	2	0	0	0	86
08:30	0	0	0	0	0	0	9	32	50	14	1	0	0	0	106
08:45	0	0	0	0	0	0	3	41	50	15	1	0	0	0	110
09:00	0	0	0	0	0	0	4	40	56	21	0	0	0	0	121
Hour Total	0	0	0	0	0	0	21	142	197	59	4	0	0	0	423
09:15	0	0	0	0	0	0	4	27	47	10	0	0	0	0	88
09:30	0	0	0	0	0	0	4	14	38	14	1	0	0	0	71
09:45	0	0	0	0	0	2	3	21	22	11	3	0	0	0	62
10:00	0	0	0	0	0	0	2	19	28	11	4	0	0	0	64
Hour Total	0	0	0	0	0	2	13	81	135	46	8	0	0	0	285
10:15	0	0	0	0	0	0	2	16	23	14	3	0	0	0	58
10:30	0	0	0	0	0	0	1	22	33	10	3	1	0	0	70
10:45	0	0	0	0	0	0	5	22	32	13	1	0	0	0	73
11:00	0	0	0	0	0	0	6	30	30	9	2	1	0	0	78
Hour Total	0	0	0	0	0	0	14	90	118	46	9	2	0	0	279
11:15	0	0	0	0	0	3	2	15	33	15	3	1	0	0	72
11:30	0	0	0	0	0	0	0	18	53	21	1	0	0	0	93
11:45	0	0	0	0	0	0	1	18	43	21	2	0	0	0	85
12:00	0	0	0	0	0	0	1	18	44	19	4	0	0	0	86
Hour Total	0	0	0	0	0	3	4	69	173	76	10	1	0	0	336
DAY TOTAL	0	0	0	0	45	118	436	2014	2885	1045	126	8	2	1	6680
PERCENTS	0.0%	0.0%	0.0%	0.0%	0.7%	1.8%	6.6%	30.2%	43.2%	15.6%	1.8%	0.1%	0.0%	0.0%	100%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
41.0 mph

85th Percentile Speed
50.9 mph

Median Speed
46.3 mph

Average Speed
45.9 mph

10 MPH Pace Speed
40 mph to 50 mph
4899 vehicles in pace
Representing 73.3% of the total vehicles

Vehicles > 45 MPH
4067
60.9%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	1	3	18	53	21	1	0	0	1	98
12:30	0	0	0	0	0	0	7	40	44	21	0	1	0	0	113
12:45	0	0	0	0	0	0	3	16	37	18	1	0	0	0	75
13:00	0	0	0	0	0	0	4	26	55	19	1	0	0	0	105
Hour Total	0	0	0	0	0	1	17	100	189	79	3	1	0	1	391
13:15	0	0	0	0	0	0	8	24	34	23	0	0	0	0	89
13:30	0	0	0	0	0	0	8	23	42	24	2	0	0	0	99
13:45	0	0	0	0	0	0	0	16	54	27	3	0	0	0	100
14:00	0	0	0	0	0	0	5	22	41	21	4	0	0	0	93
Hour Total	0	0	0	0	0	0	21	85	171	95	9	0	0	0	381
14:15	0	0	0	0	5	13	19	40	30	8	1	0	0	0	116
14:30	0	0	0	3	19	46	29	26	19	7	0	0	0	0	149
14:45	0	0	0	0	1	15	37	34	34	11	0	1	0	0	133
15:00	0	0	0	0	1	2	9	42	59	23	3	0	0	0	139
Hour Total	0	0	0	3	26	76	94	142	142	49	4	1	0	0	537
15:15	0	0	0	0	0	0	6	39	61	19	3	0	0	0	128
15:30	0	0	0	0	0	0	3	26	66	20	2	0	0	0	117
15:45	0	0	0	0	0	0	2	30	64	28	3	0	0	0	127
16:00	0	0	0	0	0	0	6	49	61	33	2	1	0	0	152
Hour Total	0	0	0	0	0	0	17	144	252	100	10	1	0	0	524
16:15	0	0	0	0	0	0	2	37	57	20	1	0	0	0	117
16:30	0	0	0	0	0	0	7	67	63	13	2	1	0	1	154
16:45	0	0	0	0	0	0	7	58	70	25	3	0	0	0	163
17:00	0	0	0	0	0	0	19	45	69	24	5	0	0	0	162
Hour Total	0	0	0	0	0	0	35	207	259	82	11	1	0	1	596
17:15	0	0	0	0	0	2	6	58	97	27	0	0	0	0	190
17:30	0	0	0	0	0	0	16	48	111	32	0	0	0	0	207
17:45	0	0	0	0	0	0	11	56	75	35	6	2	0	0	185
18:00	0	0	0	0	0	0	0	45	77	29	4	0	0	0	155
Hour Total	0	0	0	0	0	2	33	207	360	123	10	2	0	0	737
18:15	1	0	0	0	0	3	7	24	55	23	3	0	0	1	117
18:30	0	0	0	0	0	0	2	40	65	30	2	0	0	0	139
18:45	0	0	0	0	0	0	4	24	42	19	5	0	0	0	94
19:00	0	0	0	0	0	0	13	34	34	17	3	0	0	1	102
Hour Total	1	0	0	0	0	3	26	122	196	89	13	0	0	2	452
19:15	0	0	0	0	0	0	6	37	40	11	1	0	0	0	95
19:30	0	0	0	0	0	1	6	21	44	22	2	0	0	0	96
19:45	0	0	0	0	0	0	4	26	34	18	2	0	0	0	84
20:00	0	0	0	0	0	0	1	33	44	11	0	0	0	0	89
Hour Total	0	0	0	0	0	1	17	117	162	62	5	0	0	0	364
20:15	0	0	0	0	0	1	7	21	38	10	0	0	0	0	77
20:30	1	0	0	0	0	0	4	31	28	12	2	0	0	0	78
20:45	0	0	0	0	0	0	7	30	24	10	1	0	1	0	73
21:00	0	0	0	0	0	0	4	31	26	14	2	0	0	0	77

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	1	0	0	0	0	1	22	113	116	46	5	0	1	0	305
21:15	0	0	0	0	0	0	1	11	37	12	1	0	0	0	62
21:30	0	0	0	0	0	0	4	18	23	10	0	0	0	1	56
21:45	0	0	0	0	0	0	5	23	17	7	4	0	0	0	56
22:00	0	0	0	0	0	0	0	3	25	12	1	0	0	0	41
Hour Total	0	0	0	0	0	0	10	55	102	41	6	0	0	1	215
22:15	0	0	0	0	0	0	2	11	23	6	1	0	1	0	44
22:30	0	0	0	0	0	0	3	8	10	8	0	0	0	0	29
22:45	0	0	0	0	0	0	2	8	10	8	0	1	0	0	29
23:00	0	0	0	0	0	0	4	4	10	4	1	0	0	0	23
Hour Total	0	0	0	0	0	0	11	31	53	26	2	1	1	0	125
23:15	0	0	0	0	0	0	3	5	8	7	0	0	0	0	23
23:30	0	0	0	0	0	0	0	4	6	6	0	0	0	0	16
23:45	0	0	0	0	0	2	1	2	6	4	1	0	0	0	16
24:00	0	0	0	0	0	0	0	2	6	1	0	0	0	0	9
Hour Total	0	0	0	0	0	2	4	13	26	18	1	0	0	0	64
00:15	0	0	0	0	0	0	0	3	3	4	0	0	0	0	10
00:30	0	0	0	0	0	0	0	1	4	3	0	0	0	0	8
00:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
01:00	0	0	0	0	0	0	0	2	5	1	0	0	0	0	8
Hour Total	0	0	0	0	0	0	0	7	12	9	0	0	0	0	28
01:15	0	0	0	0	0	0	1	2	2	2	0	0	0	0	7
01:30	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
01:45	0	0	0	0	0	0	0	2	2	1	1	0	0	0	6
02:00	0	0	0	0	0	0	0	1	6	0	0	0	0	0	7
Hour Total	0	0	0	0	0	0	1	7	11	3	1	0	0	0	23
02:15	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
02:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
02:45	0	0	0	0	0	0	0	1	1	2	0	0	0	0	4
03:00	0	0	0	0	0	0	0	0	1	3	0	0	0	0	4
Hour Total	0	0	0	0	0	0	0	1	3	8	0	0	0	0	12
03:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
03:30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
03:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hour Total	0	0	0	0	0	0	0	0	4	1	0	0	0	0	5
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
04:45	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3
05:00	0	0	0	0	0	0	1	0	2	1	1	0	0	0	5
Hour Total	0	0	0	0	0	0	1	0	5	3	1	0	0	0	10

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
05:30	0	0	0	0	0	0	1	0	5	5	2	0	0	0	13
05:45	0	0	0	0	0	0	0	6	3	4	0	0	0	0	13
06:00	0	0	0	0	0	0	0	6	7	8	0	0	0	0	21
Hour Total	0	0	0	0	0	0	1	13	16	17	2	0	0	0	49
06:15	0	0	0	0	0	0	0	3	3	5	2	0	0	0	13
06:30	0	0	0	0	1	0	1	11	6	6	0	0	0	0	25
06:45	0	0	0	0	0	0	1	19	11	6	3	0	0	0	40
07:00	0	0	0	0	0	6	17	16	10	10	0	0	0	0	59
Hour Total	0	0	0	0	1	6	19	49	30	27	5	0	0	0	137
07:15	0	0	0	0	2	15	16	12	7	3	0	0	0	0	55
07:30	0	0	0	0	9	17	21	19	8	2	1	0	1	0	78
07:45	0	0	0	0	0	0	5	27	49	13	1	0	0	0	95
08:00	0	0	0	0	0	0	3	22	48	20	4	0	0	0	97
Hour Total	0	0	0	0	11	32	45	80	112	38	6	0	1	0	325
08:15	0	0	0	0	0	0	2	33	39	16	1	0	0	0	91
08:30	0	0	0	0	0	2	3	25	38	21	1	0	0	0	90
08:45	0	0	0	0	0	0	5	34	32	20	4	1	0	0	96
09:00	0	0	0	0	0	0	3	26	42	18	1	0	0	0	90
Hour Total	0	0	0	0	0	2	13	118	151	75	7	1	0	0	367
09:15	0	0	0	0	0	0	3	39	38	12	1	0	0	0	93
09:30	0	0	0	0	0	0	5	30	37	21	1	0	0	0	94
09:45	0	0	0	0	0	0	6	39	31	9	2	0	0	0	87
10:00	0	0	0	0	0	0	3	18	32	12	6	0	0	0	71
Hour Total	0	0	0	0	0	0	17	126	138	54	10	0	0	0	345
10:15	0	0	0	0	0	0	8	21	28	16	2	0	0	0	75
10:30	0	0	0	0	0	0	2	30	35	19	0	0	0	0	86
10:45	0	0	0	0	0	0	1	23	34	13	1	0	0	0	72
11:00	0	0	0	0	0	0	4	8	20	20	4	1	0	0	57
Hour Total	0	0	0	0	0	0	15	82	117	68	7	1	0	0	290
11:15	0	0	0	0	0	0	0	18	34	21	1	0	0	0	74
11:30	0	0	0	0	0	0	0	36	36	21	1	1	0	0	95
11:45	0	0	0	0	0	0	1	25	34	15	2	0	0	0	77
12:00	0	0	0	0	0	0	1	36	40	19	3	0	0	0	99
Hour Total	0	0	0	0	0	0	2	115	144	76	7	1	0	0	345
DAY TOTAL	2	0	0	3	38	126	421	1934	2771	1189	125	10	3	5	6627
PERCENTS	0.1%	0.0%	0.0%	0.1%	0.6%	2.0%	6.4%	29.2%	41.8%	17.9%	1.8%	0.1%	0.0%	0.0%	100%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
41.1 mph

85th Percentile Speed
51.4 mph

Median Speed
46.4 mph

Average Speed
46.1 mph

10 MPH Pace Speed
40 mph to 50 mph
4705 vehicles in pace
Representing 70.9% of the total vehicles

Vehicles > 45 MPH
4103
61.9%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	0	4	28	48	14	3	0	0	0	97
12:30	0	0	0	0	0	0	6	36	38	14	1	0	0	0	95
12:45	0	0	0	0	0	0	2	17	37	19	1	0	0	0	76
13:00	0	0	0	0	0	2	4	26	50	16	1	0	0	0	99
Hour Total	0	0	0	0	0	2	16	107	173	63	6	0	0	0	367
13:15	0	0	0	0	0	0	2	19	44	21	2	0	0	0	88
13:30	0	0	0	0	0	0	1	23	37	14	6	0	0	0	81
13:45	0	0	0	0	0	0	4	27	44	11	2	0	0	0	88
14:00	0	0	0	0	0	0	3	28	45	22	2	1	0	0	101
Hour Total	0	0	0	0	0	0	10	97	170	68	12	1	0	0	358
14:15	0	0	0	0	6	4	16	40	24	9	1	0	0	0	100
14:30	0	0	0	2	11	35	31	36	9	2	0	0	0	0	126
14:45	0	0	0	0	4	21	18	37	22	7	2	0	0	0	111
15:00	0	0	0	0	0	0	6	39	76	17	0	0	0	0	138
Hour Total	0	0	0	2	21	60	71	152	131	35	3	0	0	0	475
15:15	0	0	0	0	0	0	2	68	42	12	2	1	0	0	127
15:30	0	0	0	0	0	0	9	47	56	19	1	0	0	0	132
15:45	0	0	0	0	0	0	5	26	64	25	1	1	0	0	122
16:00	0	0	0	0	1	0	5	42	50	24	5	1	0	0	128
Hour Total	0	0	0	0	1	0	21	183	212	80	9	3	0	0	509
16:15	0	0	0	0	0	0	6	58	69	24	5	0	0	0	162
16:30	0	0	0	0	0	1	6	49	80	23	3	0	0	1	163
16:45	0	0	0	0	0	0	2	49	86	30	3	1	0	0	171
17:00	0	0	0	0	0	0	4	53	78	27	2	0	0	0	164
Hour Total	0	0	0	0	0	1	18	209	313	104	13	1	0	1	660
17:15	0	0	0	0	0	0	3	41	103	36	3	0	0	0	186
17:30	0	0	0	0	0	0	10	59	91	38	8	0	0	0	206
17:45	0	0	0	0	0	0	0	44	119	37	3	0	0	0	203
18:00	0	0	0	0	0	2	4	34	74	30	1	0	0	0	145
Hour Total	0	0	0	0	0	2	17	178	387	141	15	0	0	0	740
18:15	0	0	0	0	0	0	3	36	68	45	1	0	0	0	153
18:30	0	0	0	0	0	0	6	50	63	23	1	0	0	0	143
18:45	0	0	0	0	0	0	17	63	42	17	1	0	0	0	140
19:00	0	0	0	0	0	3	2	40	65	20	2	0	0	0	132
Hour Total	0	0	0	0	0	3	28	189	238	105	5	0	0	0	568
19:15	0	0	0	0	0	0	2	30	63	15	3	0	0	0	113
19:30	0	0	0	0	0	1	1	33	59	10	1	0	0	0	105
19:45	0	0	0	0	0	0	4	29	39	19	2	0	0	0	93
20:00	0	0	0	0	0	1	4	34	40	11	0	1	0	0	91
Hour Total	0	0	0	0	0	2	11	126	201	55	6	1	0	0	402
20:15	0	0	0	0	0	0	8	36	30	20	2	0	0	0	96
20:30	0	0	0	0	0	1	6	18	30	9	1	0	0	0	65
20:45	0	0	0	0	0	0	6	19	44	11	3	0	0	0	83
21:00	0	0	0	0	0	0	9	28	28	11	1	1	0	0	78

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	1	29	101	132	51	7	1	0	0	322
21:15	0	0	0	0	0	0	7	29	21	13	0	0	0	0	70
21:30	0	0	0	0	0	0	4	23	27	9	0	0	0	0	63
21:45	0	0	0	0	0	0	4	16	29	12	1	0	0	0	62
22:00	0	0	0	0	0	0	0	16	14	6	0	0	1	0	37
Hour Total	0	0	0	0	0	0	15	84	91	40	1	0	1	0	232
22:15	0	0	0	0	0	0	3	16	28	7	1	0	0	0	55
22:30	0	0	0	0	0	0	0	8	11	11	0	0	0	0	30
22:45	0	0	0	0	0	0	1	4	10	8	0	1	0	0	24
23:00	0	0	0	0	0	0	1	5	18	7	1	0	0	0	32
Hour Total	0	0	0	0	0	0	5	33	67	33	2	1	0	0	141
23:15	0	0	0	0	0	0	0	1	13	4	0	0	0	0	18
23:30	0	0	0	0	0	0	0	2	12	5	1	0	0	0	20
23:45	0	0	0	0	0	0	0	3	9	11	0	0	0	0	23
24:00	0	0	0	0	0	0	0	2	9	3	2	0	0	0	16
Hour Total	0	0	0	0	0	0	0	8	43	23	3	0	0	0	77
00:15	0	0	0	0	0	0	0	0	2	2	1	0	0	0	5
00:30	0	0	0	0	0	0	0	0	5	4	0	0	0	0	9
00:45	0	0	0	0	0	0	0	2	3	0	0	0	0	0	5
01:00	0	0	0	0	0	0	1	1	2	2	0	0	0	0	6
Hour Total	0	0	0	0	0	0	1	3	12	8	1	0	0	0	25
01:15	0	0	0	0	0	0	0	0	2	1	1	0	0	0	4
01:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
01:45	0	0	0	0	0	0	0	0	3	2	0	0	0	0	5
02:00	0	0	0	0	0	0	1	1	3	0	0	0	0	0	5
Hour Total	0	0	0	0	0	0	1	2	8	3	1	0	0	0	15
02:15	0	0	0	0	0	0	0	1	2	1	1	0	0	0	5
02:30	0	0	0	0	0	0	0	1	2	2	0	0	0	0	5
02:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	2	2	1	1	0	0	0	0	6
Hour Total	0	0	0	0	0	0	2	5	5	4	1	0	0	0	17
03:15	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
04:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
04:30	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
04:45	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
05:00	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Hour Total	0	0	0	0	0	0	0	2	2	4	0	0	0	0	8

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	0	1	4	0	0	0	0	0	5
05:30	0	0	0	0	0	0	0	4	7	5	0	0	0	0	16
05:45	0	0	0	0	0	0	1	1	9	6	0	0	0	0	17
06:00	0	0	0	0	0	0	0	5	13	3	1	0	0	0	22
Hour Total	0	0	0	0	0	0	1	11	33	14	1	0	0	0	60
06:15	0	0	0	0	0	0	0	1	6	4	0	0	0	0	11
06:30	0	0	0	0	0	1	2	8	9	4	1	1	0	0	26
06:45	0	0	0	0	0	0	2	16	25	6	2	0	0	0	51
07:00	0	0	0	0	0	3	9	22	10	9	0	0	0	0	53
Hour Total	0	0	0	0	0	4	13	47	50	23	3	1	0	0	141
07:15	0	0	0	0	6	17	27	12	4	3	0	0	0	1	70
07:30	0	0	0	1	13	16	28	13	4	1	0	0	0	0	76
07:45	0	0	0	0	0	0	8	25	41	21	1	0	0	0	96
08:00	0	0	0	0	0	1	0	26	42	16	0	0	0	0	85
Hour Total	0	0	0	1	19	34	63	76	91	41	1	0	0	1	327
08:15	0	0	0	0	0	0	4	35	47	12	2	0	0	0	100
08:30	0	0	0	0	0	0	6	29	36	21	0	0	0	0	92
08:45	0	0	0	0	0	0	4	41	49	14	2	0	0	0	110
09:00	0	0	0	0	1	6	13	43	41	9	2	1	0	0	116
Hour Total	0	0	0	0	1	6	27	148	173	56	6	1	0	0	418
09:15	0	0	0	0	0	3	10	33	32	20	1	0	0	0	99
09:30	0	0	0	0	0	0	1	39	34	6	1	0	0	0	81
09:45	0	0	0	0	3	2	2	9	41	17	2	0	0	0	76
10:00	0	0	0	0	0	0	0	31	40	9	1	0	0	0	81
Hour Total	0	0	0	0	3	5	13	112	147	52	5	0	0	0	337
10:15	0	0	0	0	1	0	3	21	33	14	2	0	0	0	74
10:30	0	0	0	0	0	0	6	35	38	15	1	0	0	0	95
10:45	0	0	0	0	0	0	2	21	37	19	4	0	0	0	83
11:00	0	0	0	0	0	0	5	25	41	15	0	0	0	0	86
Hour Total	0	0	0	0	1	0	16	102	149	63	7	0	0	0	338
11:15	0	0	0	0	0	1	5	36	41	9	0	0	0	0	92
11:30	0	0	0	0	0	2	1	25	32	11	2	1	0	0	74
11:45	0	0	0	0	0	0	5	38	47	16	2	0	0	0	108
12:00	0	0	0	0	1	0	4	24	49	24	3	0	0	0	105
Hour Total	0	0	0	0	1	3	15	123	169	60	7	1	0	0	379
DAY TOTAL	0	0	0	3	47	123	393	2099	2997	1126	116	11	1	2	6918
PERCENTS	0.0%	0.0%	0.0%	0.1%	0.7%	1.8%	5.7%	30.4%	43.4%	16.2%	1.6%	0.1%	0.0%	0.0%	100%

Site Reference: Site B
Site ID: 000000009391
Location: Longhill, btw Warhill and Laffayette HS
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.31390 76.76720

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
GRAND TOTAL	2	0	130	1250	8653	367	6								
	0	6	367	6047	3360	29	8								20225
PERCENTS	0.1%	0.0%	0.0%	0.1%	0.7%	1.9%	6.2%	29.8%	42.7%	16.6%	1.8%	0.1%	0.0%	0.0%	100%

Statistical Information...

15th Percentile Speed
41.1 mph

85th Percentile Speed
51.0 mph

Median Speed
46.3 mph

Average Speed
46.0 mph

10 MPH Pace Speed
40 mph to 50 mph
5096 vehicles in pace
Representing 73.6% of the total vehicles

Vehicles > 45 MPH
4253
61.5%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	2	119	16	0	0	2	0	1	0	0	0	0	0	0	0	140
12:30	0	91	20	0	1	1	0	0	0	1	0	0	0	0	0	114
12:45	0	93	17	0	4	1	0	0	0	0	0	0	0	0	0	115
13:00	0	134	23	0	4	1	0	0	0	0	0	0	0	0	0	162
Hour Total	2	437	76	0	9	5	0	1	0	1	0	0	0	0	0	531
13:15	0	102	20	0	2	0	0	1	0	0	0	0	0	0	0	125
13:30	0	101	19	0	3	1	0	0	0	0	0	0	0	0	0	124
13:45	0	101	16	0	0	5	0	0	1	0	0	0	0	0	0	123
14:00	0	84	10	1	5	0	0	0	0	0	0	0	0	0	0	100
Hour Total	0	388	65	1	10	6	0	1	1	0	0	0	0	0	0	472
14:15	0	114	18	0	0	1	0	0	0	0	0	0	0	0	0	133
14:30	0	177	21	3	15	0	0	0	0	0	0	0	0	0	0	216
14:45	0	173	23	0	4	1	0	0	0	0	1	0	0	0	0	202
15:00	1	142	19	0	5	1	0	1	0	0	0	0	0	0	0	169
Hour Total	1	606	81	3	24	3	0	1	0	0	1	0	0	0	0	720
15:15	1	126	22	0	6	1	0	0	2	0	0	0	0	0	0	158
15:30	0	129	18	0	5	0	0	0	0	0	0	0	0	0	0	152
15:45	1	143	23	0	1	1	0	0	0	0	0	0	0	0	0	169
16:00	0	109	13	0	2	1	0	0	1	0	0	0	0	0	0	126
Hour Total	2	507	76	0	14	3	0	0	3	0	0	0	0	0	0	605
16:15	0	130	19	0	1	1	0	0	0	0	0	0	0	0	0	151
16:30	2	126	19	0	4	0	0	0	0	0	0	0	0	0	0	151
16:45	1	129	25	0	5	0	0	0	0	0	0	0	0	0	0	160
17:00	0	160	25	0	1	2	0	0	0	0	0	0	0	0	0	188
Hour Total	3	545	88	0	11	3	0	0	0	0	0	0	0	0	0	650
17:15	2	123	19	1	0	2	0	0	0	0	0	0	0	0	0	147
17:30	0	101	9	0	1	0	0	1	0	0	0	0	0	0	0	112
17:45	3	146	12	0	0	0	1	0	1	0	0	0	0	0	0	163
18:00	1	144	15	0	1	0	0	1	0	0	0	0	0	0	0	162
Hour Total	6	514	55	1	2	2	1	2	1	0	0	0	0	0	0	584
18:15	0	104	14	0	0	0	0	0	0	0	0	0	0	0	0	118
18:30	1	99	9	0	0	0	0	1	0	0	0	0	0	0	0	110
18:45	0	129	12	0	2	1	0	0	0	0	0	0	0	0	0	144
19:00	0	136	16	0	0	0	0	0	0	0	0	0	0	0	0	152
Hour Total	1	468	51	0	2	1	0	1	0	0	0	0	0	0	0	524
19:15	0	156	22	0	0	0	0	0	0	0	0	0	0	0	0	178
19:30	1	130	11	0	0	0	0	0	0	0	0	0	0	0	0	142
19:45	0	94	17	0	0	1	0	0	0	0	0	0	0	0	0	112
20:00	0	94	15	0	1	1	0	0	0	0	0	0	0	0	0	111
Hour Total	1	474	65	0	1	2	0	0	0	0	0	0	0	0	0	543
20:15	0	72	10	0	0	0	0	0	0	0	0	0	0	0	0	82
20:30	0	82	8	0	0	0	0	0	0	0	0	0	0	0	0	90
20:45	1	64	8	0	0	0	0	0	0	0	0	0	0	0	0	73
21:00	1	62	7	0	0	0	0	0	0	0	0	0	0	0	0	70

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	2	280	33	0	0	0	0	0	0	0	0	0	0	0	0	315
21:15	0	44	8	0	0	0	0	0	0	0	0	0	0	0	0	52
21:30	0	54	6	0	0	0	0	0	0	0	0	0	0	0	0	60
21:45	0	46	5	0	0	0	0	0	0	0	0	0	0	0	0	51
22:00	0	33	4	0	0	0	0	0	0	0	0	0	0	0	0	37
Hour Total	0	177	23	0	0	0	0	0	0	0	0	0	0	0	0	200
22:15	1	30	2	0	1	0	0	0	0	0	0	0	0	0	0	34
22:30	1	27	0	0	0	0	0	0	0	0	0	0	0	0	0	28
22:45	0	25	1	0	0	0	0	0	0	0	0	0	0	0	0	26
23:00	0	22	2	0	0	0	0	0	0	0	0	0	0	0	0	24
Hour Total	2	104	5	0	1	0	0	0	0	0	0	0	0	0	0	112
23:15	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	28
23:30	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	17
23:45	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
24:00	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Hour Total	0	66	4	0	0	0	0	0	0	0	0	0	0	0	0	70
00:15	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
00:30	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
00:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	23	1	0	0	0	0	0	0	0	0	0	0	0	0	24
01:15	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
01:30	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
01:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	21
02:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
03:15	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	8	5	0	0	0	0	0	0	0	0	0	0	0	0	13
04:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
04:30	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
04:45	1	15	2	0	0	0	0	0	0	0	0	0	0	0	0	18
05:00	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	12
Hour Total	1	32	8	0	0	0	0	0	0	0	0	0	0	0	0	41

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	18
05:30	0	18	5	0	0	0	0	0	0	0	0	0	0	0	0	23
05:45	0	41	8	0	0	0	0	0	0	0	0	0	0	0	0	49
06:00	0	52	4	0	1	1	0	0	0	0	0	0	0	0	0	58
Hour Total	0	128	18	0	1	1	0	0	0	0	0	0	0	0	0	148
06:15	0	32	6	0	2	1	0	0	0	0	0	0	0	0	0	41
06:30	0	57	12	1	0	1	0	0	0	0	0	0	0	0	0	71
06:45	1	68	15	0	0	0	0	0	0	0	0	0	0	0	0	84
07:00	2	104	15	2	5	6	0	0	0	0	0	0	0	0	0	134
Hour Total	3	261	48	3	7	8	0	0	0	0	0	0	0	0	0	330
07:15	1	132	13	0	9	1	0	0	0	0	0	0	0	0	0	156
07:30	1	118	19	0	4	0	0	0	0	0	0	0	0	0	0	142
07:45	1	135	17	0	4	1	0	0	0	0	0	0	0	0	0	158
08:00	1	153	18	0	4	0	0	0	0	0	0	0	0	0	0	176
Hour Total	4	538	67	0	21	2	0	0	0	0	0	0	0	0	0	632
08:15	0	118	17	0	0	1	0	0	1	0	0	0	0	0	0	137
08:30	0	117	23	1	5	1	1	0	0	0	0	0	0	0	0	148
08:45	2	160	23	0	5	0	0	0	0	0	0	0	0	0	0	190
09:00	1	140	16	1	6	0	0	0	0	0	0	0	0	0	0	164
Hour Total	3	535	79	2	16	2	1	0	1	0	0	0	0	0	0	639
09:15	1	126	12	0	3	0	0	0	0	0	0	0	0	0	0	142
09:30	0	128	14	0	1	1	0	0	0	0	0	0	0	0	0	144
09:45	1	110	16	0	2	0	0	0	0	0	0	0	0	0	0	129
10:00	0	111	16	0	2	1	0	0	1	0	0	0	0	0	0	131
Hour Total	2	475	58	0	8	2	0	0	1	0	0	0	0	0	0	546
10:15	0	91	18	0	2	0	0	0	0	0	0	0	0	0	0	111
10:30	0	102	21	0	2	1	0	0	0	0	0	0	0	0	0	126
10:45	0	97	17	0	1	0	0	0	1	0	0	0	0	0	0	116
11:00	0	92	19	0	2	2	0	1	1	0	0	0	0	0	0	117
Hour Total	0	382	75	0	7	3	0	1	2	0	0	0	0	0	0	470
11:15	2	101	17	0	1	0	0	0	0	0	0	0	0	0	0	121
11:30	1	101	19	1	3	0	0	0	0	0	0	0	0	0	0	125
11:45	0	79	10	0	6	0	1	0	0	0	0	0	0	0	0	96
12:00	0	103	17	0	0	2	0	0	0	0	0	0	0	0	0	122
Hour Total	3	384	63	1	10	2	1	0	0	0	0	0	0	0	0	464
DAY TOTAL	36	7362	1045	11	144	45	3	7	9	1	1	0	0	0	0	8664
PERCENTS	0.5%	85.0%	12.1%	0.2%	1.6%	0.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.4% Trucks & Buses 2.5%

AM Times	06:45	08:45	08:00	06:15	07:00	06:15	07:45	10:15	10:00							08:00
AM Peaks	5	554	81	3	22	8	1	1	2							651
PM Times	17:15	14:30	16:15	13:45	14:30	13:00	17:00	17:15	15:15	12:15	14:00					14:30
PM Peaks	6	618	88	4	30	7	1	2	3	1	1					745

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	1	94	8	0	5	1	0	0	0	1	0	0	0	0	0	110
12:30	0	115	10	0	2	1	0	0	0	0	0	0	0	0	0	128
12:45	0	96	22	0	4	0	0	0	1	0	0	0	0	0	0	123
13:00	2	123	10	0	2	1	0	0	0	0	0	0	0	0	0	138
Hour Total	3	428	50	0	13	3	0	0	1	1	0	0	0	0	0	499
13:15	2	98	20	0	1	0	0	0	0	0	0	0	0	0	0	121
13:30	1	96	13	0	2	0	0	0	1	0	0	0	0	0	0	113
13:45	0	114	17	0	3	1	0	2	0	0	0	0	0	0	0	137
14:00	1	106	16	0	2	3	0	0	0	0	0	0	0	0	0	128
Hour Total	4	414	66	0	8	4	0	2	1	0	0	0	0	0	0	499
14:15	0	98	19	0	1	1	1	0	0	1	0	0	0	0	0	121
14:30	1	178	25	3	12	2	0	0	0	0	0	0	1	0	0	222
14:45	0	140	21	0	2	1	0	0	0	0	0	0	0	0	0	164
15:00	0	136	17	0	3	1	0	0	0	0	0	0	0	0	0	157
Hour Total	1	552	82	3	18	5	1	0	0	1	0	0	1	0	0	664
15:15	0	140	25	0	5	0	0	1	0	0	0	0	0	0	0	171
15:30	0	121	19	0	2	0	0	0	1	0	0	0	0	0	0	143
15:45	1	127	27	0	3	1	0	0	0	0	0	0	0	0	0	159
16:00	1	127	15	0	1	1	0	0	0	0	0	0	0	0	0	145
Hour Total	2	515	86	0	11	2	0	1	1	0	0	0	0	0	0	618
16:15	1	139	15	0	6	1	0	0	1	0	0	0	0	0	0	163
16:30	1	155	10	0	3	0	0	0	1	0	0	0	0	0	0	170
16:45	2	141	23	2	4	0	0	0	1	0	0	0	0	0	0	173
17:00	1	174	30	1	1	0	0	0	0	0	0	0	0	0	0	207
Hour Total	5	609	78	3	14	1	0	0	3	0	0	0	0	0	0	713
17:15	1	125	15	0	2	1	0	0	1	0	0	0	0	0	0	145
17:30	1	132	17	0	0	0	0	1	0	0	0	0	0	0	0	151
17:45	3	152	12	0	0	1	0	0	0	0	0	0	0	0	0	168
18:00	0	142	18	0	2	1	0	0	0	0	0	0	0	0	0	163
Hour Total	5	551	62	0	4	3	0	1	1	0	0	0	0	0	0	627
18:15	1	124	14	0	0	2	0	0	0	0	0	0	1	0	0	142
18:30	2	111	17	0	0	0	0	0	0	0	0	0	0	0	0	130
18:45	0	112	12	0	1	0	0	0	0	0	0	0	0	0	0	125
19:00	0	113	14	0	0	1	0	0	0	0	0	0	0	0	0	128
Hour Total	3	460	57	0	1	3	0	0	0	0	0	0	1	0	0	525
19:15	0	130	20	0	1	0	0	0	0	0	0	0	0	0	0	151
19:30	0	155	15	0	0	0	0	0	0	0	0	0	0	0	0	170
19:45	1	125	15	0	1	0	0	1	0	0	0	0	0	0	0	143
20:00	2	97	6	0	0	0	0	0	0	0	0	0	0	0	0	105
Hour Total	3	507	56	0	2	0	0	1	0	0	0	0	0	0	0	569
20:15	1	99	9	0	1	0	0	0	0	0	0	0	1	0	0	111
20:30	1	99	8	0	1	0	0	0	0	0	0	0	0	0	0	109
20:45	1	62	4	0	0	1	0	1	0	0	0	0	1	0	0	70
21:00	0	75	11	0	0	0	0	0	0	0	0	0	0	0	0	86

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	3	335	32	0	2	1	0	1	0	0	0	0	2	0	0	376
21:15	0	62	5	0	0	0	0	0	0	0	0	0	0	0	0	67
21:30	0	38	8	0	1	1	0	0	0	0	0	0	0	0	0	48
21:45	1	48	10	0	0	0	0	0	0	0	0	0	0	0	0	59
22:00	0	24	3	0	0	0	0	0	0	0	0	0	0	0	0	27
Hour Total	1	172	26	0	1	1	0	0	0	0	0	0	0	0	0	201
22:15	0	25	5	0	0	0	0	0	0	0	0	0	0	0	0	30
22:30	1	19	1	0	0	0	0	0	0	0	0	0	0	0	0	21
22:45	0	25	4	0	0	0	0	0	0	0	0	0	0	0	0	29
23:00	0	29	2	0	0	0	0	0	0	0	0	0	0	0	0	31
Hour Total	1	98	12	0	0	0	0	0	0	0	0	0	0	0	0	111
23:15	0	23	2	0	0	0	0	0	0	0	0	0	0	0	0	25
23:30	0	19	2	0	0	0	0	0	0	0	0	0	0	0	0	21
23:45	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
24:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Hour Total	0	61	5	0	0	0	0	0	0	0	0	0	0	0	0	66
00:15	0	11	4	0	0	0	0	0	0	0	0	0	0	0	0	15
00:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
00:45	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
Hour Total	0	26	5	0	0	0	0	0	0	0	0	0	0	0	0	31
01:15	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
01:30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
01:45	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hour Total	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	22
02:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
02:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	17
03:15	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
03:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
03:45	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	3	1	0	1	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	14	4	0	1	0	0	0	0	0	0	0	0	0	0	19
04:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
04:45	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
05:00	1	13	6	0	0	0	0	0	0	0	0	0	0	0	0	20
Hour Total	1	32	10	0	0	0	0	0	0	0	0	0	0	0	0	43

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	17
05:30	0	29	4	0	0	0	0	0	0	0	0	0	0	0	0	33
05:45	1	34	3	0	0	0	0	0	0	0	0	0	0	0	0	38
06:00	0	43	6	0	1	1	0	0	1	0	0	0	0	0	0	52
Hour Total	1	121	15	0	1	1	0	0	1	0	0	0	0	0	0	140
06:15	0	38	10	0	1	1	0	0	0	0	0	0	0	0	0	50
06:30	2	61	9	1	1	0	0	0	0	0	0	0	0	0	0	74
06:45	0	71	18	0	1	0	0	0	0	0	0	0	0	0	0	90
07:00	2	96	17	1	9	0	1	0	0	0	0	0	0	0	0	126
Hour Total	4	266	54	2	12	1	1	0	0	0	0	0	0	0	0	340
07:15	3	125	15	2	6	0	0	0	0	0	0	0	0	0	0	151
07:30	1	124	17	0	4	0	1	0	0	0	0	0	0	0	0	147
07:45	2	153	8	0	4	1	0	0	0	0	0	0	0	0	0	168
08:00	1	178	22	0	3	1	0	0	0	0	0	0	0	0	0	205
Hour Total	7	580	62	2	17	2	1	0	0	0	0	0	0	0	0	671
08:15	0	141	16	0	0	0	0	0	0	0	0	0	0	0	0	157
08:30	0	122	11	0	0	1	0	0	0	0	0	0	0	0	0	134
08:45	0	155	15	0	9	0	0	0	0	0	0	0	0	0	0	179
09:00	0	152	17	0	3	0	0	0	0	0	0	0	0	0	0	172
Hour Total	0	570	59	0	12	1	0	0	0	0	0	0	0	0	0	642
09:15	1	109	14	0	0	1	0	0	0	0	0	0	0	0	0	125
09:30	0	106	13	0	3	0	0	0	0	0	0	0	0	0	0	122
09:45	2	131	18	0	0	1	0	0	0	0	0	0	0	0	0	152
10:00	1	135	15	0	5	0	0	0	0	0	0	0	0	0	0	156
Hour Total	4	481	60	0	8	2	0	0	0	0	0	0	0	0	0	555
10:15	0	131	17	0	1	0	0	0	0	0	0	0	0	0	0	149
10:30	2	107	13	0	4	0	0	1	0	0	0	0	0	0	0	127
10:45	2	94	13	0	1	0	1	0	0	0	0	0	0	0	0	111
11:00	0	111	23	0	3	0	0	2	1	0	0	0	0	0	0	140
Hour Total	4	443	66	0	9	0	1	3	1	0	0	0	0	0	0	527
11:15	0	94	10	0	3	0	0	0	0	0	0	0	0	0	0	107
11:30	1	107	13	1	4	0	0	0	0	0	0	0	0	0	0	126
11:45	1	97	20	0	1	1	0	0	0	0	0	0	0	0	0	120
12:00	0	89	18	0	1	0	0	0	0	0	0	0	0	0	0	108
Hour Total	2	387	61	1	9	1	0	0	0	0	0	0	0	0	0	461
DAY TOTAL	54	7659	1010	11	143	31	4	9	9	2	0	0	4	0	0	8936
PERCENTS	0.7%	85.8%	11.3%	0.1%	1.6%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.6% Trucks & Buses 2.3%

AM Times	07:00	07:30	06:45	06:30	07:00	07:45	06:45	10:15	05:15							07:30
AM Peaks	8	596	67	4	23	3	2	3	1							677
PM Times	17:00	16:15	14:30	13:45	14:30	13:45	13:30	13:00	16:00	12:15			20:00			14:30
PM Peaks	6	609	88	3	22	7	1	2	3	1			2			714

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	1	89	19	0	0	1	1	0	1	0	0	0	0	0	0	112
12:30	3	94	15	0	4	0	0	0	0	0	0	0	0	0	0	116
12:45	2	123	21	0	8	0	0	1	0	0	0	0	0	0	0	155
13:00	0	109	14	0	4	0	0	0	0	0	0	0	0	0	0	127
Hour Total	6	415	69	0	16	1	1	1	1	0	0	0	0	0	0	510
13:15	1	74	10	0	2	0	0	1	0	0	0	0	0	0	0	88
13:30	1	101	17	0	3	0	0	0	0	0	0	0	0	0	0	122
13:45	0	106	16	0	7	0	0	0	0	0	0	0	0	0	0	129
14:00	0	125	14	1	2	3	1	0	1	0	0	0	0	0	0	147
Hour Total	2	406	57	1	14	3	1	1	1	0	0	0	0	0	0	486
14:15	0	113	16	0	3	1	1	0	0	0	0	0	0	0	0	134
14:30	1	163	26	3	9	0	0	0	0	0	0	0	0	0	0	202
14:45	0	186	27	1	1	0	0	0	0	0	0	0	0	0	0	215
15:00	0	126	16	0	3	0	0	0	1	0	0	0	0	0	0	146
Hour Total	1	588	85	4	16	1	1	0	1	0	0	0	0	0	0	697
15:15	0	130	15	0	5	1	1	0	0	0	0	0	0	0	0	152
15:30	1	153	18	0	3	1	0	0	2	0	0	0	0	0	0	178
15:45	3	129	12	0	4	0	2	0	1	0	0	0	0	0	0	151
16:00	1	119	21	0	2	0	0	0	0	0	0	0	0	0	0	143
Hour Total	5	531	66	0	14	2	3	0	3	0	0	0	0	0	0	624
16:15	0	135	14	0	4	0	0	0	0	0	0	0	0	0	0	153
16:30	2	122	17	0	3	0	0	1	0	0	0	1	0	0	0	146
16:45	1	125	13	1	2	0	0	0	0	0	0	0	0	0	0	142
17:00	0	135	18	0	5	0	0	0	0	0	1	0	0	0	0	159
Hour Total	3	517	62	1	14	0	0	1	0	0	1	1	0	0	0	600
17:15	1	112	17	0	3	0	0	0	0	0	0	0	0	0	0	133
17:30	1	145	22	0	1	0	0	0	0	0	0	0	0	0	0	169
17:45	0	129	14	0	0	0	0	0	1	0	0	0	0	0	0	144
18:00	1	165	18	0	3	1	0	0	0	0	0	0	0	0	0	188
Hour Total	3	551	71	0	7	1	0	0	1	0	0	0	0	0	0	634
18:15	1	118	11	0	0	1	0	0	0	0	0	0	0	0	0	131
18:30	2	116	17	0	1	0	0	0	0	0	0	0	0	0	0	136
18:45	3	127	16	0	1	1	0	0	0	0	0	0	0	0	0	148
19:00	0	108	16	0	1	0	0	0	1	0	0	0	0	0	0	126
Hour Total	6	469	60	0	3	2	0	0	1	0	0	0	0	0	0	541
19:15	2	148	19	0	2	0	0	0	0	0	0	0	0	0	0	171
19:30	1	133	16	0	2	0	0	0	0	0	0	0	0	0	0	152
19:45	0	146	24	0	0	0	0	0	0	0	0	0	0	0	0	170
20:00	1	86	8	0	1	0	0	0	0	0	0	0	0	0	0	96
Hour Total	4	513	67	0	5	0	0	0	0	0	0	0	0	0	0	589
20:15	0	88	8	0	0	1	0	0	0	0	0	0	0	0	0	97
20:30	0	79	11	0	0	0	0	0	0	0	0	0	0	0	0	90
20:45	0	82	6	0	1	0	0	1	0	0	0	0	0	0	0	90
21:00	0	59	12	0	0	0	0	0	0	0	0	0	0	0	0	71

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	0	308	37	0	1	1	0	1	0	0	0	0	0	0	0	348
21:15	0	54	5	0	0	0	0	0	1	0	0	0	0	0	0	60
21:30	0	65	13	0	0	0	0	0	0	0	0	0	0	0	0	78
21:45	0	68	8	0	0	0	0	0	0	0	0	0	0	0	0	76
22:00	0	52	4	0	0	0	0	0	0	0	0	0	0	0	0	56
Hour Total	0	239	30	0	0	0	0	0	1	0	0	0	0	0	0	270
22:15	1	34	3	0	0	1	0	0	0	0	0	0	0	0	0	39
22:30	0	27	3	0	0	0	0	0	0	0	0	0	0	0	0	30
22:45	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	21
23:00	0	29	2	0	0	0	0	0	0	0	0	0	0	0	0	31
Hour Total	1	110	9	0	0	1	0	0	0	0	0	0	0	0	0	121
23:15	1	27	6	0	0	0	0	0	0	0	0	0	0	0	0	34
23:30	1	25	2	0	0	0	0	0	0	0	0	0	0	0	0	28
23:45	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	14
24:00	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Hour Total	2	79	8	0	0	0	0	0	0	0	0	0	0	0	0	89
00:15	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
00:30	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
00:45	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	28
01:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
01:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Hour Total	0	17	1	0	0	0	0	0	0	0	0	0	0	0	0	18
02:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
03:15	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
03:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
03:45	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Hour Total	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	17
04:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:30	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0	15
04:45	0	9	5	0	0	0	0	0	0	0	0	0	0	0	0	14
05:00	1	8	4	0	0	0	0	0	0	0	0	0	0	0	0	13
Hour Total	1	33	11	0	0	0	0	0	0	0	0	0	0	0	0	45

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	13	3	0	0	0	0	0	0	0	0	0	0	0	0	16
05:30	0	26	3	0	0	0	0	0	0	0	0	0	0	0	0	29
05:45	0	39	6	0	0	0	0	0	0	0	0	0	0	0	0	45
06:00	0	37	2	0	0	2	0	0	0	0	0	0	0	0	0	41
Hour Total	0	115	14	0	0	2	0	0	0	0	0	0	0	0	0	131
06:15	1	35	10	1	1	0	0	0	0	0	0	0	0	0	0	48
06:30	1	54	11	0	1	1	0	0	0	0	0	0	0	0	0	68
06:45	2	66	14	0	3	0	0	0	0	0	0	0	0	0	0	85
07:00	3	106	20	1	7	0	0	0	0	0	0	0	0	0	0	137
Hour Total	7	261	55	2	12	1	0	0	0	0	0	0	0	0	0	338
07:15	2	106	11	3	6	0	0	0	0	0	0	0	0	0	0	128
07:30	0	106	26	0	2	0	1	0	0	0	0	0	0	0	0	135
07:45	1	157	10	0	7	0	3	0	0	0	0	0	0	0	0	178
08:00	0	142	22	0	2	1	0	0	0	0	0	0	0	0	0	167
Hour Total	3	511	69	3	17	1	4	0	0	0	0	0	0	0	0	608
08:15	0	140	10	0	0	0	0	0	0	0	0	0	0	0	0	150
08:30	0	124	10	0	2	0	0	0	0	0	0	0	0	0	0	136
08:45	2	172	19	0	6	0	0	0	0	0	0	0	0	0	0	199
09:00	0	170	17	0	3	3	0	0	0	0	0	0	0	0	0	193
Hour Total	2	606	56	0	11	3	0	0	0	0	0	0	0	0	0	678
09:15	0	123	10	0	0	2	0	0	0	0	0	0	0	0	0	135
09:30	1	128	12	1	4	2	2	0	0	0	0	0	0	0	0	150
09:45	1	106	18	0	3	0	1	1	0	0	0	0	0	0	0	130
10:00	1	124	6	0	4	0	0	0	0	0	0	0	0	0	0	135
Hour Total	3	481	46	1	11	4	3	1	0	0	0	0	0	0	0	550
10:15	0	134	15	2	0	0	1	0	0	1	0	0	0	0	0	153
10:30	1	118	10	0	3	1	0	0	0	0	0	0	0	0	0	133
10:45	0	107	17	0	2	0	2	0	1	0	0	0	0	0	0	129
11:00	0	118	14	0	0	0	1	0	0	0	0	0	0	0	0	133
Hour Total	1	477	56	2	5	1	4	0	1	1	0	0	0	0	0	548
11:15	1	101	26	1	2	1	1	0	0	0	1	0	0	0	0	134
11:30	0	109	21	0	1	0	0	0	0	0	0	0	0	0	0	131
11:45	0	135	17	0	0	1	0	1	0	0	0	0	0	0	0	154
12:00	1	117	17	4	4	1	3	0	0	0	0	0	0	0	0	147
Hour Total	2	462	81	5	7	3	4	1	0	0	1	0	0	0	0	566
DAY TOTAL	52	7741	1014	19	153	27	21	6	10	1	2	1	0	0	0	9047
PERCENTS	0.6%	85.6%	11.3%	0.3%	1.7%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.3% Trucks & Buses 2.6%

AM Times	06:30	08:15	11:15	11:15	07:00	08:45	07:00	09:00	10:00	09:30	10:30					08:15
AM Peaks	8	606	81	5	22	7	4	1	1	1	1					678
PM Times	18:00	14:30	14:15	14:00	13:45	13:30	15:00	12:30	15:00		16:15	15:45				14:30
PM Peaks	7	605	85	5	21	4	3	2	4		1	1				715

GRAND TOTAL	142	3069	440	28	28	3	4	0								
	22762	41	103	22	4	1	0	26647								
PERCENTS	0.6%	85.5%	11.6%	0.2%	1.6%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	9	26	76	27	2	0	0	0	0	140
12:30	0	0	0	0	0	5	19	65	22	3	0	0	0	0	114
12:45	0	0	0	1	1	2	25	56	25	5	0	0	0	0	115
13:00	0	0	0	0	2	5	36	80	31	8	0	0	0	0	162
Hour Total	0	0	0	1	3	21	106	277	105	18	0	0	0	0	531
13:15	0	0	0	0	2	5	18	60	37	3	0	0	0	0	125
13:30	0	0	0	0	1	1	18	53	47	4	0	0	0	0	124
13:45	0	0	0	0	2	6	26	59	26	4	0	0	0	0	123
14:00	0	0	0	0	1	2	27	44	20	5	1	0	0	0	100
Hour Total	0	0	0	0	6	14	89	216	130	16	1	0	0	0	472
14:15	0	0	0	0	1	5	38	49	34	6	0	0	0	0	133
14:30	0	0	0	0	0	16	71	83	39	7	0	0	0	0	216
14:45	0	0	2	4	8	3	52	88	38	7	0	0	0	0	202
15:00	0	0	0	0	1	11	38	72	42	5	0	0	0	0	169
Hour Total	0	0	2	4	10	35	199	292	153	25	0	0	0	0	720
15:15	0	0	0	0	5	10	47	67	25	3	1	0	0	0	158
15:30	0	0	0	0	0	4	49	79	17	3	0	0	0	0	152
15:45	0	0	0	1	1	2	43	87	35	0	0	0	0	0	169
16:00	0	0	0	0	0	6	32	59	27	2	0	0	0	0	126
Hour Total	0	0	0	1	6	22	171	292	104	8	1	0	0	0	605
16:15	0	0	0	0	0	9	41	74	24	3	0	0	0	0	151
16:30	0	0	0	0	0	3	27	82	37	2	0	0	0	0	151
16:45	0	0	0	0	1	7	33	84	29	6	0	0	0	0	160
17:00	0	0	0	0	1	6	41	89	47	4	0	0	0	0	188
Hour Total	0	0	0	0	2	25	142	329	137	15	0	0	0	0	650
17:15	0	0	0	0	2	11	35	76	18	5	0	0	0	0	147
17:30	0	0	0	0	0	3	18	49	40	2	0	0	0	0	112
17:45	0	0	0	0	0	4	36	67	50	5	1	0	0	0	163
18:00	0	0	0	0	1	7	46	74	32	2	0	0	0	0	162
Hour Total	0	0	0	0	3	25	135	266	140	14	1	0	0	0	584
18:15	0	0	0	0	2	4	22	62	27	1	0	0	0	0	118
18:30	0	0	0	3	3	5	19	35	39	6	0	0	0	0	110
18:45	0	0	0	0	1	6	31	66	38	2	0	0	0	0	144
19:00	0	0	0	0	0	6	45	63	35	3	0	0	0	0	152
Hour Total	0	0	0	3	6	21	117	226	139	12	0	0	0	0	524
19:15	0	0	0	0	0	4	37	108	27	1	1	0	0	0	178
19:30	0	0	0	0	0	2	18	81	37	4	0	0	0	0	142
19:45	0	0	0	0	0	5	24	47	35	1	0	0	0	0	112
20:00	0	0	0	0	2	4	18	63	21	3	0	0	0	0	111
Hour Total	0	0	0	0	2	15	97	299	120	9	1	0	0	0	543
20:15	0	0	0	0	0	4	20	45	9	4	0	0	0	0	82
20:30	0	0	0	0	0	10	30	35	15	0	0	0	0	0	90
20:45	0	0	0	0	0	7	18	24	20	3	1	0	0	0	73
21:00	0	0	0	0	0	6	15	29	16	4	0	0	0	0	70

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	27	83	133	60	11	1	0	0	0	315
21:15	0	0	0	0	1	1	15	24	10	0	1	0	0	0	52
21:30	0	0	0	0	2	2	18	27	11	0	0	0	0	0	60
21:45	0	0	0	0	0	5	13	22	8	2	1	0	0	0	51
22:00	0	0	0	0	0	3	8	14	11	1	0	0	0	0	37
Hour Total	0	0	0	0	3	11	54	87	40	3	2	0	0	0	200
22:15	0	0	0	0	3	3	3	15	9	1	0	0	0	0	34
22:30	0	0	0	0	1	0	4	7	12	4	0	0	0	0	28
22:45	0	0	0	0	0	1	5	12	8	0	0	0	0	0	26
23:00	0	0	0	0	2	1	4	13	4	0	0	0	0	0	24
Hour Total	0	0	0	0	6	5	16	47	33	5	0	0	0	0	112
23:15	0	0	0	0	0	0	7	10	9	2	0	0	0	0	28
23:30	0	0	0	0	0	0	5	5	5	2	0	0	0	0	17
23:45	0	0	0	0	0	0	4	5	1	1	0	0	0	0	11
24:00	0	0	0	0	0	0	7	4	3	0	0	0	0	0	14
Hour Total	0	0	0	0	0	0	23	24	18	5	0	0	0	0	70
00:15	0	0	0	0	0	0	2	3	3	0	0	0	0	0	8
00:30	0	0	0	0	0	1	1	3	3	0	0	0	0	0	8
00:45	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
01:00	0	0	0	0	0	0	3	1	1	0	0	0	0	0	5
Hour Total	0	0	0	0	0	1	7	9	7	0	0	0	0	0	24
01:15	0	0	0	0	0	0	2	3	2	1	0	0	0	0	8
01:30	0	0	0	0	0	0	1	1	4	0	0	0	0	0	6
01:45	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3
02:00	0	0	0	0	0	0	2	1	1	0	0	0	0	0	4
Hour Total	0	0	0	0	0	0	7	5	8	1	0	0	0	0	21
02:15	0	0	0	0	1	0	1	2	0	0	0	0	0	0	4
02:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
02:45	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
03:00	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3
Hour Total	0	0	0	0	1	1	1	5	2	0	0	0	0	0	10
03:15	0	0	1	0	0	0	0	0	1	1	0	0	0	0	3
03:30	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:00	0	0	0	0	0	1	1	1	2	1	0	0	0	0	6
Hour Total	0	0	1	0	0	1	1	4	4	2	0	0	0	0	13
04:15	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
04:30	0	0	0	0	0	0	2	2	3	0	0	0	0	0	7
04:45	0	0	0	0	0	0	3	9	5	1	0	0	0	0	18
05:00	0	0	0	0	0	1	2	6	1	2	0	0	0	0	12
Hour Total	0	0	0	0	0	1	7	19	11	3	0	0	0	0	41

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	7	3	7	1	0	0	0	0	18
05:30	0	0	0	0	0	0	1	11	8	2	1	0	0	0	23
05:45	0	0	0	0	0	3	10	16	18	2	0	0	0	0	49
06:00	0	0	0	1	3	4	6	23	18	3	0	0	0	0	58
Hour Total	0	0	0	1	3	7	24	53	51	8	1	0	0	0	148
06:15	0	0	0	0	2	3	2	15	16	3	0	0	0	0	41
06:30	0	0	0	0	0	1	8	33	24	5	0	0	0	0	71
06:45	0	0	0	0	1	1	9	40	26	6	1	0	0	0	84
07:00	0	0	0	0	2	9	20	53	39	11	0	0	0	0	134
Hour Total	0	0	0	0	5	14	39	141	105	25	1	0	0	0	330
07:15	0	0	0	0	1	6	48	74	25	2	0	0	0	0	156
07:30	0	0	0	0	1	2	24	75	37	3	0	0	0	0	142
07:45	0	0	0	0	0	12	14	76	41	15	0	0	0	0	158
08:00	0	0	0	0	4	6	23	93	40	10	0	0	0	0	176
Hour Total	0	0	0	0	6	26	109	318	143	30	0	0	0	0	632
08:15	0	0	0	0	0	4	10	63	52	8	0	0	0	0	137
08:30	0	0	0	1	0	2	18	80	41	6	0	0	0	0	148
08:45	0	0	0	0	1	7	61	77	37	7	0	0	0	0	190
09:00	0	0	0	0	1	6	57	64	30	5	1	0	0	0	164
Hour Total	0	0	0	1	2	19	146	284	160	26	1	0	0	0	639
09:15	0	0	0	0	2	7	29	69	31	4	0	0	0	0	142
09:30	0	0	0	0	2	4	33	65	35	5	0	0	0	0	144
09:45	0	0	0	0	1	5	12	52	49	9	0	1	0	0	129
10:00	0	0	0	0	1	7	26	60	30	6	1	0	0	0	131
Hour Total	0	0	0	0	6	23	100	246	145	24	1	1	0	0	546
10:15	0	0	0	0	0	3	24	49	31	4	0	0	0	0	111
10:30	0	0	0	0	0	5	26	62	27	6	0	0	0	0	126
10:45	0	0	0	0	0	2	21	48	40	5	0	0	0	0	116
11:00	0	0	0	0	1	2	30	58	23	3	0	0	0	0	117
Hour Total	0	0	0	0	1	12	101	217	121	18	0	0	0	0	470
11:15	0	0	0	0	1	1	26	62	28	3	0	0	0	0	121
11:30	0	0	0	0	0	3	27	60	29	6	0	0	0	0	125
11:45	0	0	0	0	0	7	21	40	24	4	0	0	0	0	96
12:00	0	0	0	0	0	6	44	55	17	0	0	0	0	0	122
Hour Total	0	0	0	0	1	17	118	217	98	13	0	0	0	0	464
DAY TOTAL	0	0	3	11	72	343	1892	4006	2034	291	11	1	0	0	8664
PERCENTS	0.0%	0.0%	0.1%	0.2%	0.9%	4.0%	21.8%	46.2%	23.4%	3.3%	0.1%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
37.3 mph

85th Percentile Speed
47.6 mph

Median Speed
42.5 mph

Average Speed
42.4 mph

10 MPH Pace Speed
40 mph to 50 mph
6040 vehicles in pace
Representing 69.7% of the total vehicles

Vehicles > 45 MPH
2337
27.0%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	1	16	23	46	23	1	0	0	0	0	110
12:30	0	0	0	0	5	7	28	59	29	0	0	0	0	0	128
12:45	0	0	0	0	1	10	23	67	22	0	0	0	0	0	123
13:00	0	0	0	0	0	8	21	61	35	13	0	0	0	0	138
Hour Total	0	0	0	0	7	41	95	233	109	14	0	0	0	0	499
13:15	0	0	0	0	1	6	8	64	38	4	0	0	0	0	121
13:30	0	0	0	1	1	3	18	51	35	4	0	0	0	0	113
13:45	0	0	0	0	0	3	29	63	30	11	1	0	0	0	137
14:00	0	0	0	0	0	10	27	57	27	7	0	0	0	0	128
Hour Total	0	0	0	1	2	22	82	235	130	26	1	0	0	0	499
14:15	0	0	0	0	0	9	29	52	29	2	0	0	0	0	121
14:30	0	0	0	1	2	17	85	94	19	4	0	0	0	0	222
14:45	0	0	0	0	4	9	40	63	37	10	1	0	0	0	164
15:00	0	0	0	0	0	7	42	72	30	6	0	0	0	0	157
Hour Total	0	0	0	1	6	42	196	281	115	22	1	0	0	0	664
15:15	0	0	0	0	0	10	51	79	30	1	0	0	0	0	171
15:30	0	0	0	0	2	6	45	51	35	4	0	0	0	0	143
15:45	0	0	0	0	1	9	24	84	33	6	2	0	0	0	159
16:00	0	0	0	0	1	5	40	56	33	10	0	0	0	0	145
Hour Total	0	0	0	0	4	30	160	270	131	21	2	0	0	0	618
16:15	0	0	0	0	12	10	34	69	35	3	0	0	0	0	163
16:30	0	0	0	0	1	6	43	75	37	8	0	0	0	0	170
16:45	0	0	0	0	8	13	54	66	29	3	0	0	0	0	173
17:00	0	0	0	0	2	7	43	103	47	5	0	0	0	0	207
Hour Total	0	0	0	0	23	36	174	313	148	19	0	0	0	0	713
17:15	0	0	0	0	4	1	19	68	49	4	0	0	0	0	145
17:30	0	0	0	0	0	1	45	57	42	6	0	0	0	0	151
17:45	0	0	0	0	0	4	41	91	25	7	0	0	0	0	168
18:00	0	0	0	0	1	6	39	75	39	3	0	0	0	0	163
Hour Total	0	0	0	0	5	12	144	291	155	20	0	0	0	0	627
18:15	0	0	0	2	2	14	28	69	22	5	0	0	0	0	142
18:30	0	0	0	0	5	9	35	58	22	1	0	0	0	0	130
18:45	0	0	0	0	1	10	29	54	28	3	0	0	0	0	125
19:00	0	0	0	0	0	5	24	63	32	4	0	0	0	0	128
Hour Total	0	0	0	2	8	38	116	244	104	13	0	0	0	0	525
19:15	0	0	0	0	1	14	25	83	25	2	1	0	0	0	151
19:30	0	0	0	0	0	7	41	81	37	4	0	0	0	0	170
19:45	0	0	0	0	1	2	34	71	29	6	0	0	0	0	143
20:00	0	0	0	0	2	12	13	42	33	3	0	0	0	0	105
Hour Total	0	0	0	0	4	35	113	277	124	15	1	0	0	0	569
20:15	0	0	0	0	0	9	33	54	13	2	0	0	0	0	111
20:30	0	0	0	0	1	1	29	58	19	1	0	0	0	0	109
20:45	0	0	0	0	1	2	19	28	15	5	0	0	0	0	70
21:00	0	0	0	0	0	9	23	42	12	0	0	0	0	0	86

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	2	21	104	182	59	8	0	0	0	0	376
21:15	0	0	0	0	1	7	19	23	14	3	0	0	0	0	67
21:30	0	0	0	0	0	2	10	23	11	1	1	0	0	0	48
21:45	0	0	0	0	0	3	12	27	12	5	0	0	0	0	59
22:00	0	0	0	0	2	2	3	10	9	1	0	0	0	0	27
Hour Total	0	0	0	0	3	14	44	83	46	10	1	0	0	0	201
22:15	0	0	0	0	2	1	4	15	6	2	0	0	0	0	30
22:30	0	0	0	0	0	0	3	9	8	1	0	0	0	0	21
22:45	0	0	0	0	1	2	3	15	8	0	0	0	0	0	29
23:00	0	0	0	0	1	0	3	13	13	1	0	0	0	0	31
Hour Total	0	0	0	0	4	3	13	52	35	4	0	0	0	0	111
23:15	0	0	0	0	0	1	6	12	5	1	0	0	0	0	25
23:30	0	0	0	0	0	3	4	9	5	0	0	0	0	0	21
23:45	0	0	0	0	0	0	3	7	2	0	0	0	0	0	12
24:00	0	0	0	0	0	1	1	3	3	0	0	0	0	0	8
Hour Total	0	0	0	0	0	5	14	31	15	1	0	0	0	0	66
00:15	0	0	0	0	1	0	7	3	4	0	0	0	0	0	15
00:30	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
00:45	0	0	0	0	0	2	2	0	2	0	0	0	0	0	6
01:00	0	0	0	0	1	0	1	3	2	0	0	0	0	0	7
Hour Total	0	0	0	0	2	2	11	8	8	0	0	0	0	0	31
01:15	0	0	0	0	0	1	2	0	3	0	0	0	0	0	6
01:30	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
01:45	0	0	0	0	0	0	0	6	2	0	0	0	0	0	8
02:00	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3
Hour Total	0	0	0	0	0	2	2	12	6	0	0	0	0	0	22
02:15	0	0	0	0	0	0	3	4	1	0	0	0	0	0	8
02:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
02:45	0	0	1	0	0	0	0	1	1	0	0	0	0	0	3
03:00	0	0	0	0	0	0	2	0	3	0	0	0	0	0	5
Hour Total	0	0	1	0	0	0	5	5	6	0	0	0	0	0	17
03:15	0	0	0	0	0	1	0	2	0	1	0	0	0	0	4
03:30	0	0	0	0	2	0	0	2	1	1	0	0	0	0	6
03:45	0	0	0	0	0	1	0	2	1	0	0	0	0	0	4
04:00	0	0	0	0	0	0	3	0	0	2	0	0	0	0	5
Hour Total	0	0	0	0	2	2	3	6	2	4	0	0	0	0	19
04:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
04:30	0	0	0	0	0	0	3	6	2	0	0	0	0	0	11
04:45	0	0	0	0	0	1	2	4	3	1	0	0	0	0	11
05:00	0	0	0	0	1	3	4	5	6	1	0	0	0	0	20
Hour Total	0	0	0	0	1	4	10	15	11	2	0	0	0	0	43

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	1	1	4	6	5	0	0	0	0	17
05:30	0	0	0	0	3	1	4	7	10	8	0	0	0	0	33
05:45	0	0	0	0	0	0	4	19	12	3	0	0	0	0	38
06:00	0	0	0	0	1	2	9	18	20	1	1	0	0	0	52
Hour Total	0	0	0	0	4	4	18	48	48	17	1	0	0	0	140
06:15	0	0	0	0	1	3	6	19	17	4	0	0	0	0	50
06:30	0	0	0	0	0	1	6	33	29	4	1	0	0	0	74
06:45	0	0	1	0	3	1	14	34	29	7	1	0	0	0	90
07:00	0	0	0	0	2	4	23	48	40	8	1	0	0	0	126
Hour Total	0	0	1	0	6	9	49	134	115	23	3	0	0	0	340
07:15	0	0	0	2	3	0	36	76	33	1	0	0	0	0	151
07:30	0	0	0	3	4	9	39	67	21	4	0	0	0	0	147
07:45	0	0	0	0	1	6	19	81	50	10	1	0	0	0	168
08:00	0	0	0	0	0	4	32	105	54	10	0	0	0	0	205
Hour Total	0	0	0	5	8	19	126	329	158	25	1	0	0	0	671
08:15	0	0	0	0	4	3	27	78	37	8	0	0	0	0	157
08:30	0	0	0	0	1	2	16	63	42	10	0	0	0	0	134
08:45	0	0	0	0	1	3	64	73	30	8	0	0	0	0	179
09:00	0	0	0	0	2	8	28	96	30	8	0	0	0	0	172
Hour Total	0	0	0	0	8	16	135	310	139	34	0	0	0	0	642
09:15	0	0	0	0	1	7	14	73	28	2	0	0	0	0	125
09:30	0	0	0	0	1	2	11	64	35	9	0	0	0	0	122
09:45	0	0	0	0	0	5	32	70	40	5	0	0	0	0	152
10:00	0	0	0	0	0	4	41	68	41	2	0	0	0	0	156
Hour Total	0	0	0	0	2	18	98	275	144	18	0	0	0	0	555
10:15	0	0	2	0	0	4	37	69	30	7	0	0	0	0	149
10:30	0	0	0	0	1	2	21	58	35	10	0	0	0	0	127
10:45	0	0	0	1	2	3	14	47	33	9	2	0	0	0	111
11:00	0	0	0	0	0	1	31	75	28	4	1	0	0	0	140
Hour Total	0	0	2	1	3	10	103	249	126	30	3	0	0	0	527
11:15	0	0	0	0	1	2	18	61	24	1	0	0	0	0	107
11:30	0	0	0	0	1	3	19	72	27	4	0	0	0	0	126
11:45	0	0	0	0	1	1	31	62	21	4	0	0	0	0	120
12:00	0	0	0	0	1	7	23	49	25	3	0	0	0	0	108
Hour Total	0	0	0	0	4	13	91	244	97	12	0	0	0	0	461
DAY TOTAL	0	0	4	10	108	398	1906	4127	2031	338	14	0	0	0	8936
PERCENTS	0.0%	0.0%	0.1%	0.2%	1.3%	4.5%	21.3%	46.1%	22.7%	3.7%	0.1%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
37.2 mph

85th Percentile Speed
47.6 mph

Median Speed
42.5 mph

Average Speed
42.3 mph

10 MPH Pace Speed
40 mph to 50 mph
6158 vehicles in pace
Representing 68.9% of the total vehicles

Vehicles > 45 MPH
2383
26.7%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	2	3	19	52	32	4	0	0	0	0	112
12:30	0	0	0	0	1	10	25	51	23	6	0	0	0	0	116
12:45	0	0	0	0	0	9	52	70	24	0	0	0	0	0	155
13:00	0	0	0	0	0	3	16	66	36	6	0	0	0	0	127
Hour Total	0	0	0	0	3	25	112	239	115	16	0	0	0	0	510
13:15	0	0	0	0	1	3	13	45	21	5	0	0	0	0	88
13:30	0	0	0	0	3	7	35	42	29	5	1	0	0	0	122
13:45	0	0	0	0	0	5	19	66	37	2	0	0	0	0	129
14:00	0	0	0	0	0	4	40	70	29	3	1	0	0	0	147
Hour Total	0	0	0	0	4	19	107	223	116	15	2	0	0	0	486
14:15	0	0	0	3	2	7	25	58	33	6	0	0	0	0	134
14:30	0	0	0	0	3	20	72	77	26	4	0	0	0	0	202
14:45	0	0	2	2	23	41	78	57	11	1	0	0	0	0	215
15:00	0	0	0	1	0	5	42	65	28	5	0	0	0	0	146
Hour Total	0	0	2	6	28	73	217	257	98	16	0	0	0	0	697
15:15	0	0	1	1	1	3	39	85	20	2	0	0	0	0	152
15:30	0	0	0	0	0	12	64	95	7	0	0	0	0	0	178
15:45	0	0	0	0	2	9	35	63	40	2	0	0	0	0	151
16:00	0	1	1	1	1	10	27	70	28	4	0	0	0	0	143
Hour Total	0	1	2	2	4	34	165	313	95	8	0	0	0	0	624
16:15	0	0	0	0	1	4	26	81	35	5	1	0	0	0	153
16:30	0	0	0	0	5	7	33	70	28	3	0	0	0	0	146
16:45	0	0	0	0	0	1	26	66	44	5	0	0	0	0	142
17:00	0	0	0	0	0	9	31	80	33	6	0	0	0	0	159
Hour Total	0	0	0	0	6	21	116	297	140	19	1	0	0	0	600
17:15	0	0	0	0	2	7	16	63	38	7	0	0	0	0	133
17:30	0	0	0	0	5	12	50	70	30	2	0	0	0	0	169
17:45	0	0	0	0	1	7	31	71	30	4	0	0	0	0	144
18:00	0	0	0	0	2	11	23	103	41	7	1	0	0	0	188
Hour Total	0	0	0	0	10	37	120	307	139	20	1	0	0	0	634
18:15	0	0	0	0	0	4	30	68	24	5	0	0	0	0	131
18:30	0	0	0	0	4	9	27	76	18	1	1	0	0	0	136
18:45	0	0	0	0	1	8	27	81	29	2	0	0	0	0	148
19:00	0	0	0	0	1	6	23	70	22	4	0	0	0	0	126
Hour Total	0	0	0	0	6	27	107	295	93	12	1	0	0	0	541
19:15	0	0	0	0	1	11	36	98	23	2	0	0	0	0	171
19:30	0	0	0	0	2	10	53	57	27	3	0	0	0	0	152
19:45	0	0	0	0	0	9	42	74	42	3	0	0	0	0	170
20:00	0	0	0	0	0	3	34	41	17	1	0	0	0	0	96
Hour Total	0	0	0	0	3	33	165	270	109	9	0	0	0	0	589
20:15	0	0	0	0	0	4	12	60	20	1	0	0	0	0	97
20:30	0	0	0	0	0	0	17	52	18	3	0	0	0	0	90
20:45	0	0	0	0	0	7	33	40	10	0	0	0	0	0	90
21:00	0	0	0	0	0	2	17	42	9	1	0	0	0	0	71

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	0	13	79	194	57	5	0	0	0	0	348
21:15	0	0	0	0	4	2	16	27	11	0	0	0	0	0	60
21:30	0	0	0	0	0	2	25	38	11	2	0	0	0	0	78
21:45	0	0	0	0	0	0	17	29	28	2	0	0	0	0	76
22:00	0	0	0	0	0	3	13	24	15	1	0	0	0	0	56
Hour Total	0	0	0	0	4	7	71	118	65	5	0	0	0	0	270
22:15	0	0	0	0	1	4	7	18	9	0	0	0	0	0	39
22:30	0	0	0	0	0	1	8	13	6	2	0	0	0	0	30
22:45	0	0	0	0	0	1	5	12	3	0	0	0	0	0	21
23:00	0	0	0	0	0	0	4	17	8	2	0	0	0	0	31
Hour Total	0	0	0	0	1	6	24	60	26	4	0	0	0	0	121
23:15	0	0	0	0	0	2	6	17	5	4	0	0	0	0	34
23:30	0	0	0	0	1	2	2	15	7	1	0	0	0	0	28
23:45	0	0	0	0	0	1	2	7	3	1	0	0	0	0	14
24:00	0	0	0	0	0	1	2	6	4	0	0	0	0	0	13
Hour Total	0	0	0	0	1	6	12	45	19	6	0	0	0	0	89
00:15	0	0	0	0	0	0	1	4	1	0	0	0	0	0	6
00:30	0	0	0	0	0	1	0	2	5	1	0	0	0	0	9
00:45	0	0	0	0	0	1	1	1	4	0	0	0	0	0	7
01:00	0	0	0	0	1	0	1	4	0	0	0	0	0	0	6
Hour Total	0	0	0	0	1	2	3	11	10	1	0	0	0	0	28
01:15	0	0	0	0	0	0	1	1	2	0	0	0	0	0	4
01:30	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
01:45	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
02:00	0	0	0	0	0	1	2	3	2	0	0	0	0	0	8
Hour Total	0	0	0	0	0	1	6	6	5	0	0	0	0	0	18
02:15	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
02:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
02:45	0	0	0	1	0	0	2	2	0	0	0	0	0	0	5
03:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Hour Total	0	0	0	1	0	0	3	5	2	0	0	0	0	0	11
03:15	0	0	0	0	0	0	2	1	1	0	0	0	0	0	4
03:30	0	0	0	0	0	1	1	3	1	0	0	0	0	0	6
03:45	0	0	0	0	0	0	1	0	2	0	0	0	0	0	3
04:00	0	0	0	0	0	0	1	1	0	2	0	0	0	0	4
Hour Total	0	0	0	0	0	1	5	5	4	2	0	0	0	0	17
04:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
04:30	0	0	0	0	0	0	3	7	5	0	0	0	0	0	15
04:45	0	0	0	0	1	0	3	5	4	1	0	0	0	0	14
05:00	0	0	0	0	0	3	3	2	4	0	1	0	0	0	13
Hour Total	0	0	0	0	1	3	9	14	16	1	1	0	0	0	45

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	5	4	5	2	0	0	0	0	16
05:30	0	0	0	0	0	2	6	8	11	2	0	0	0	0	29
05:45	0	0	0	0	0	1	5	13	21	5	0	0	0	0	45
06:00	0	0	0	1	2	2	8	13	14	1	0	0	0	0	41
Hour Total	0	0	0	1	2	5	24	38	51	10	0	0	0	0	131
06:15	0	0	0	0	0	2	9	12	19	6	0	0	0	0	48
06:30	0	0	0	0	0	4	4	36	19	5	0	0	0	0	68
06:45	0	0	0	1	2	4	10	34	28	5	1	0	0	0	85
07:00	0	0	0	0	1	11	26	55	34	9	1	0	0	0	137
Hour Total	0	0	0	1	3	21	49	137	100	25	2	0	0	0	338
07:15	0	0	0	0	0	1	37	62	24	4	0	0	0	0	128
07:30	0	0	0	0	0	9	31	64	28	3	0	0	0	0	135
07:45	0	0	0	0	1	14	36	70	54	2	1	0	0	0	178
08:00	0	0	0	0	1	5	27	78	45	10	1	0	0	0	167
Hour Total	0	0	0	0	2	29	131	274	151	19	2	0	0	0	608
08:15	0	0	0	0	3	5	18	69	52	2	1	0	0	0	150
08:30	0	0	0	0	1	1	21	69	39	5	0	0	0	0	136
08:45	0	0	0	0	1	11	47	92	41	7	0	0	0	0	199
09:00	0	0	0	0	0	7	51	90	43	2	0	0	0	0	193
Hour Total	0	0	0	0	5	24	137	320	175	16	1	0	0	0	678
09:15	0	0	0	0	1	5	37	60	24	7	1	0	0	0	135
09:30	0	0	0	0	0	4	36	64	43	2	1	0	0	0	150
09:45	0	0	0	0	0	4	31	61	29	5	0	0	0	0	130
10:00	0	0	0	0	1	1	30	68	31	4	0	0	0	0	135
Hour Total	0	0	0	0	2	14	134	253	127	18	2	0	0	0	550
10:15	0	0	0	0	1	2	51	80	17	2	0	0	0	0	153
10:30	0	0	0	0	0	9	40	61	21	2	0	0	0	0	133
10:45	0	0	0	0	4	0	23	67	30	5	0	0	0	0	129
11:00	0	0	0	0	1	7	45	58	19	3	0	0	0	0	133
Hour Total	0	0	0	0	6	18	159	266	87	12	0	0	0	0	548
11:15	0	0	0	2	0	6	24	81	19	2	0	0	0	0	134
11:30	0	0	0	0	0	2	27	71	29	2	0	0	0	0	131
11:45	0	0	0	1	1	8	47	74	21	2	0	0	0	0	154
12:00	0	0	0	0	4	19	38	54	28	4	0	0	0	0	147
Hour Total	0	0	0	3	5	35	136	280	97	10	0	0	0	0	566
DAY TOTAL	0	1	4	14	97	454	2091	4227	1897	249	13	0	0	0	9047
PERCENTS	0.0%	0.1%	0.1%	0.2%	1.1%	5.0%	23.1%	46.7%	20.9%	2.7%	0.1%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000003607
Location: Longhill, btw Buford & Glenburnie
Direction: EAST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
GRAND TOTAL	0	11	277	5889	5962	38	0								
	1	35	1195	12360	878	1	0								26647
PERCENTS	0.0%	0.1%	0.1%	0.2%	1.1%	4.5%	22.1%	46.3%	22.3%	3.2%	0.1%	0.0%	0.0%	0.0%	100%

Statistical Information...

15th Percentile Speed
36.9 mph

85th Percentile Speed
47.1 mph

Median Speed
42.2 mph

Average Speed
42.0 mph

10 MPH Pace Speed
35 mph to 45 mph
6318 vehicles in pace
Representing 69.8% of the total vehicles

Vehicles > 45 MPH
2159
23.9%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	104	19	1	2	0	0	0	0	0	0	0	0	0	0	126
12:30	1	111	18	0	1	1	0	0	1	0	0	0	0	0	0	133
12:45	0	108	20	0	4	1	0	0	1	1	0	0	0	0	0	135
13:00	1	96	14	0	2	1	0	0	0	0	0	0	0	0	0	114
Hour Total	2	419	71	1	9	3	0	0	2	1	0	0	0	0	0	508
13:15	0	102	19	0	2	2	0	0	0	0	0	0	0	0	0	125
13:30	0	120	22	0	0	1	0	0	0	0	0	0	0	0	0	143
13:45	0	107	17	0	2	0	0	0	0	0	0	0	0	0	0	126
14:00	0	114	20	0	5	1	0	1	0	0	0	0	0	0	0	141
Hour Total	0	443	78	0	9	4	0	1	0	0	0	0	0	0	0	535
14:15	0	118	24	2	7	1	0	0	0	0	0	0	0	0	0	152
14:30	0	111	22	0	2	0	0	0	0	0	0	0	0	0	0	135
14:45	0	125	23	0	2	1	0	1	0	0	0	0	0	0	0	152
15:00	1	140	22	0	6	0	0	0	0	0	0	0	0	0	0	169
Hour Total	1	494	91	2	17	2	0	1	0	0	0	0	0	0	0	608
15:15	1	150	24	0	2	0	1	0	0	0	0	0	0	0	0	178
15:30	1	132	23	1	4	0	0	0	0	0	0	0	0	0	0	161
15:45	1	150	21	0	2	1	0	0	0	0	0	0	0	0	0	175
16:00	2	164	20	1	1	0	0	0	0	0	0	0	0	0	0	188
Hour Total	5	596	88	2	9	1	1	0	0	0	0	0	0	0	0	702
16:15	0	164	21	0	2	0	0	0	0	0	0	0	0	0	0	187
16:30	0	181	31	1	5	0	0	0	0	0	0	0	0	0	0	218
16:45	1	192	26	0	4	1	0	0	0	0	0	0	0	0	0	224
17:00	1	189	39	0	0	0	0	0	0	0	0	0	0	0	0	229
Hour Total	2	726	117	1	11	1	0	0	0	0	0	0	0	0	0	858
17:15	1	234	35	1	4	1	0	0	0	0	0	0	0	0	0	276
17:30	1	277	30	0	2	1	0	0	0	0	0	0	0	0	0	311
17:45	1	250	23	0	0	0	0	0	0	0	0	0	0	0	0	274
18:00	2	192	21	0	0	0	0	0	0	0	0	1	0	0	0	216
Hour Total	5	953	109	1	6	2	0	0	0	0	0	1	0	0	0	1077
18:15	0	183	20	0	1	0	0	0	0	0	0	0	0	0	0	204
18:30	1	185	18	0	0	0	0	0	0	0	0	0	0	0	0	204
18:45	0	128	20	0	0	0	0	0	0	0	1	0	0	0	0	149
19:00	1	154	17	0	0	0	0	0	0	0	0	0	0	0	0	172
Hour Total	2	650	75	0	1	0	0	0	0	0	1	0	0	0	0	729
19:15	3	126	13	0	1	0	0	0	0	0	0	0	0	0	0	143
19:30	0	130	9	0	0	0	0	0	0	0	0	0	0	0	0	139
19:45	2	90	11	0	0	0	0	1	0	0	1	0	0	0	0	105
20:00	1	101	4	0	1	0	0	0	0	0	0	0	0	0	0	107
Hour Total	6	447	37	0	2	0	0	1	0	0	1	0	0	0	0	494
20:15	0	97	10	0	0	0	0	0	0	0	0	0	0	0	0	107
20:30	0	107	9	0	0	0	0	0	0	0	0	0	0	0	0	116
20:45	1	106	4	0	0	0	0	0	0	0	0	0	0	0	0	111
21:00	0	83	6	0	0	1	0	0	0	0	0	0	0	0	0	90

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	1	393	29	0	0	1	0	0	0	0	0	0	0	0	0	424
21:15	0	89	7	0	0	0	0	0	0	0	0	0	0	0	0	96
21:30	1	83	6	0	0	0	0	0	0	0	0	0	0	0	0	90
21:45	0	74	3	0	1	0	0	0	0	0	0	0	0	0	0	78
22:00	0	59	4	0	0	0	0	0	0	0	0	0	0	0	0	63
Hour Total	1	305	20	0	1	0	0	0	0	0	0	0	0	0	0	327
22:15	1	66	4	0	0	0	0	0	0	0	0	0	0	0	0	71
22:30	1	45	3	0	0	0	0	0	0	0	0	0	0	0	0	49
22:45	0	38	5	0	0	0	0	0	0	0	0	0	0	0	0	43
23:00	0	34	4	0	0	0	0	0	0	0	0	0	0	0	0	38
Hour Total	2	183	16	0	0	0	0	0	0	0	0	0	0	0	0	201
23:15	1	32	2	0	0	0	0	0	0	0	0	0	0	0	0	35
23:30	0	23	4	0	0	0	0	0	0	0	0	0	0	0	0	27
23:45	0	29	1	0	0	0	0	0	0	0	0	0	0	0	0	30
24:00	0	19	3	0	0	0	0	0	0	0	0	0	0	0	0	22
Hour Total	1	103	10	0	0	0	0	0	0	0	0	0	0	0	0	114
00:15	1	16	1	0	0	0	0	0	0	0	0	0	0	0	0	18
00:30	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	19
00:45	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	13	2	0	0	0	0	0	0	0	0	0	0	0	0	15
Hour Total	1	56	5	0	0	0	0	0	0	0	0	0	0	0	0	62
01:15	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
01:30	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
01:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	7
Hour Total	0	22	3	0	0	0	0	0	0	0	0	0	0	0	0	25
02:15	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
02:30	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
02:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20
03:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:45	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	9	2	0	0	0	0	0	0	0	0	0	0	0	0	11
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	9

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	5	0	0	1	0	0	0	0	0	0	0	0	0	0	6
05:30	0	6	3	0	0	0	0	0	0	0	0	0	0	0	0	9
05:45	0	11	3	0	0	0	0	0	0	0	0	0	0	0	0	14
06:00	0	30	3	1	0	0	0	0	0	0	0	0	0	0	0	34
Hour Total	0	52	9	1	1	0	0	0	0	0	0	0	0	0	0	63
06:15	0	11	1	0	0	1	0	0	1	0	0	0	0	0	0	14
06:30	0	24	6	1	1	0	0	0	0	0	0	0	0	0	0	32
06:45	0	47	3	1	6	0	0	0	0	0	0	0	0	0	0	57
07:00	1	91	14	2	14	0	0	0	0	0	0	0	0	0	0	122
Hour Total	1	173	24	4	21	1	0	0	1	0	0	0	0	0	0	225
07:15	0	187	19	0	3	0	0	0	0	0	0	0	0	0	0	209
07:30	0	54	16	0	1	1	0	1	0	0	0	0	0	0	0	73
07:45	2	84	12	0	7	0	0	0	0	0	0	0	0	0	0	105
08:00	0	67	29	0	4	0	0	0	0	0	0	0	0	0	0	100
Hour Total	2	392	76	0	15	1	0	1	0	0	0	0	0	0	0	487
08:15	0	81	17	0	7	1	0	0	0	0	0	0	0	0	0	106
08:30	0	81	17	0	4	0	0	0	0	0	0	0	0	0	0	102
08:45	0	101	27	0	3	0	0	0	0	0	0	0	0	0	0	131
09:00	0	109	28	0	4	1	0	2	0	0	0	0	0	0	0	144
Hour Total	0	372	89	0	18	2	0	2	0	0	0	0	0	0	0	483
09:15	0	71	15	0	7	0	0	0	0	0	0	0	0	0	0	93
09:30	0	62	22	0	4	0	0	1	0	0	0	0	0	0	0	89
09:45	0	62	8	1	1	0	0	0	0	0	0	0	0	0	0	72
10:00	0	70	24	0	2	0	0	0	0	0	0	0	0	0	0	96
Hour Total	0	265	69	1	14	0	0	1	0	0	0	0	0	0	0	350
10:15	0	73	15	0	1	0	0	0	0	0	0	0	0	0	0	89
10:30	2	67	18	0	5	0	0	1	0	0	0	0	0	0	0	93
10:45	1	70	22	1	3	0	0	0	0	0	0	0	0	0	0	97
11:00	1	92	19	0	2	0	0	0	0	0	0	0	0	0	0	114
Hour Total	4	302	74	1	11	0	0	1	0	0	0	0	0	0	0	393
11:15	0	81	21	2	2	2	0	0	0	0	0	0	0	0	0	108
11:30	1	115	27	0	0	1	0	0	0	0	0	0	0	0	0	144
11:45	0	82	21	0	0	0	0	0	0	0	0	0	0	0	0	103
12:00	0	94	19	0	8	0	0	0	0	0	0	0	0	0	0	121
Hour Total	1	372	88	2	10	3	0	0	0	0	0	0	0	0	0	476
DAY TOTAL	37	7753	1183	16	155	21	1	8	3	1	2	1	0	0	0	9181
PERCENTS	0.5%	84.5%	12.9%	0.2%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.7% Trucks & Buses 2.2%

AM Times	10:15	07:00	08:45	06:15	07:00	10:45		08:45	05:30							07:00
AM Peaks	4	416	92	4	25	3		3	1							509
PM Times	19:00	17:15	16:30	13:30	14:15	12:30	14:30	14:00	12:15	12:15	18:00	17:15				17:00
PM Peaks	6	953	131	2	17	5	1	2	2	1	1	1				1090

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	0	106	19	0	2	1	0	0	0	0	0	0	0	0	0	128
12:30	0	127	26	0	1	0	0	0	0	0	0	0	0	0	0	154
12:45	1	90	10	0	2	0	0	0	0	0	0	0	0	0	0	103
13:00	0	115	26	0	2	0	0	0	0	1	0	0	0	0	0	144
Hour Total	1	438	81	0	7	1	0	0	0	1	0	0	0	0	0	529
13:15	1	106	20	0	3	0	0	2	0	0	0	0	0	0	0	132
13:30	1	105	20	0	1	0	0	0	0	0	0	0	0	0	0	127
13:45	1	107	16	0	3	0	0	0	0	0	0	0	0	0	0	127
14:00	0	105	22	0	4	1	0	0	0	0	0	0	0	0	0	132
Hour Total	3	423	78	0	11	1	0	2	0	0	0	0	0	0	0	518
14:15	0	136	24	2	10	0	0	0	0	0	0	0	0	0	0	172
14:30	1	127	18	0	0	1	0	0	1	0	0	0	0	0	0	148
14:45	1	106	25	0	6	0	0	0	0	0	0	0	0	0	0	138
15:00	0	160	31	1	4	0	0	0	0	0	0	0	0	0	0	196
Hour Total	2	529	98	3	20	1	0	0	1	0	0	0	0	0	0	654
15:15	0	144	20	0	1	0	0	0	0	0	0	0	0	0	0	165
15:30	0	138	22	0	2	0	0	0	0	0	0	0	0	0	0	162
15:45	0	141	24	0	3	1	0	0	0	0	0	0	0	0	0	169
16:00	0	171	25	1	0	1	0	0	0	1	0	0	0	0	0	199
Hour Total	0	594	91	1	6	2	0	0	0	1	0	0	0	0	0	695
16:15	1	156	17	0	0	0	0	2	0	0	0	0	0	0	0	176
16:30	0	180	27	0	6	0	0	1	0	0	0	0	0	0	0	214
16:45	0	212	26	2	5	0	0	0	0	0	0	0	0	0	0	245
17:00	2	195	36	0	1	0	1	0	1	0	0	0	1	0	0	237
Hour Total	3	743	106	2	12	0	1	3	1	0	0	0	1	0	0	872
17:15	1	204	35	1	7	0	0	0	0	0	0	0	0	0	0	248
17:30	1	255	28	0	3	0	0	0	0	0	0	0	0	0	0	287
17:45	1	243	19	1	0	0	0	0	0	0	0	0	0	0	0	264
18:00	2	230	32	0	1	0	0	0	0	0	0	0	0	0	0	265
Hour Total	5	932	114	2	11	0	0	0	0	0	0	0	0	0	0	1064
18:15	4	158	20	0	1	0	0	0	0	0	0	0	0	0	0	183
18:30	2	196	13	0	0	0	0	0	0	0	0	0	0	0	0	211
18:45	1	154	17	0	0	1	0	0	0	0	0	0	0	0	0	173
19:00	2	148	20	0	0	0	0	0	0	0	0	0	0	0	0	170
Hour Total	9	656	70	0	1	1	0	0	0	0	0	0	0	0	0	737
19:15	0	132	10	0	1	0	0	0	0	0	0	0	0	0	0	143
19:30	1	138	8	0	0	0	0	0	0	0	0	0	0	0	0	147
19:45	0	113	14	0	0	0	0	0	0	0	0	0	0	0	0	127
20:00	2	111	14	0	1	0	0	0	0	0	0	0	1	0	0	129
Hour Total	3	494	46	0	2	0	0	0	0	0	0	0	1	0	0	546
20:15	2	93	9	0	0	0	0	0	0	0	0	0	0	0	0	104
20:30	0	93	17	0	0	0	0	2	0	0	0	0	0	0	0	112
20:45	2	102	8	0	0	1	0	0	0	0	0	0	0	0	0	113
21:00	0	104	10	0	0	0	0	0	0	0	0	0	0	0	0	114

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	4	392	44	0	0	1	0	2	0	0	0	0	0	0	0	443
21:15	0	91	8	0	0	0	0	0	0	0	0	0	0	0	0	99
21:30	0	92	10	0	0	0	0	0	0	0	0	0	0	0	0	102
21:45	0	70	7	0	1	0	0	0	0	0	0	0	0	0	0	78
22:00	0	60	5	0	0	0	0	0	0	0	0	0	0	0	0	65
Hour Total	0	313	30	0	1	0	0	0	0	0	0	0	0	0	0	344
22:15	1	60	5	0	0	0	0	0	0	0	0	0	0	0	0	66
22:30	0	47	4	0	0	0	0	0	0	0	0	0	0	0	0	51
22:45	1	41	1	0	0	0	0	0	0	0	0	0	0	0	0	43
23:00	0	37	7	0	0	0	0	0	0	0	0	0	0	0	0	44
Hour Total	2	185	17	0	0	0	0	0	0	0	0	0	0	0	0	204
23:15	0	28	3	0	0	0	0	0	0	0	0	0	0	0	0	31
23:30	0	22	4	0	0	0	0	0	0	0	0	0	0	0	0	26
23:45	0	27	1	0	0	0	0	0	0	0	0	0	0	0	0	28
24:00	0	18	2	0	0	0	0	0	0	0	0	0	0	0	0	20
Hour Total	0	95	10	0	0	0	0	0	0	0	0	0	0	0	0	105
00:15	0	14	2	0	0	0	0	0	0	0	0	0	0	0	0	16
00:30	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15
00:45	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	14
Hour Total	0	50	5	0	0	0	0	0	0	0	0	0	0	0	0	55
01:15	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
01:30	0	10	2	0	0	0	0	0	0	0	0	0	0	0	0	12
01:45	0	4	1	0	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	11	2	0	0	0	0	0	0	0	0	0	0	0	0	13
Hour Total	0	37	5	0	1	0	0	0	0	0	0	0	0	0	0	43
02:15	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
02:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:45	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	21
03:15	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	4
03:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	8	0	0	1	0	0	0	0	0	0	0	0	0	0	9
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Hour Total	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	9

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30	0	10	1	0	0	0	0	1	0	0	0	0	0	0	0	12
05:45	0	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15
06:00	0	19	3	0	1	0	0	0	0	0	0	0	0	0	0	23
Hour Total	0	44	5	0	1	0	0	1	0	0	0	0	0	0	0	51
06:15	0	11	3	0	1	1	0	0	0	0	0	0	0	0	0	16
06:30	0	25	3	0	1	1	0	1	0	0	0	0	0	0	0	31
06:45	1	41	2	1	6	0	0	0	0	0	0	0	0	0	0	51
07:00	1	124	12	3	11	0	0	0	0	0	0	0	0	0	0	151
Hour Total	2	201	20	4	19	2	0	1	0	0	0	0	0	0	0	249
07:15	0	182	22	0	4	0	0	0	0	0	0	0	0	0	0	208
07:30	3	61	14	0	2	0	0	0	0	0	0	0	0	0	0	80
07:45	0	74	13	0	6	0	0	0	0	0	0	0	0	0	0	93
08:00	0	73	19	0	2	0	0	0	0	0	0	0	0	0	0	94
Hour Total	3	390	68	0	14	0	0	0	0	0	0	0	0	0	0	475
08:15	0	66	20	0	7	0	0	0	0	0	0	0	0	0	0	93
08:30	0	66	18	0	5	0	0	0	0	0	1	0	0	0	0	90
08:45	0	87	19	0	3	0	0	0	0	0	0	0	0	0	0	109
09:00	0	89	17	0	3	0	0	0	0	0	0	0	0	0	0	109
Hour Total	0	308	74	0	18	0	0	0	0	0	1	0	0	0	0	401
09:15	0	83	19	0	4	0	1	0	0	0	0	0	0	0	0	107
09:30	0	88	25	0	6	0	0	0	0	0	0	0	0	0	0	119
09:45	0	73	26	0	1	1	0	0	0	0	0	0	0	0	0	101
10:00	1	68	26	0	1	0	0	0	0	0	0	0	0	0	0	96
Hour Total	1	312	96	0	12	1	1	0	0	0	0	0	0	0	0	423
10:15	0	73	14	0	1	0	1	0	0	0	0	0	0	0	0	89
10:30	0	90	21	0	2	0	0	0	1	0	0	0	0	0	0	114
10:45	0	79	20	0	1	0	0	0	0	0	0	0	0	0	0	100
11:00	0	77	11	1	3	0	0	0	0	0	0	0	0	0	0	92
Hour Total	0	319	66	1	7	0	1	0	1	0	0	0	0	0	0	395
11:15	1	85	18	1	2	0	0	0	0	0	0	0	0	0	0	107
11:30	1	105	24	0	0	0	0	0	0	0	0	0	0	0	0	130
11:45	1	90	22	0	0	0	0	0	0	0	0	0	0	0	0	113
12:00	0	104	10	0	3	1	1	0	0	0	0	0	0	0	0	119
Hour Total	3	384	74	1	5	1	1	0	0	0	0	0	0	0	0	469
DAY TOTAL	41	7875	1200	14	149	11	4	9	3	2	1	0	2	0	0	9311
PERCENTS	0.5%	84.6%	12.9%	0.2%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.9% Trucks & Buses 2.0%

AM Times	06:45	07:00	09:15	06:15	06:45	05:45	08:30	04:45	09:45	07:45						07:00
AM Peaks	5	441	96	4	23	2	1	1	1	1						532
PM Times	17:45	17:15	16:45	14:15	14:00	13:45	16:15	15:45	13:45	12:15			16:15			17:15
PM Peaks	9	932	125	3	20	2	1	3	1	1			1			1064

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
12:15	1	120	17	0	2	1	0	0	0	0	0	1	0	0	0	142
12:30	0	110	20	0	0	0	1	0	0	0	0	0	0	0	0	131
12:45	0	85	22	0	3	1	0	0	0	0	0	0	0	0	0	111
13:00	1	108	28	0	0	1	0	0	0	0	0	0	0	0	0	138
Hour Total	2	423	87	0	5	3	1	0	0	0	0	1	0	0	0	522
13:15	0	95	20	0	1	0	1	0	0	0	0	0	0	0	0	117
13:30	1	83	17	0	3	0	0	2	0	0	0	0	0	0	0	106
13:45	1	103	19	0	5	1	0	1	0	0	0	0	0	0	0	130
14:00	1	114	19	0	4	0	1	0	0	0	0	0	0	0	0	139
Hour Total	3	395	75	0	13	1	2	3	0	0	0	0	0	0	0	492
14:15	0	125	14	3	9	1	0	0	0	0	0	0	0	0	0	152
14:30	1	120	24	0	3	0	0	0	0	0	0	0	0	0	0	148
14:45	0	128	18	0	4	0	0	0	0	0	0	0	0	0	0	150
15:00	0	135	19	1	5	0	1	1	0	0	0	0	0	0	0	162
Hour Total	1	508	75	4	21	1	1	1	0	0	0	0	0	0	0	612
15:15	0	158	21	0	1	0	0	0	0	0	0	0	0	0	0	180
15:30	1	137	16	0	3	0	0	0	0	0	0	0	0	0	0	157
15:45	0	155	17	0	2	0	0	0	0	0	0	0	0	0	0	174
16:00	2	153	19	0	4	0	0	0	0	0	0	0	0	0	0	178
Hour Total	3	603	73	0	10	0	0	0	0	0	0	0	0	0	0	689
16:15	1	174	34	0	2	0	0	0	0	0	0	0	0	0	0	211
16:30	3	178	26	0	8	0	0	0	0	0	0	0	0	0	0	215
16:45	2	192	29	1	6	1	1	0	1	0	0	0	0	0	0	233
17:00	1	187	27	0	0	0	0	0	0	0	0	0	0	0	0	215
Hour Total	7	731	116	1	16	1	1	0	1	0	0	0	0	0	0	874
17:15	2	213	38	1	3	0	0	0	0	0	0	0	0	0	0	257
17:30	5	251	27	0	2	0	1	0	0	0	0	0	0	0	0	286
17:45	0	250	25	1	2	0	0	0	0	0	0	0	0	0	0	278
18:00	4	228	28	0	1	0	0	0	0	0	0	0	0	0	0	261
Hour Total	11	942	118	2	8	0	1	0	0	0	0	0	0	0	0	1082
18:15	0	169	32	0	1	0	0	0	0	0	0	0	0	0	0	202
18:30	3	175	25	0	2	0	0	0	0	0	0	0	0	0	0	205
18:45	0	160	23	0	1	0	0	0	0	0	1	0	0	0	0	185
19:00	0	162	22	0	1	0	0	0	0	0	1	0	0	0	0	186
Hour Total	3	666	102	0	5	0	0	0	0	0	2	0	0	0	0	778
19:15	2	136	26	0	0	0	0	0	0	0	0	0	0	0	0	164
19:30	1	133	13	0	0	0	0	0	0	0	0	0	0	0	0	147
19:45	2	113	9	0	0	0	0	0	0	0	0	0	0	0	0	124
20:00	0	108	10	0	0	0	0	0	0	0	0	0	0	0	0	118
Hour Total	5	490	58	0	0	0	0	0	0	0	0	0	0	0	0	553
20:15	3	118	6	0	0	0	0	0	0	0	0	0	0	0	0	127
20:30	1	115	7	0	1	0	0	0	0	0	0	0	0	0	0	124
20:45	0	107	17	0	0	0	0	0	0	0	0	0	0	0	0	124
21:00	1	96	9	0	0	0	0	0	0	0	0	0	0	0	0	106

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Hour Total	5	436	39	0	1	0	0	0	0	0	0	0	0	0	0	481
21:15	2	95	11	0	0	0	0	0	0	0	0	0	0	0	0	108
21:30	0	91	5	0	0	0	0	0	0	0	0	0	0	0	0	96
21:45	1	88	6	0	0	0	0	0	1	0	0	0	0	0	0	96
22:00	1	68	9	0	0	0	0	0	0	0	0	0	0	0	0	78
Hour Total	4	342	31	0	0	0	0	0	1	0	0	0	0	0	0	378
22:15	2	80	12	0	0	0	0	0	0	0	0	0	0	0	0	94
22:30	0	39	4	0	1	0	0	0	0	0	0	0	0	0	0	44
22:45	0	41	7	0	0	0	0	0	0	0	0	0	0	0	0	48
23:00	1	37	2	0	1	0	0	0	0	0	0	0	0	0	0	41
Hour Total	3	197	25	0	2	0	0	0	0	0	0	0	0	0	0	227
23:15	0	24	6	0	0	0	0	0	0	0	0	0	0	0	0	30
23:30	1	38	2	0	0	0	0	0	0	0	0	0	0	0	0	41
23:45	0	33	2	0	0	0	0	0	0	0	0	0	0	0	0	35
24:00	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	19
Hour Total	1	113	11	0	0	0	0	0	0	0	0	0	0	0	0	125
00:15	0	20	1	0	0	0	0	0	0	0	0	0	0	0	0	21
00:30	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	14
00:45	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13
01:00	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Hour Total	0	61	2	0	0	0	0	0	0	0	0	0	0	0	0	63
01:15	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
01:30	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6
01:45	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Hour Total	0	29	2	0	0	0	0	0	0	0	0	0	0	0	0	31
02:15	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	6
02:30	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
02:45	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Hour Total	0	23	1	0	0	0	0	0	0	0	0	0	0	0	0	24
03:15	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	8
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Hour Total	0	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
04:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Hour Total	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	6

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: CLASS.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
05:15	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
05:30	0	8	2	0	0	0	0	1	0	0	0	0	0	0	0	11
05:45	0	13	5	0	0	0	0	0	0	0	0	0	0	0	0	18
06:00	0	19	5	0	1	0	0	0	0	0	0	0	0	0	0	25
Hour Total	0	44	13	0	1	0	0	1	0	0	0	0	0	0	0	59
06:15	0	14	3	0	1	0	0	0	0	0	0	0	0	0	0	18
06:30	0	36	5	1	1	0	0	0	0	0	0	0	0	0	0	43
06:45	1	47	4	0	6	0	0	0	0	0	0	0	0	0	0	58
07:00	0	117	10	3	15	0	0	0	0	0	0	0	0	0	0	145
Hour Total	1	214	22	4	23	0	0	0	0	0	0	0	0	0	0	264
07:15	1	176	21	0	3	0	0	1	0	0	0	0	0	0	0	202
07:30	0	71	8	0	1	0	0	0	0	0	0	0	0	0	0	80
07:45	2	82	13	0	4	0	0	0	0	0	0	0	0	0	0	101
08:00	0	66	19	0	3	0	0	0	0	0	0	0	0	0	0	88
Hour Total	3	395	61	0	11	0	0	1	0	0	0	0	0	0	0	471
08:15	0	81	17	3	5	0	0	0	0	0	0	0	0	0	0	106
08:30	0	79	10	0	2	0	0	0	0	0	1	0	0	0	0	92
08:45	1	91	29	0	5	1	0	0	0	0	0	0	0	0	0	127
09:00	0	105	21	8	6	4	2	0	2	0	0	0	0	0	0	148
Hour Total	1	356	77	11	18	5	2	0	2	0	1	0	0	0	0	473
09:15	0	75	17	1	2	0	0	1	1	0	0	0	0	0	0	97
09:30	0	77	17	2	6	0	0	0	1	0	0	0	0	0	0	103
09:45	0	72	15	2	1	0	0	0	0	0	0	0	0	0	0	90
10:00	0	84	16	1	1	1	0	0	0	0	0	0	0	0	0	103
Hour Total	0	308	65	6	10	1	0	1	2	0	0	0	0	0	0	393
10:15	0	83	11	0	1	2	0	1	0	0	0	0	0	0	0	98
10:30	1	110	13	1	1	2	0	0	0	0	0	0	0	0	0	128
10:45	0	95	22	0	1	0	0	0	0	0	0	0	0	0	0	118
11:00	1	84	21	1	3	0	0	0	0	0	0	0	0	0	0	110
Hour Total	2	372	67	2	6	4	0	1	0	0	0	0	0	0	0	454
11:15	1	93	26	1	3	0	0	0	0	0	0	0	0	0	0	124
11:30	0	97	21	0	0	0	0	1	0	0	0	0	0	0	0	119
11:45	1	111	16	0	0	0	1	0	0	0	0	0	0	0	0	129
12:00	0	119	19	0	2	0	0	0	0	0	0	0	0	0	0	140
Hour Total	2	420	82	1	5	0	1	1	0	0	0	0	0	0	0	512
DAY TOTAL	57	8083	1205	31	155	16	9	9	6	0	3	1	0	0	0	9575
PERCENTS	0.6%	84.5%	12.6%	0.4%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Passenger Vehicles 97.5% Trucks & Buses 2.4%

AM Times	07:00	07:00	10:45	09:00	06:30	08:15	08:15	04:45	08:45		07:45					07:00
AM Peaks	3	446	90	13	25	5	2	1	4		1					528
PM Times	17:15	17:15	16:45	14:15	13:30	12:15	12:30	13:00	16:00		18:15	12:15				17:15
PM Peaks	11	942	121	4	21	3	2	3	1		2	1				1082

GRAND TOTAL	135	3588	459	14	12	6	2	0								
	23711	61	48	26	3	2	0	28067								
PERCENTS	0.5%	84.5%	12.8%	0.3%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	2	13	30	65	14	2	0	0	0	0	126
12:30	0	0	0	0	0	10	55	57	11	0	0	0	0	0	133
12:45	0	0	0	1	2	2	39	68	22	1	0	0	0	0	135
13:00	0	0	0	0	7	13	36	43	15	0	0	0	0	0	114
Hour Total	0	0	0	1	11	38	160	233	62	3	0	0	0	0	508
13:15	0	0	0	0	1	10	37	53	22	2	0	0	0	0	125
13:30	0	0	0	0	0	17	50	59	15	2	0	0	0	0	143
13:45	0	0	0	0	6	14	57	37	9	3	0	0	0	0	126
14:00	0	0	0	0	1	2	49	72	17	0	0	0	0	0	141
Hour Total	0	0	0	0	8	43	193	221	63	7	0	0	0	0	535
14:15	0	0	0	0	1	11	50	81	9	0	0	0	0	0	152
14:30	0	0	0	0	0	11	51	55	14	4	0	0	0	0	135
14:45	0	0	0	0	5	4	43	82	18	0	0	0	0	0	152
15:00	0	0	0	0	0	8	56	80	24	1	0	0	0	0	169
Hour Total	0	0	0	0	6	34	200	298	65	5	0	0	0	0	608
15:15	0	0	0	0	0	19	51	91	16	1	0	0	0	0	178
15:30	0	0	0	0	1	22	51	63	20	4	0	0	0	0	161
15:45	0	0	0	0	0	30	88	45	11	1	0	0	0	0	175
16:00	0	0	0	0	1	18	65	79	25	0	0	0	0	0	188
Hour Total	0	0	0	0	2	89	255	278	72	6	0	0	0	0	702
16:15	0	0	0	0	0	10	52	81	40	4	0	0	0	0	187
16:30	0	0	0	0	0	10	96	101	10	1	0	0	0	0	218
16:45	0	0	0	0	2	19	72	109	22	0	0	0	0	0	224
17:00	0	0	0	0	0	27	75	96	28	3	0	0	0	0	229
Hour Total	0	0	0	0	2	66	295	387	100	8	0	0	0	0	858
17:15	0	0	0	0	11	37	107	104	17	0	0	0	0	0	276
17:30	0	0	0	0	1	59	127	102	20	2	0	0	0	0	311
17:45	0	0	0	0	0	24	117	114	19	0	0	0	0	0	274
18:00	0	0	0	9	13	9	72	88	25	0	0	0	0	0	216
Hour Total	0	0	0	9	25	129	423	408	81	2	0	0	0	0	1077
18:15	0	0	2	5	12	42	67	57	17	2	0	0	0	0	204
18:30	0	0	0	0	2	13	65	103	19	2	0	0	0	0	204
18:45	0	0	0	0	0	6	55	63	25	0	0	0	0	0	149
19:00	0	0	0	0	4	10	81	49	26	2	0	0	0	0	172
Hour Total	0	0	2	5	18	71	268	272	87	6	0	0	0	0	729
19:15	0	0	0	0	8	18	57	50	8	2	0	0	0	0	143
19:30	0	0	0	0	0	3	49	58	25	4	0	0	0	0	139
19:45	0	0	0	0	0	22	37	41	4	1	0	0	0	0	105
20:00	0	0	0	0	1	15	37	37	11	6	0	0	0	0	107
Hour Total	0	0	0	0	9	58	180	186	48	13	0	0	0	0	494
20:15	0	0	0	0	0	13	39	45	10	0	0	0	0	0	107
20:30	0	0	0	0	0	13	50	43	9	1	0	0	0	0	116
20:45	0	0	0	0	1	16	45	43	6	0	0	0	0	0	111
21:00	0	0	0	0	0	4	46	32	8	0	0	0	0	0	90

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	0	1	46	180	163	33	1	0	0	0	0	424
21:15	0	0	0	0	0	11	46	32	5	2	0	0	0	0	96
21:30	0	0	0	0	0	12	23	47	6	2	0	0	0	0	90
21:45	0	0	0	0	0	7	34	25	10	2	0	0	0	0	78
22:00	0	0	0	0	0	4	18	30	9	2	0	0	0	0	63
Hour Total	0	0	0	0	0	34	121	134	30	8	0	0	0	0	327
22:15	0	0	0	0	2	7	21	29	10	1	1	0	0	0	71
22:30	0	0	0	2	1	7	10	15	14	0	0	0	0	0	49
22:45	0	0	0	0	0	3	17	16	7	0	0	0	0	0	43
23:00	0	0	0	0	0	2	11	16	8	0	1	0	0	0	38
Hour Total	0	0	0	2	3	19	59	76	39	1	2	0	0	0	201
23:15	0	0	0	0	0	4	11	17	3	0	0	0	0	0	35
23:30	0	0	0	0	0	2	8	12	3	2	0	0	0	0	27
23:45	0	0	0	0	0	2	8	14	5	1	0	0	0	0	30
24:00	0	0	0	0	0	2	8	5	7	0	0	0	0	0	22
Hour Total	0	0	0	0	0	10	35	48	18	3	0	0	0	0	114
00:15	0	0	0	0	0	2	4	6	4	2	0	0	0	0	18
00:30	0	0	0	0	0	1	3	9	4	2	0	0	0	0	19
00:45	0	0	0	0	0	0	3	4	2	1	0	0	0	0	10
01:00	0	0	0	0	0	2	5	5	3	0	0	0	0	0	15
Hour Total	0	0	0	0	0	5	15	24	13	5	0	0	0	0	62
01:15	0	0	0	0	0	0	0	6	2	0	0	0	0	0	8
01:30	0	0	0	0	0	0	2	4	2	0	0	0	0	0	8
01:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
02:00	0	0	0	0	0	0	3	3	1	0	0	0	0	0	7
Hour Total	0	0	0	0	0	0	5	15	5	0	0	0	0	0	25
02:15	0	0	0	0	0	0	1	4	1	0	0	0	0	0	6
02:30	0	0	0	0	0	0	3	1	1	0	0	0	0	0	5
02:45	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
03:00	0	0	0	0	0	2	2	0	1	0	0	0	0	0	5
Hour Total	0	0	0	0	0	2	7	8	3	0	0	0	0	0	20
03:15	0	0	0	0	0	1	1	0	1	0	0	0	0	0	3
03:30	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
03:45	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hour Total	0	0	0	0	0	1	2	6	2	0	0	0	0	0	11
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
04:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
05:00	0	0	0	0	0	2	0	0	4	0	0	0	0	0	6
Hour Total	0	0	0	0	0	2	1	0	4	2	0	0	0	0	9

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	1	1	2	2	0	0	0	0	0	6
05:30	0	0	0	0	1	0	0	4	3	1	0	0	0	0	9
05:45	0	0	0	0	0	0	1	10	2	1	0	0	0	0	14
06:00	0	0	0	0	0	0	4	19	8	3	0	0	0	0	34
Hour Total	0	0	0	0	1	1	6	35	15	5	0	0	0	0	63
06:15	0	0	0	0	0	2	3	7	2	0	0	0	0	0	14
06:30	0	0	0	0	0	0	9	9	12	2	0	0	0	0	32
06:45	0	0	0	0	0	3	15	29	8	2	0	0	0	0	57
07:00	0	0	0	0	0	6	61	43	12	0	0	0	0	0	122
Hour Total	0	0	0	0	0	11	88	88	34	4	0	0	0	0	225
07:15	0	0	0	0	1	14	87	98	8	1	0	0	0	0	209
07:30	0	0	0	0	0	5	27	27	9	4	1	0	0	0	73
07:45	0	0	0	0	1	3	36	53	11	1	0	0	0	0	105
08:00	0	0	0	0	0	6	35	44	14	1	0	0	0	0	100
Hour Total	0	0	0	0	2	28	185	222	42	7	1	0	0	0	487
08:15	0	0	0	0	1	9	37	42	14	3	0	0	0	0	106
08:30	0	0	0	0	4	5	33	48	11	1	0	0	0	0	102
08:45	0	0	0	0	0	7	60	52	10	2	0	0	0	0	131
09:00	0	0	0	0	0	20	56	49	15	4	0	0	0	0	144
Hour Total	0	0	0	0	5	41	186	191	50	10	0	0	0	0	483
09:15	0	0	0	0	0	2	24	53	12	2	0	0	0	0	93
09:30	0	0	0	0	0	3	29	37	18	2	0	0	0	0	89
09:45	0	0	0	0	0	1	16	49	4	1	1	0	0	0	72
10:00	0	0	0	0	0	3	18	51	20	3	0	1	0	0	96
Hour Total	0	0	0	0	0	9	87	190	54	8	1	1	0	0	350
10:15	0	0	0	0	0	5	25	43	12	4	0	0	0	0	89
10:30	0	0	0	0	2	9	30	42	8	2	0	0	0	0	93
10:45	0	0	0	0	0	7	44	32	13	1	0	0	0	0	97
11:00	0	0	0	0	0	9	49	43	12	1	0	0	0	0	114
Hour Total	0	0	0	0	2	30	148	160	45	8	0	0	0	0	393
11:15	0	0	0	0	1	4	22	59	19	1	2	0	0	0	108
11:30	0	0	0	0	0	24	43	64	12	1	0	0	0	0	144
11:45	0	0	0	0	1	1	23	47	29	2	0	0	0	0	103
12:00	0	0	0	0	2	8	33	58	14	6	0	0	0	0	121
Hour Total	0	0	0	0	4	37	121	228	74	10	2	0	0	0	476
DAY TOTAL	0	0	2	17	99	804	3220	3871	1039	122	6	1	0	0	9181
PERCENTS	0.0%	0.0%	0.1%	0.2%	1.1%	8.8%	35.1%	42.1%	11.3%	1.3%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
35.7 mph

85th Percentile Speed
44.7 mph

Median Speed
40.6 mph

Average Speed
40.4 mph

10 MPH Pace Speed
35 mph to 45 mph
7091 vehicles in pace
Representing 77.2% of the total vehicles

Vehicles > 45 MPH
1168
12.7%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	0	11	52	57	6	2	0	0	0	0	128
12:30	0	0	0	0	1	31	67	45	10	0	0	0	0	0	154
12:45	0	0	0	0	0	6	28	53	15	1	0	0	0	0	103
13:00	0	0	0	0	1	7	42	74	16	4	0	0	0	0	144
Hour Total	0	0	0	0	2	55	189	229	47	7	0	0	0	0	529
13:15	0	0	0	0	0	4	40	72	13	3	0	0	0	0	132
13:30	0	0	0	0	2	5	49	53	14	4	0	0	0	0	127
13:45	0	0	0	0	0	2	47	62	16	0	0	0	0	0	127
14:00	0	0	0	0	0	18	44	53	15	2	0	0	0	0	132
Hour Total	0	0	0	0	2	29	180	240	58	9	0	0	0	0	518
14:15	0	0	0	2	12	20	51	70	17	0	0	0	0	0	172
14:30	0	0	0	1	15	26	52	44	8	2	0	0	0	0	148
14:45	0	0	0	0	0	6	55	56	18	3	0	0	0	0	138
15:00	0	0	0	0	0	25	74	75	20	1	0	0	0	1	196
Hour Total	0	0	0	3	27	77	232	245	63	6	0	0	0	1	654
15:15	0	0	0	0	0	11	53	64	34	3	0	0	0	0	165
15:30	0	0	0	0	0	10	42	82	28	0	0	0	0	0	162
15:45	0	0	0	0	0	13	49	76	28	3	0	0	0	0	169
16:00	0	0	0	0	6	18	90	62	20	2	1	0	0	0	199
Hour Total	0	0	0	0	6	52	234	284	110	8	1	0	0	0	695
16:15	0	0	0	0	0	17	63	79	17	0	0	0	0	0	176
16:30	0	0	0	0	11	23	58	96	24	2	0	0	0	0	214
16:45	0	0	0	1	11	23	107	76	26	1	0	0	0	0	245
17:00	0	0	1	5	15	17	84	100	14	1	0	0	0	0	237
Hour Total	0	0	1	6	37	80	312	351	81	4	0	0	0	0	872
17:15	0	0	0	3	2	27	116	83	15	2	0	0	0	0	248
17:30	0	0	0	4	16	40	109	95	20	3	0	0	0	0	287
17:45	0	0	0	0	0	23	116	102	21	2	0	0	0	0	264
18:00	0	0	0	0	1	50	116	70	26	2	0	0	0	0	265
Hour Total	0	0	0	7	19	140	457	350	82	9	0	0	0	0	1064
18:15	1	0	0	0	6	25	65	65	20	0	1	0	0	0	183
18:30	0	0	0	0	4	19	80	85	20	3	0	0	0	0	211
18:45	0	0	0	0	1	14	69	72	17	0	0	0	0	0	173
19:00	0	0	0	0	3	13	52	80	19	3	0	0	0	0	170
Hour Total	1	0	0	0	14	71	266	302	76	6	1	0	0	0	737
19:15	0	0	0	0	1	8	54	59	19	2	0	0	0	0	143
19:30	0	0	0	0	0	12	57	62	16	0	0	0	0	0	147
19:45	0	0	0	0	0	6	52	51	18	0	0	0	0	0	127
20:00	0	0	0	0	1	8	63	47	9	1	0	0	0	0	129
Hour Total	0	0	0	0	2	34	226	219	62	3	0	0	0	0	546
20:15	0	0	0	0	1	12	35	46	10	0	0	0	0	0	104
20:30	0	0	0	3	4	24	41	33	7	0	0	0	0	0	112
20:45	0	0	0	0	4	16	57	34	2	0	0	0	0	0	113
21:00	0	0	0	0	2	10	46	50	6	0	0	0	0	0	114

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	3	11	62	179	163	25	0	0	0	0	0	443
21:15	0	0	0	0	3	18	38	32	7	1	0	0	0	0	99
21:30	0	0	0	0	2	21	48	25	4	2	0	0	0	0	102
21:45	0	0	0	0	1	11	22	33	10	1	0	0	0	0	78
22:00	0	0	0	0	0	3	17	33	12	0	0	0	0	0	65
Hour Total	0	0	0	0	6	53	125	123	33	4	0	0	0	0	344
22:15	0	0	0	0	0	8	27	21	10	0	0	0	0	0	66
22:30	0	0	0	0	0	1	18	22	8	1	1	0	0	0	51
22:45	0	0	0	1	0	6	19	10	6	1	0	0	0	0	43
23:00	0	0	0	0	1	3	8	25	7	0	0	0	0	0	44
Hour Total	0	0	0	1	1	18	72	78	31	2	1	0	0	0	204
23:15	0	0	0	0	1	1	10	13	3	3	0	0	0	0	31
23:30	0	0	0	0	0	2	9	11	4	0	0	0	0	0	26
23:45	0	0	0	0	2	3	5	7	10	1	0	0	0	0	28
24:00	0	0	0	0	0	0	5	10	4	1	0	0	0	0	20
Hour Total	0	0	0	0	3	6	29	41	21	5	0	0	0	0	105
00:15	0	0	0	0	0	1	5	8	1	1	0	0	0	0	16
00:30	0	0	0	0	0	1	5	5	3	1	0	0	0	0	15
00:45	0	0	0	0	0	2	3	4	1	0	0	0	0	0	10
01:00	0	0	0	0	0	2	3	8	1	0	0	0	0	0	14
Hour Total	0	0	0	0	0	6	16	25	6	2	0	0	0	0	55
01:15	0	0	0	0	0	4	5	3	0	0	0	0	0	0	12
01:30	0	0	0	0	0	0	5	6	1	0	0	0	0	0	12
01:45	0	0	0	0	0	1	2	1	1	1	0	0	0	0	6
02:00	0	0	0	0	0	1	3	8	1	0	0	0	0	0	13
Hour Total	0	0	0	0	0	6	15	18	3	1	0	0	0	0	43
02:15	0	0	0	0	0	0	1	4	1	0	0	0	0	0	6
02:30	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
02:45	0	0	0	0	0	0	2	5	1	0	0	0	0	0	8
03:00	0	0	0	0	0	0	1	0	3	1	0	0	0	0	5
Hour Total	0	0	0	0	0	0	4	11	5	1	0	0	0	0	21
03:15	0	0	0	0	1	0	1	2	0	0	0	0	0	0	4
03:30	0	0	0	0	0	0	0	1	2	0	0	0	0	0	3
03:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
04:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Hour Total	0	0	0	0	1	1	1	4	2	0	0	0	0	0	9
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	1	1	1	0	0	0	0	0	3
04:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
05:00	0	0	0	0	0	0	2	1	0	1	1	0	0	0	5
Hour Total	0	0	0	0	0	0	3	2	2	1	1	0	0	0	9

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:30	0	0	0	0	0	1	1	5	2	3	0	0	0	0	12
05:45	0	0	0	0	0	0	5	6	3	1	0	0	0	0	15
06:00	0	0	0	0	0	2	2	12	5	2	0	0	0	0	23
Hour Total	0	0	0	0	0	3	9	23	10	6	0	0	0	0	51
06:15	0	0	0	0	1	1	2	7	4	1	0	0	0	0	16
06:30	0	0	0	0	0	0	6	13	10	2	0	0	0	0	31
06:45	0	0	0	0	0	0	16	25	10	0	0	0	0	0	51
07:00	0	0	0	0	0	16	64	62	7	2	0	0	0	0	151
Hour Total	0	0	0	0	1	17	88	107	31	5	0	0	0	0	249
07:15	0	0	0	1	0	9	69	105	23	1	0	0	0	0	208
07:30	0	0	0	0	1	2	22	41	12	0	1	0	0	1	80
07:45	0	0	0	0	0	2	35	39	13	4	0	0	0	0	93
08:00	0	0	0	0	0	4	27	44	18	1	0	0	0	0	94
Hour Total	0	0	0	1	1	17	153	229	66	6	1	0	0	1	475
08:15	0	0	0	0	0	5	36	40	10	2	0	0	0	0	93
08:30	0	0	0	0	0	2	36	36	14	2	0	0	0	0	90
08:45	0	0	0	0	0	14	32	47	14	2	0	0	0	0	109
09:00	0	0	0	0	0	2	41	52	11	3	0	0	0	0	109
Hour Total	0	0	0	0	0	23	145	175	49	9	0	0	0	0	401
09:15	0	0	0	0	0	8	33	52	12	2	0	0	0	0	107
09:30	0	0	0	0	0	8	50	40	20	1	0	0	0	0	119
09:45	0	0	0	0	4	12	38	32	15	0	0	0	0	0	101
10:00	0	0	0	0	2	6	31	41	14	2	0	0	0	0	96
Hour Total	0	0	0	0	6	34	152	165	61	5	0	0	0	0	423
10:15	0	0	0	1	1	8	27	42	8	2	0	0	0	0	89
10:30	0	0	0	0	0	6	36	53	19	0	0	0	0	0	114
10:45	0	0	0	0	1	9	31	43	14	2	0	0	0	0	100
11:00	0	0	0	0	0	8	28	36	15	5	0	0	0	0	92
Hour Total	0	0	0	1	2	31	122	174	56	9	0	0	0	0	395
11:15	0	0	0	0	3	8	26	51	18	1	0	0	0	0	107
11:30	0	0	0	0	0	10	48	55	13	4	0	0	0	0	130
11:45	0	0	0	0	0	4	54	41	14	0	0	0	0	0	113
12:00	0	0	0	0	0	11	47	45	14	2	0	0	0	0	119
Hour Total	0	0	0	0	3	33	175	192	59	7	0	0	0	0	469
DAY TOTAL	1	0	1	22	144	848	3384	3750	1039	115	5	0	0	2	9311
PERCENTS	0.1%	0.0%	0.1%	0.3%	1.6%	9.1%	36.3%	40.2%	11.1%	1.2%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total

Statistical Information...

15th Percentile Speed
35.6 mph

85th Percentile Speed
44.7 mph

Median Speed
40.4 mph

Average Speed
40.2 mph

10 MPH Pace Speed
35 mph to 45 mph
7134 vehicles in pace
Representing 76.6% of the total vehicles

Vehicles > 45 MPH
1161
12.5%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
12:15	0	0	0	0	3	9	60	55	12	3	0	0	0	0	142
12:30	0	0	0	0	0	7	37	68	18	1	0	0	0	0	131
12:45	0	0	0	0	0	6	46	41	17	1	0	0	0	0	111
13:00	0	0	0	0	0	24	55	47	11	1	0	0	0	0	138
Hour Total	0	0	0	0	3	46	198	211	58	6	0	0	0	0	522
13:15	0	0	0	0	2	6	40	51	17	1	0	0	0	0	117
13:30	0	0	0	0	0	3	33	52	12	5	1	0	0	0	106
13:45	0	0	0	2	10	11	32	53	21	1	0	0	0	0	130
14:00	0	0	0	0	0	18	66	38	15	2	0	0	0	0	139
Hour Total	0	0	0	2	12	38	171	194	65	9	1	0	0	0	492
14:15	0	0	0	0	0	8	59	74	10	1	0	0	0	0	152
14:30	0	0	0	0	0	22	61	61	4	0	0	0	0	0	148
14:45	0	0	0	0	0	16	75	47	12	0	0	0	0	0	150
15:00	0	0	0	1	5	11	44	66	32	3	0	0	0	0	162
Hour Total	0	0	0	1	5	57	239	248	58	4	0	0	0	0	612
15:15	0	0	0	0	4	29	73	63	9	2	0	0	0	0	180
15:30	0	0	0	0	6	19	40	79	12	1	0	0	0	0	157
15:45	0	0	0	0	3	29	49	74	18	1	0	0	0	0	174
16:00	0	0	0	0	3	28	57	74	14	2	0	0	0	0	178
Hour Total	0	0	0	0	16	105	219	290	53	6	0	0	0	0	689
16:15	0	0	0	0	9	28	82	72	20	0	0	0	0	0	211
16:30	0	0	0	0	6	14	99	79	16	1	0	0	0	0	215
16:45	0	0	0	0	0	15	92	97	26	3	0	0	0	0	233
17:00	0	0	0	0	0	18	93	83	19	2	0	0	0	0	215
Hour Total	0	0	0	0	15	75	366	331	81	6	0	0	0	0	874
17:15	0	0	0	0	7	19	104	107	20	0	0	0	0	0	257
17:30	0	0	0	0	0	52	120	97	16	1	0	0	0	0	286
17:45	0	0	0	0	1	23	120	97	35	2	0	0	0	0	278
18:00	0	0	0	1	10	43	95	95	16	1	0	0	0	0	261
Hour Total	0	0	0	1	18	137	439	396	87	4	0	0	0	0	1082
18:15	0	6	0	4	13	10	61	89	16	3	0	0	0	0	202
18:30	0	0	0	0	0	15	81	83	24	2	0	0	0	0	205
18:45	0	0	0	0	1	19	94	57	13	1	0	0	0	0	185
19:00	0	0	0	0	4	17	78	68	18	1	0	0	0	0	186
Hour Total	0	6	0	4	18	61	314	297	71	7	0	0	0	0	778
19:15	0	0	0	0	0	24	65	56	18	1	0	0	0	0	164
19:30	0	0	0	0	1	17	52	64	12	1	0	0	0	0	147
19:45	0	0	0	0	0	20	46	42	15	1	0	0	0	0	124
20:00	0	0	0	0	2	8	53	46	9	0	0	0	0	0	118
Hour Total	0	0	0	0	3	69	216	208	54	3	0	0	0	0	553
20:15	0	0	0	0	2	24	58	33	9	1	0	0	0	0	127
20:30	0	0	0	3	2	16	52	42	9	0	0	0	0	0	124
20:45	0	0	0	1	6	18	59	30	7	1	2	0	0	0	124
21:00	0	0	0	0	1	19	43	33	8	2	0	0	0	0	106

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
Hour Total	0	0	0	4	11	77	212	138	33	4	2	0	0	0	481
21:15	0	0	0	0	2	11	46	40	7	1	1	0	0	0	108
21:30	0	0	0	0	1	7	30	47	11	0	0	0	0	0	96
21:45	0	0	0	0	0	15	35	41	3	2	0	0	0	0	96
22:00	0	0	0	0	3	4	31	30	9	1	0	0	0	0	78
Hour Total	0	0	0	0	6	37	142	158	30	4	1	0	0	0	378
22:15	0	0	0	0	0	13	43	31	6	1	0	0	0	0	94
22:30	0	0	0	0	0	3	9	27	5	0	0	0	0	0	44
22:45	0	0	0	0	2	1	14	21	8	2	0	0	0	0	48
23:00	0	0	0	0	1	4	8	20	7	1	0	0	0	0	41
Hour Total	0	0	0	0	3	21	74	99	26	4	0	0	0	0	227
23:15	0	0	0	0	0	3	3	15	8	1	0	0	0	0	30
23:30	0	0	0	0	0	0	7	22	10	2	0	0	0	0	41
23:45	0	0	0	0	0	0	7	14	12	2	0	0	0	0	35
24:00	0	0	0	0	0	1	1	15	2	0	0	0	0	0	19
Hour Total	0	0	0	0	0	4	18	66	32	5	0	0	0	0	125
00:15	0	0	0	0	0	1	8	9	3	0	0	0	0	0	21
00:30	0	0	0	0	0	1	6	4	2	1	0	0	0	0	14
00:45	0	0	0	0	0	1	1	9	2	0	0	0	0	0	13
01:00	0	0	0	0	1	0	5	4	2	3	0	0	0	0	15
Hour Total	0	0	0	0	1	3	20	26	9	4	0	0	0	0	63
01:15	0	0	0	0	0	1	1	6	0	0	0	0	0	0	8
01:30	0	0	0	0	0	0	1	3	2	0	0	0	0	0	6
01:45	0	0	0	0	0	0	3	4	1	0	0	0	0	0	8
02:00	0	0	0	0	0	0	4	2	2	0	1	0	0	0	9
Hour Total	0	0	0	0	0	1	9	15	5	0	1	0	0	0	31
02:15	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6
02:30	0	0	0	0	0	0	1	3	2	0	0	0	0	0	6
02:45	0	0	0	0	0	0	3	3	0	0	0	0	0	0	6
03:00	0	0	0	0	0	1	2	1	1	1	0	0	0	0	6
Hour Total	0	0	0	0	0	1	6	11	5	1	0	0	0	0	24
03:15	0	0	0	0	0	0	5	1	2	0	0	0	0	0	8
03:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
03:45	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Hour Total	0	0	0	0	1	1	6	2	2	0	0	0	0	0	12
04:15	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
04:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Hour Total	0	0	0	0	0	1	0	2	3	0	0	0	0	0	6

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
05:15	0	0	0	0	0	3	0	1	1	0	0	0	0	0	5
05:30	0	0	0	0	0	0	5	4	2	0	0	0	0	0	11
05:45	0	0	0	0	0	0	2	11	5	0	0	0	0	0	18
06:00	0	0	0	0	0	1	5	11	7	1	0	0	0	0	25
Hour Total	0	0	0	0	0	4	12	27	15	1	0	0	0	0	59
06:15	0	0	0	0	0	1	1	8	6	0	1	1	0	0	18
06:30	0	0	0	0	0	2	15	12	13	1	0	0	0	0	43
06:45	0	0	0	0	0	0	16	22	15	5	0	0	0	0	58
07:00	0	0	0	0	0	8	53	65	19	0	0	0	0	0	145
Hour Total	0	0	0	0	0	11	85	107	53	6	1	1	0	0	264
07:15	0	0	0	0	1	20	54	103	20	4	0	0	0	0	202
07:30	0	0	0	0	0	1	19	50	8	2	0	0	0	0	80
07:45	0	0	0	0	0	5	30	47	15	4	0	0	0	0	101
08:00	0	0	0	0	1	5	26	41	12	3	0	0	0	0	88
Hour Total	0	0	0	0	2	31	129	241	55	13	0	0	0	0	471
08:15	0	0	0	0	1	5	34	51	13	2	0	0	0	0	106
08:30	0	0	0	0	0	7	26	45	11	3	0	0	0	0	92
08:45	0	0	0	2	0	8	53	51	11	2	0	0	0	0	127
09:00	0	0	0	0	2	16	67	49	14	0	0	0	0	0	148
Hour Total	0	0	0	2	3	36	180	196	49	7	0	0	0	0	473
09:15	0	0	0	0	5	7	19	41	23	2	0	0	0	0	97
09:30	0	0	0	0	0	2	22	62	15	1	1	0	0	0	103
09:45	0	0	0	0	1	10	25	34	19	1	0	0	0	0	90
10:00	0	0	0	0	0	10	42	38	13	0	0	0	0	0	103
Hour Total	0	0	0	0	6	29	108	175	70	4	1	0	0	0	393
10:15	0	0	0	0	0	1	24	50	21	2	0	0	0	0	98
10:30	0	0	0	0	0	3	47	61	17	0	0	0	0	0	128
10:45	0	0	0	0	0	8	36	45	25	4	0	0	0	0	118
11:00	0	0	0	0	1	9	38	43	19	0	0	0	0	0	110
Hour Total	0	0	0	0	1	21	145	199	82	6	0	0	0	0	454
11:15	0	0	0	0	0	13	51	48	11	1	0	0	0	0	124
11:30	0	0	0	0	0	17	50	44	8	0	0	0	0	0	119
11:45	0	0	0	0	0	13	41	55	18	2	0	0	0	0	129
12:00	0	0	0	0	2	7	50	60	21	0	0	0	0	0	140
Hour Total	0	0	0	0	2	50	192	207	58	3	0	0	0	0	512
DAY TOTAL	0	6	0	14	126	916	3500	3844	1054	107	7	1	0	0	9575
PERCENTS	0.0%	0.1%	0.0%	0.2%	1.4%	9.6%	36.5%	40.1%	11.0%	1.1%	0.0%	0.0%	0.0%	0.0%	100%

Site Reference: Site C
Site ID: 000000009395
Location: Longhill, btw Buford & Glenburnie
Direction: WEST
Lane: 1

File: SPEED.prn
City: 13-103 RS Max
County: 37.30952 76.75717

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	71+	Total
GRAND TOTAL	1	3	369	10104	3132	18	0								
	6	53	2568	11465	344	2	2								28067
PERCENTS	0.1%	0.1%	0.1%	0.2%	1.4%	9.1%	35.9%	40.8%	11.1%	1.2%	0.0%	0.0%	0.0%	0.0%	100%

Statistical Information...

15th Percentile Speed
35.5 mph

85th Percentile Speed
44.7 mph

Median Speed
40.3 mph

Average Speed
40.2 mph

10 MPH Pace Speed
35 mph to 45 mph
7344 vehicles in pace
Representing 76.6% of the total vehicles

Vehicles > 45 MPH
1169
12.2%

Site Reference: Site D
Site ID: 000000010711
Location: Olde Town, btw Westmoreland & Humfisine
Direction: NORTH

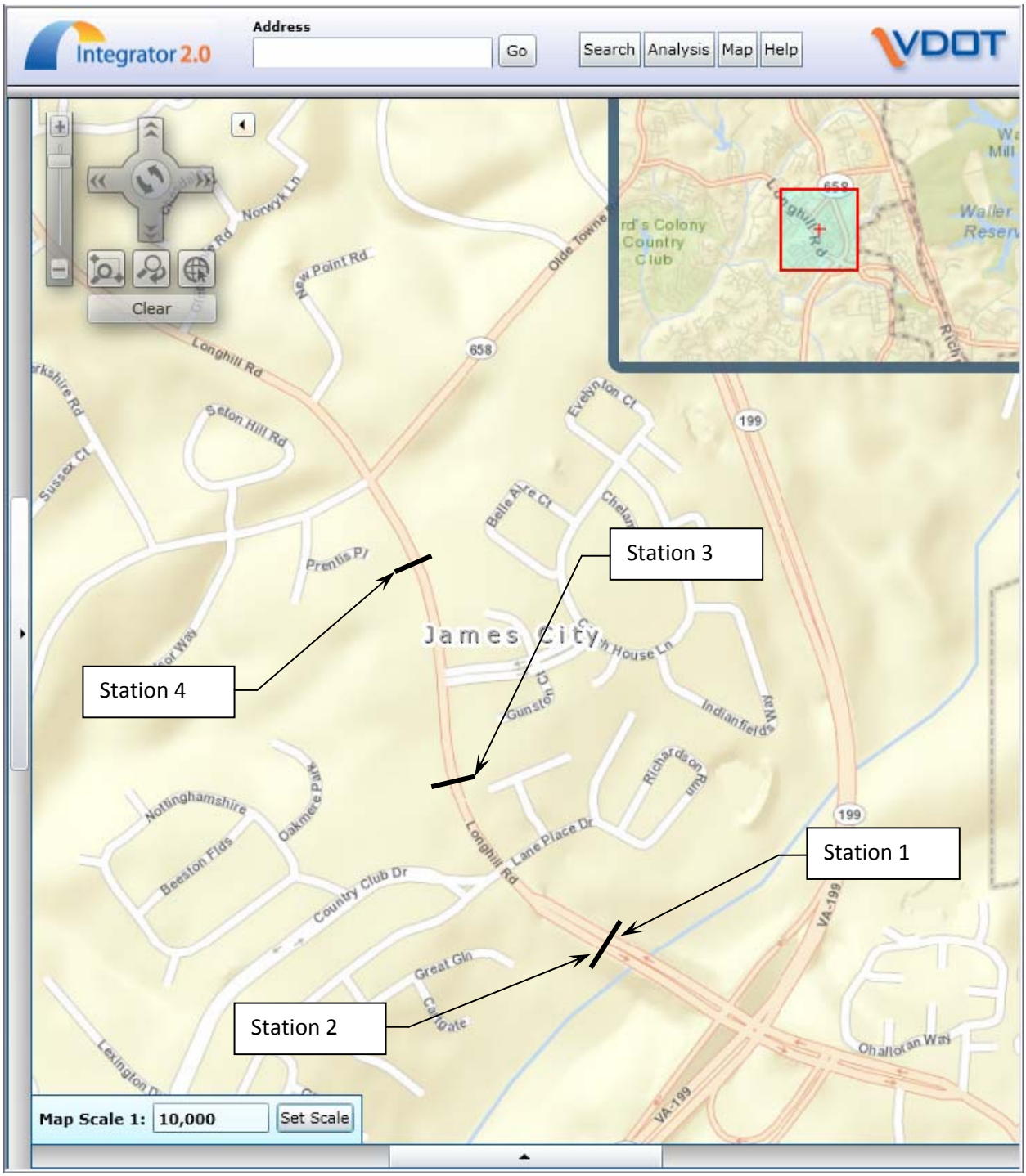
File: Humelsine_NB.prn
City: 13-103 RS Max
County: 37.31035 76.74803

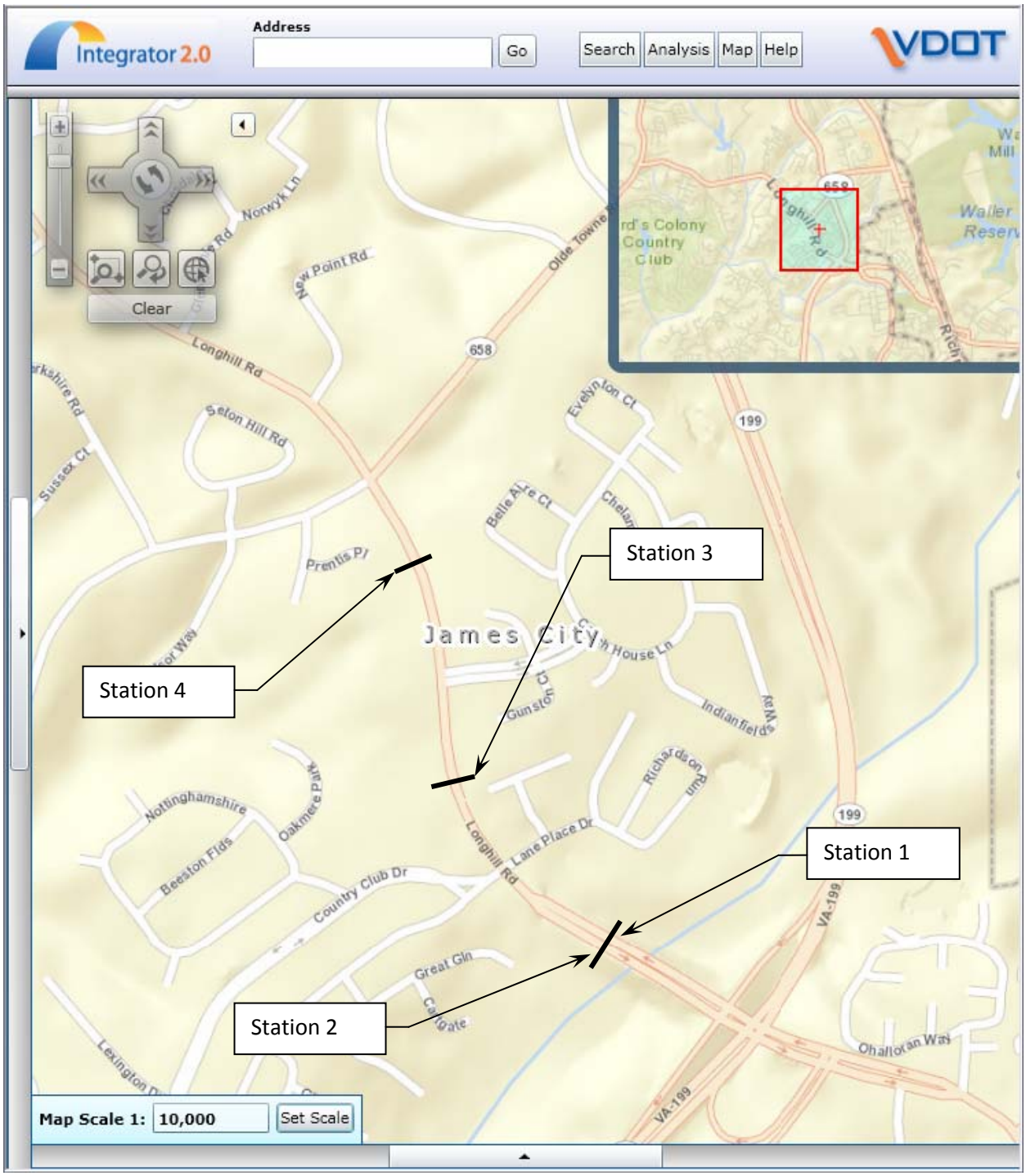
TIME	MON		TUE		WED		THU		FRI		SAT		SUN		WK TOT		WK AVG	
			28		29		30		31									
Lane 1	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm
00:15			86	1	78	6	72	0							7	236	2	78
00:30			77	3	95	3	71	6							12	243	4	81
00:45			71	1	78	4	76	5							10	225	3	75
01:00			100	3	80	2	87	1							6	267	2	89
01:15			89	3	56	2	54	0							5	199	1	66
01:30			83	3	69	3	82	2							8	234	2	78
01:45			76	0	65	0	66	1							1	207	0	69
02:00			75	3	88	1	80	3							7	243	2	81
02:15			69	2	58	4	73	0							6	200	2	66
02:30			84	0	86	1	86	0							1	256	0	85
02:45			94	1	91	2	96	2							5	281	1	93
03:00			76	2	84	2	90	1							5	250	1	83
03:15			85	0	90	1	79	1							2	254	0	84
03:30			82	4	66	1	108	1							6	256	2	85
03:45			120	0	87	1	85	0							1	292	0	97
04:00			93	0	85	2	76	3							5	254	1	84
04:15			88	1	96	0	90	2							3	274	1	91
04:30			85	0	82	1	91	1							2	258	0	86
04:45			83	3	96	3	94	1							7	273	2	91
05:00			113	5	112	4	113	3							12	338	4	112
05:15			132	5	113	4	109	4							13	354	4	118
05:30			128	7	104	9	106	3							19	338	6	112
05:45			105	7	124	9	116	10							26	345	8	115
06:00			103	14	95	10	97	18							42	295	14	98
06:15			101	15	80	16	96	10							41	277	13	92
06:30			92	19	89	20	99	25							64	280	21	93
06:45			86	29	80	40	80	36							105	246	35	82
07:00			78	40	99	29	91	31							100	268	33	89
07:15			85	42	69	47	78	44							133	232	44	77
07:30			70	51	71	30	89	43							124	230	41	76
07:45			61	46	69	47	65	51							144	195	48	65
08:00			55	78	67	59	55	53							190	177	63	59
08:15			49	56	56	53	57	60							169	162	56	54
08:30			56	60	60	66	60	64							190	176	63	58
08:45			44	79	45	72	61	62							213	150	71	50
09:00			57	64	46	75	49	77							216	152	72	50
09:15			45	70	49	55	49	57							182	143	60	47
09:30			32	78	38	69	20	89							236	90	78	30
09:45			28	71	32	78	29	84							233	89	77	29
10:00			30	70	31	69	32	76							215	93	71	31
10:15			14	76	19	73	23	77							226	56	75	18
10:30			8	63	11	57	19	76							196	38	65	12
10:45			9	69	13	67	14	58							194	36	64	12
11:00			16	68	16	75	17	81							224	49	74	16
11:15			8	52	10	51	10	57							160	28	53	9
11:30			14	72	13	83	14	92							247	41	82	13
11:45			6	71	10	79	6	88							238	22	79	7
12:00			4	82	6	85	9	104							271	19	90	6
TOTALS	0		3245		4646		4689		1563		0		0		14143		4682	
AM Times					9:30		11:15		11:15						11:15		11:15	
AM Peaks					295		298		341						916		304	
PM Times			17:00		17:00		17:00								17:00		17:00	
PM Peaks			478		453		444								1375		457	

Site Reference: Site D
Site ID: 000000010739
Location: Olde Town, btw Westmoreland & Humfisine
Direction: SOUTH

File: Humelsine_SB.prn
City: 13-103 RS Max
County: 37.31035 76.74803

TIME	MON		TUE		WED		THU		FRI		SAT		SUN		WK TOT		WK AVG	
			28		29		30		31									
Lane 1	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm	am	pm
00:15			75	6	79	7	73	6							19	227	6	75
00:30			86	5	77	4	62	9							18	225	6	75
00:45			57	3	66	5	88	7							15	211	5	70
01:00			83	5	85	7	77	3							15	245	5	81
01:15			100	3	78	4	85	6							13	263	4	87
01:30			87	4	71	2	70	3							9	228	3	76
01:45			80	2	75	4	87	0							6	242	2	80
02:00			79	2	83	5	72	2							9	234	3	78
02:15			83	3	85	4	82	0							7	250	2	83
02:30			86	3	82	1	74	3							7	242	2	80
02:45			90	2	84	9	104	2							13	278	4	92
03:00			95	1	98	3	91	1							5	284	1	94
03:15			87	0	94	2	83	1							3	264	1	88
03:30			88	3	82	1	87	0							4	257	1	85
03:45			96	0	83	2	85	0							2	264	0	88
04:00			94	0	92	0	93	2							2	279	0	93
04:15			91	1	106	1	107	0							2	304	0	101
04:30			110	1	107	1	107	1							3	324	1	108
04:45			105	0	127	3	106	1							4	338	1	112
05:00			104	2	113	2	95	4							8	312	2	104
05:15			133	6	107	1	124	5							12	364	4	121
05:30			151	8	149	7	154	5							20	454	6	151
05:45			143	7	128	17	132	6							30	403	10	134
06:00			116	13	125	14	110	13							40	351	13	117
06:15			96	9	90	8	105	11							28	291	9	97
06:30			102	18	97	19	116	20							57	315	19	105
06:45			83	26	88	22	77	32							80	248	26	82
07:00			91	47	85	56	97	34							137	273	45	91
07:15			70	52	65	55	77	57							164	212	54	70
07:30			87	39	86	45	85	50							134	258	44	86
07:45			58	48	70	50	54	55							153	182	51	60
08:00			53	70	56	69	54	68							207	163	69	54
08:15			63	60	90	67	71	63							190	224	63	74
08:30			60	61	65	64	66	67							192	191	64	63
08:45			63	66	71	54	64	58							178	198	59	66
09:00			57	68	62	49	63	81							198	182	66	60
09:15			77	57	60	55	75	72							184	212	61	70
09:30			54	56	72	49	57	37							142	183	47	61
09:45			58	51	44	58	49	59							168	151	56	50
10:00			46	62	38	53	41	47							162	125	54	41
10:15			31	57	34	53	41	64							174	106	58	35
10:30			30	53	24	56	24	65							174	78	58	26
10:45			18	59	20	65	23	66							190	61	63	20
11:00			12	57	24	50	16	60							167	52	55	17
11:15			18	59	16	67	18	54							180	52	60	17
11:30			17	62	16	61	16	65							188	49	62	16
11:45			9	59	5	73	12	80							212	26	70	8
12:00			8	60	9	65	6	78							203	23	67	7
TOTALS	0		3580		4899		4924		1423		0		0		14826		4911	
AM Times					8:00		11:15		8:30						11:15		11:15	
AM Peaks					257		266		278						783		259	
PM Times			17:15		17:15		17:15								17:15		17:15	
PM Peaks			543		509		520								1572		523	


Integrator 2.0
Address
Go
Search
Analysis
Map
Help
VDOT
Clear
Longhill Rd
New Point Rd
Olde Towne Rd
Norwyk Ln
Seton Hill Rd
Sussex Ct
Prentis Pl
Evelynton Ct
Belle Aire Ct
James City
Gunston
Indianfields Rd
Richardson Rd
Nottinghamshire
Beeston Flds
Oakmere Park
Country Club Dr
Lane Place Dr
Great Gln
Carlgate
Lexington Dr
Ohalloran Way
VA-199
658
199
Station 1
Station 2
Station 3
Station 4
Map Scale 1: 10,000
Set Scale


Integrator 2.0
Address
Go
Search
Analysis
Map
Help
VDOT
Clear
Longhill Rd
New Point Rd
Olde Towne Rd
Norwyk Ln
Seton Hill Rd
Sussex Ct
Prentis Pl
Evelynton Ct
Belle Aire Ct
James City
Gunston
Indianfields Rd
Richardson Rd
Nottinghamshire
Beeston Flds
Oakmere Park
Country Club Dr
Lane Place Dr
Great Gln
Carlgate
Lexington Dr
Ohalloran Way
VA-199
658
199
Station 1
Station 2
Station 3
Station 4
Map Scale 1: 10,000
Set Scale

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- PC - HV

	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		
07:00 AM	4	0	6	10	1	160	6	167	47	0	18	65	3	177	0	180	422
07:15 AM	2	0	9	11	1	84	6	91	41	0	5	46	11	190	0	201	349
07:30 AM	3	1	12	16	1	66	7	74	62	1	6	69	3	160	0	163	322
07:45 AM	9	0	17	26	5	107	7	119	73	1	9	83	3	230	1	234	462
Total	18	1	44	63	8	417	26	451	223	2	38	263	20	757	1	778	1555
08:00 AM	2	2	11	15	6	106	18	130	62	0	6	68	3	183	2	188	401
08:15 AM	3	0	8	11	1	93	10	104	53	0	7	60	4	170	1	175	350
08:30 AM	3	0	5	8	0	116	11	127	49	1	12	62	4	176	0	180	377
08:45 AM	3	0	23	26	7	129	10	146	58	0	8	66	2	198	0	200	438
Total	11	2	47	60	14	444	49	507	222	1	33	256	13	727	3	743	1566
09:00 AM	1	0	9	10	0	135	19	154	46	0	5	51	4	127	1	132	347
09:15 AM	3	0	7	10	1	121	15	137	51	0	9	60	5	150	1	156	363
09:30 AM	1	1	4	6	2	111	7	120	46	0	10	56	4	151	1	156	338
09:45 AM	4	1	6	11	5	100	14	119	57	0	8	65	1	139	2	142	337
Total	9	2	26	37	8	467	55	530	200	0	32	232	14	567	5	586	1385
10:00 AM	0	0	5	5	3	86	16	105	44	0	6	50	2	136	3	141	301
10:15 AM	3	0	4	7	2	122	23	147	32	0	10	42	3	116	3	122	318
10:30 AM	2	0	7	9	4	94	18	116	45	0	9	54	4	111	1	116	295
10:45 AM	2	0	3	5	4	116	18	138	28	0	8	36	4	128	2	134	313
Total	7	0	19	26	13	418	75	506	149	0	33	182	13	491	9	513	1227
11:00 AM	1	0	5	6	5	125	22	152	29	0	5	34	4	114	2	120	312
11:15 AM	5	0	3	8	4	110	17	131	45	0	12	57	6	145	3	154	350
11:30 AM	0	1	6	7	5	153	30	188	24	0	8	32	3	107	2	112	339
11:45 AM	3	0	8	11	2	134	27	163	35	0	7	42	6	156	0	162	378
Total	9	1	22	32	16	522	96	634	133	0	32	165	19	522	7	548	1379
12:00 PM	1	0	8	9	6	158	32	196	30	0	6	36	10	128	2	140	381
12:15 PM	2	0	11	13	2	121	28	151	20	0	7	27	8	131	2	141	332
12:30 PM	2	0	11	13	6	127	28	161	35	0	9	44	2	136	3	141	359
12:45 PM	4	0	11	15	14	149	24	187	32	0	6	38	8	175	2	185	425
Total	9	0	41	50	28	555	112	695	117	0	28	145	28	570	9	607	1497
01:00 PM	2	0	3	5	6	138	41	185	51	1	14	66	10	165	3	178	434
01:15 PM	1	0	8	9	7	128	29	164	31	0	13	44	2	139	2	143	360
01:30 PM	2	0	6	8	6	131	25	162	36	0	21	57	5	133	5	143	370
01:45 PM	4	0	7	11	5	141	22	168	30	0	34	64	4	145	1	150	393
Total	9	0	24	33	24	538	117	679	148	1	82	231	21	582	11	614	1557
02:00 PM	3	1	4	8	9	135	27	171	41	1	6	48	6	141	2	149	376
02:15 PM	4	0	3	7	5	145	26	176	25	0	9	34	7	125	4	136	353
02:30 PM	3	0	5	8	6	142	21	169	29	1	10	40	20	219	1	240	457
02:45 PM	2	0	9	11	7	163	27	197	34	1	14	49	6	170	2	178	435
Total	12	1	21	34	27	585	101	713	129	3	39	171	39	655	9	703	1621
03:00 PM	2	0	4	6	6	159	40	205	21	0	6	27	3	168	0	171	409
03:15 PM	1	0	6	7	7	173	41	221	41	0	9	50	12	173	4	189	467
03:30 PM	3	0	7	10	12	174	37	223	30	0	10	40	6	162	2	170	443

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 2

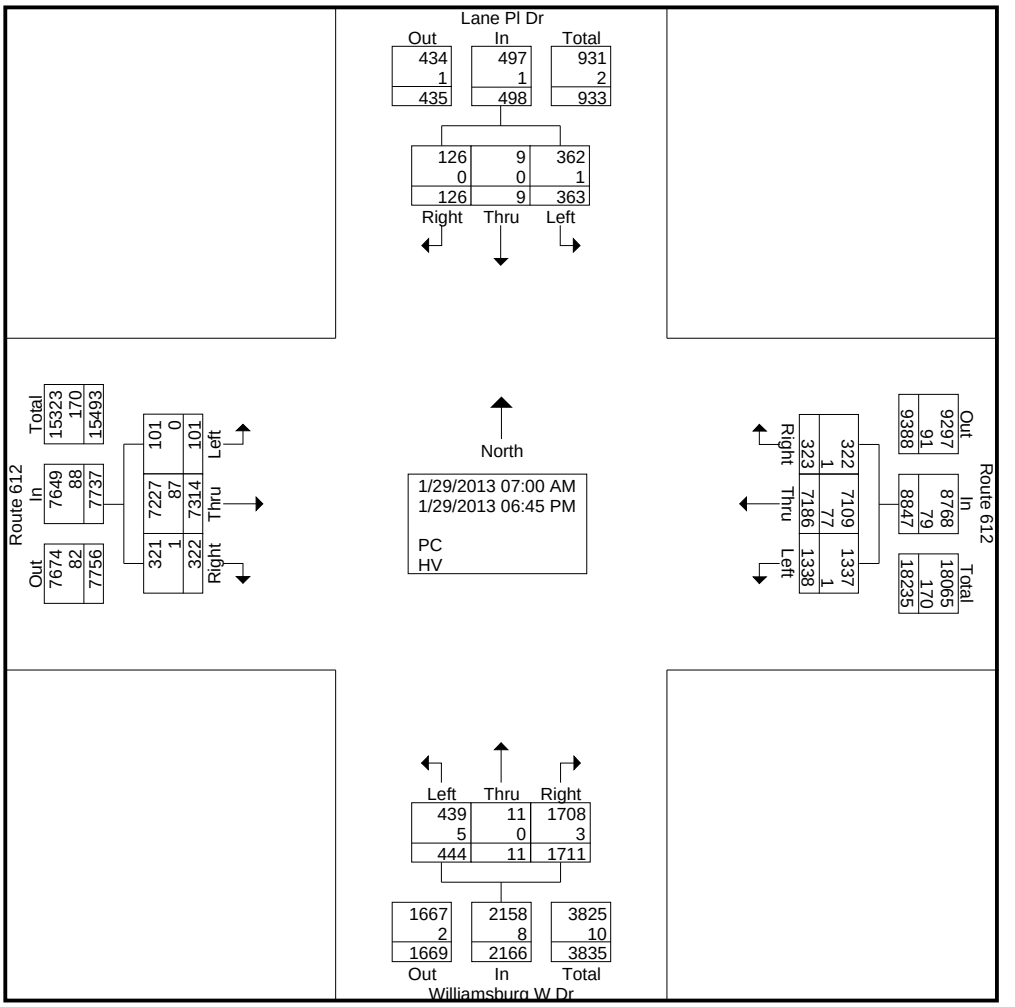
Groups Printed- PC - HV

	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		
03:45 PM	1	0	14	15	4	186	40	230	20	1	14	35	7	140	3	150	430
Total	7	0	31	38	29	692	158	879	112	1	39	152	28	643	9	680	1749
04:00 PM	3	0	5	8	11	217	51	279	33	0	9	42	6	141	4	151	480
04:15 PM	4	0	8	12	25	210	53	288	32	1	9	42	15	165	3	183	525
04:30 PM	6	0	12	18	9	213	40	262	30	0	16	46	11	164	2	177	503
04:45 PM	3	0	11	14	11	223	47	281	19	0	8	27	28	162	3	193	515
Total	16	0	36	52	56	863	191	1110	114	1	42	157	60	632	12	704	2023
05:00 PM	5	0	5	10	11	254	56	321	16	0	8	24	15	187	5	207	562
05:15 PM	2	0	11	13	12	255	49	316	28	0	4	32	4	180	4	188	549
05:30 PM	1	0	7	8	18	244	51	313	17	1	2	20	6	165	6	177	518
05:45 PM	4	0	3	7	9	262	45	316	23	0	11	34	12	158	2	172	529
Total	12	0	26	38	50	1015	201	1266	84	1	25	110	37	690	17	744	2158
06:00 PM	3	0	7	10	10	194	53	257	22	0	3	25	7	123	3	133	425
06:15 PM	2	0	4	6	18	184	45	247	23	0	7	30	16	114	4	134	417
06:30 PM	2	1	9	12	17	168	34	219	14	1	10	25	5	143	1	149	405
06:45 PM	0	1	6	7	5	124	25	154	21	0	1	22	2	98	1	101	284
Total	7	2	26	35	50	670	157	877	80	1	21	102	30	478	9	517	1531
Grand Total	126	9	363	498	323	7186	1338	8847	1711	11	444	2166	322	7314	101	7737	19248
Apprch %	25.3	1.8	72.9		3.7	81.2	15.1		79	0.5	20.5		4.2	94.5	1.3		
Total %	0.7	0	1.9	2.6	1.7	37.3	7	46	8.9	0.1	2.3	11.3	1.7	38	0.5	40.2	
PC	126	9	362	497	322	7109	1337	8768	1708	11	439	2158	321	7227	101	7649	19072
% PC	100	100	99.7	99.8	99.7	98.9	99.9	99.1	99.8	100	98.9	99.6	99.7	98.8	100	98.9	99.1
HV	0	0	1	1	1	77	1	79	3	0	5	8	1	87	0	88	176
% HV	0	0	0.3	0.2	0.3	1.1	0.1	0.9	0.2	0	1.1	0.4	0.3	1.2	0	1.1	0.9

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 3

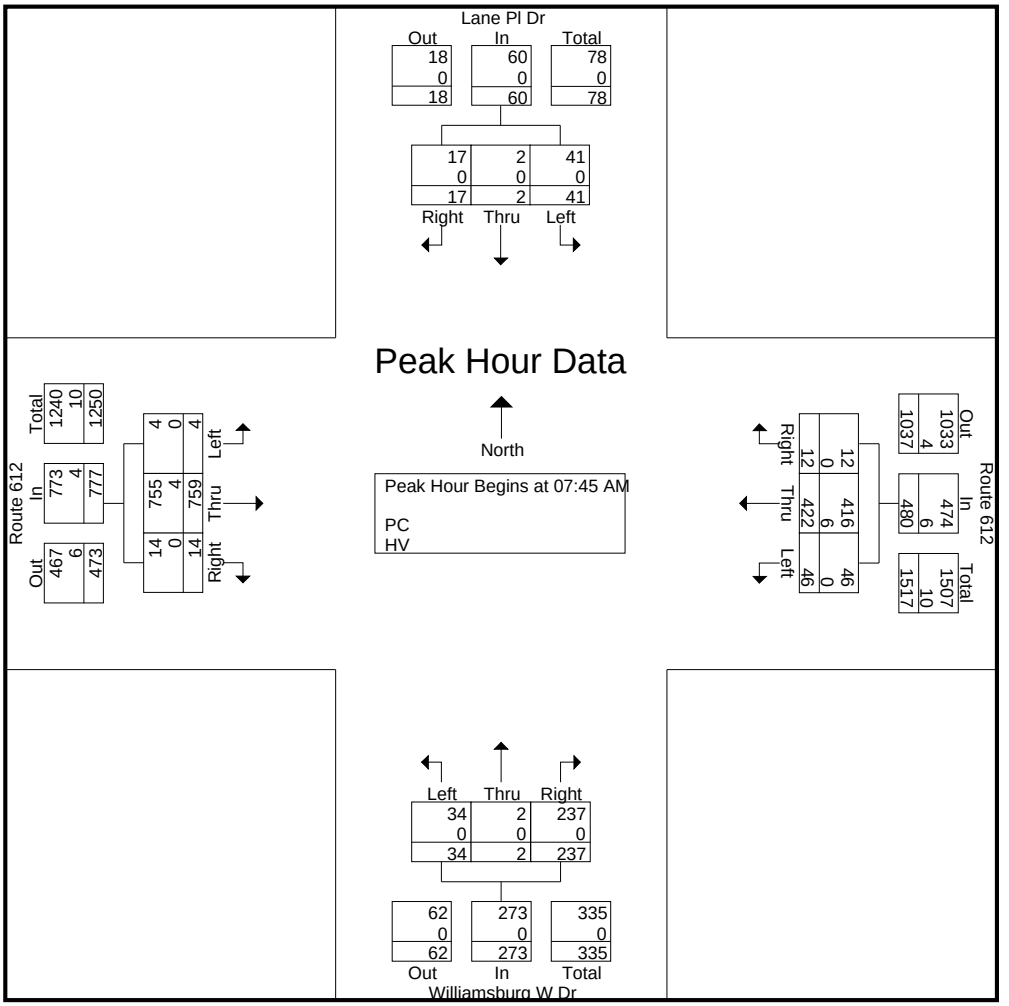


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013

	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**9**	0	**17**	**26**	5	107	7	119	**73**	**1**	9	**83**	3	**230**	1	**234**	**462**
08:00 AM	2	**2**	11	15	**6**	106	**18**	**130**	62	0	6	68	3	183	**2**	188	401
08:15 AM	3	0	8	11	1	93	10	104	53	0	7	60	**4**	170	1	175	350
08:30 AM	3	0	5	8	0	**116**	11	127	49	1	**12**	62	4	176	0	180	377
Total Volume	17	2	41	60	12	422	46	480	237	2	34	273	14	759	4	777	1590
% App. Total	28.3	3.3	68.3		2.5	87.9	9.6		86.8	0.7	12.5		1.8	97.7	0.5		
PHF	.472	.250	.603	.577	.500	.909	.639	.923	.812	.500	.708	.822	.875	.825	.500	.830	.860
PC	17	2	41	60	12	416	46	474	237	2	34	273	14	755	4	773	1580
% PC	100	100	100	100	100	98.6	100	98.8	100	100	100	100	100	99.5	100	99.5	99.4
HV	0	0	0	0	0	6	0	6	0	0	0	0	0	4	0	4	10
% HV	0	0	0	0	0	1.4	0	1.3	0	0	0	0	0	0.5	0	0.5	0.6

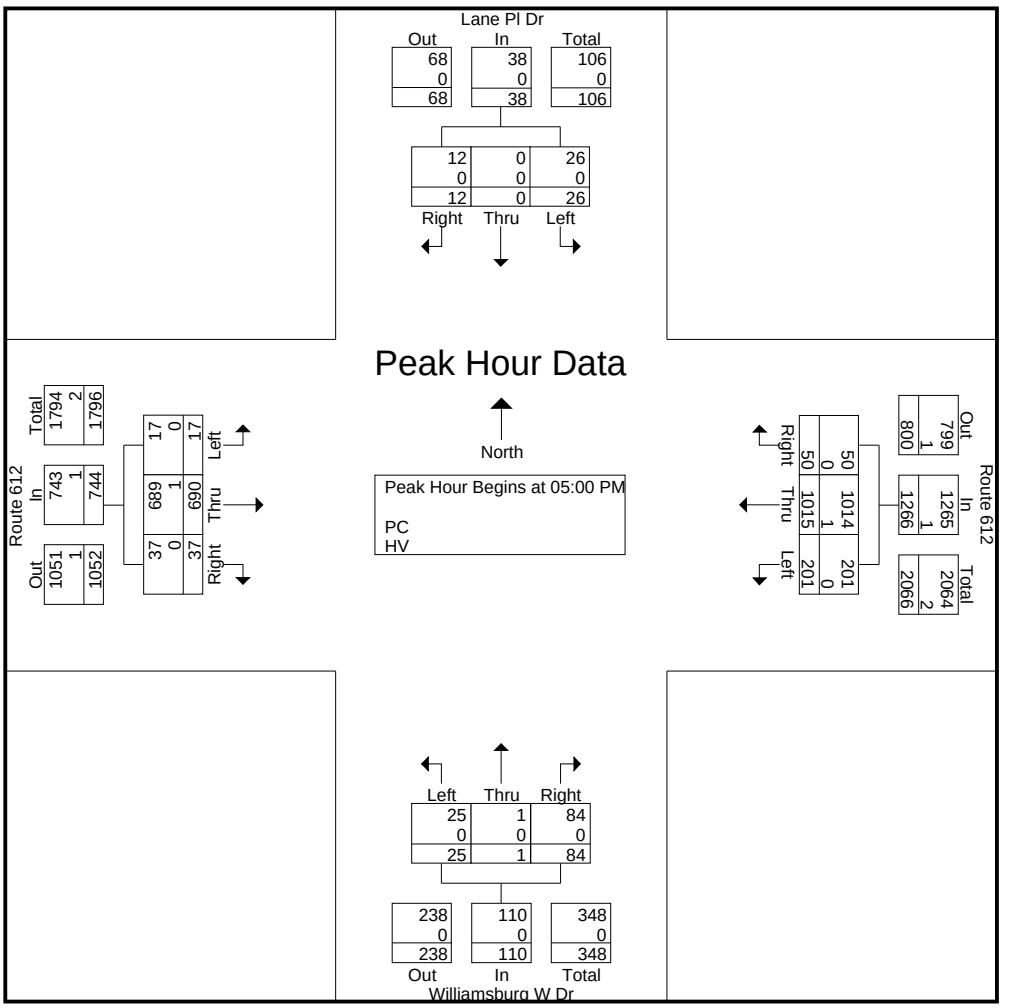


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 5

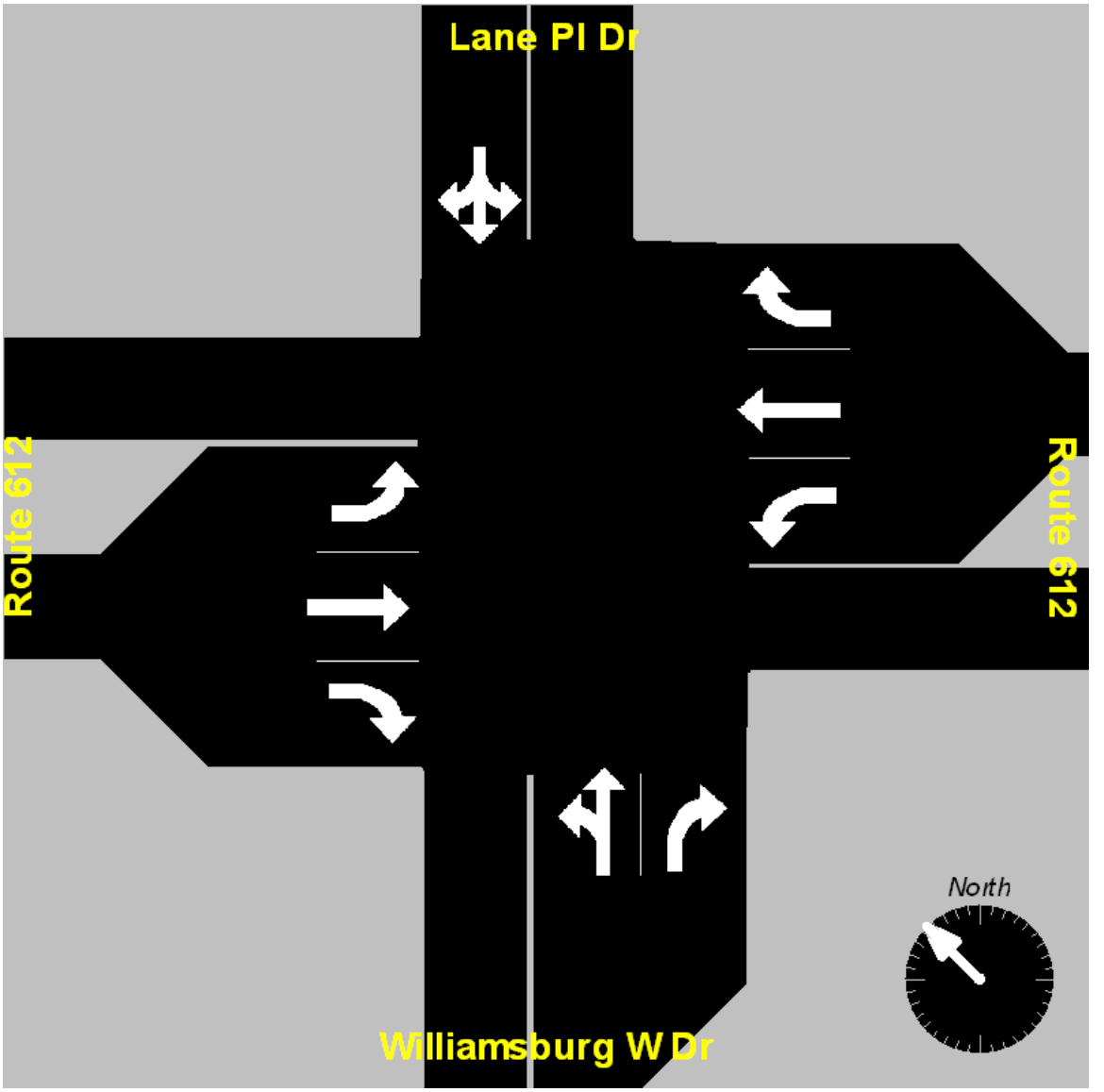
	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**5**	0	5	10	11	254	**56**	**321**	16	0	8	24	**15**	**187**	5	**207**	**562**
05:15 PM	2	0	**11**	**13**	12	255	49	316	**28**	0	4	32	4	180	4	188	549
05:30 PM	1	0	7	8	**18**	244	51	313	17	**1**	2	20	6	165	**6**	177	518
05:45 PM	4	0	3	7	9	**262**	45	316	23	0	**11**	**34**	12	158	2	172	529
Total Volume	12	0	26	38	50	1015	201	1266	84	1	25	110	37	690	17	744	2158
% App. Total	31.6	0	68.4		3.9	80.2	15.9		76.4	0.9	22.7		5	92.7	2.3		
PHF	.600	.000	.591	.731	.694	.969	.897	.986	.750	.250	.568	.809	.617	.922	.708	.899	.960
PC	12	0	26	38	50	1014	201	1265	84	1	25	110	37	689	17	743	2156
% PC	100	0	100	100	100	99.9	100	99.9	100	100	100	100	100	99.9	100	99.9	99.9
HV	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
% HV	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0.1	0.1



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 6



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013

Groups Printed- PC - HV

	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
07:00 AM	0	1	1	0	213	213	0	199	1	200	414
07:15 AM	0	0	0	1	89	90	0	183	2	185	275
07:30 AM	0	0	0	2	63	65	0	140	0	140	205
07:45 AM	1	1	2	1	143	144	0	241	1	242	388
Total	1	2	3	4	508	512	0	763	4	767	1282
08:00 AM	0	1	1	0	105	105	0	184	2	186	292
08:15 AM	2	3	5	8	113	121	0	199	2	201	327
08:30 AM	3	0	3	6	119	125	0	196	0	196	324
08:45 AM	2	1	3	8	138	146	0	211	2	213	362
Total	7	5	12	22	475	497	0	790	6	796	1305
09:00 AM	1	4	5	2	109	111	0	184	6	190	306
09:15 AM	3	7	10	3	125	128	0	166	1	167	305
09:30 AM	2	6	8	1	128	129	0	142	0	142	279
09:45 AM	2	2	4	7	123	130	0	142	2	144	278
Total	8	19	27	13	485	498	0	634	9	643	1168
10:00 AM	3	4	7	1	101	102	0	143	2	145	254
10:15 AM	3	1	4	1	110	111	0	145	2	147	262
10:30 AM	2	4	6	2	103	105	0	113	0	113	224
10:45 AM	3	3	6	1	119	120	0	130	0	130	256
Total	11	12	23	5	433	438	0	531	4	535	996
11:00 AM	2	2	4	2	155	157	0	125	4	129	290
11:15 AM	1	1	2	6	148	154	0	125	3	128	284
11:30 AM	3	2	5	0	144	144	0	137	0	137	286
11:45 AM	4	2	6	4	152	156	0	112	3	115	277
Total	10	7	17	12	599	611	0	499	10	509	1137
12:00 PM	2	6	8	1	152	153	0	147	3	150	311
12:15 PM	3	6	9	4	189	193	0	133	2	135	337
12:30 PM	2	2	4	2	149	151	0	144	3	147	302
12:45 PM	0	8	8	3	152	155	0	167	2	169	332
Total	7	22	29	10	642	652	0	591	10	601	1282
01:00 PM	2	1	3	2	146	148	0	151	1	152	303
01:15 PM	3	3	6	1	110	111	0	149	0	149	266
01:30 PM	1	3	4	2	136	138	0	122	2	124	266
01:45 PM	3	2	5	4	125	129	0	140	1	141	275
Total	9	9	18	9	517	526	0	562	4	566	1110
02:00 PM	6	3	9	2	163	165	0	156	2	158	332
02:15 PM	1	3	4	3	168	171	0	166	1	167	342
02:30 PM	0	6	6	1	171	172	0	224	1	225	403
02:45 PM	4	2	6	2	164	166	0	134	0	134	306
Total	11	14	25	8	666	674	0	680	4	684	1383
03:00 PM	7	1	8	0	198	198	0	161	5	166	372
03:15 PM	1	2	3	2	189	191	0	189	2	191	385
03:30 PM	0	4	4	3	202	205	0	169	1	170	379
03:45 PM	2	2	4	4	189	193	0	176	0	176	373
Total	10	9	19	9	778	787	0	695	8	703	1509
04:00 PM	2	2	4	4	255	259	0	142	3	145	408

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013

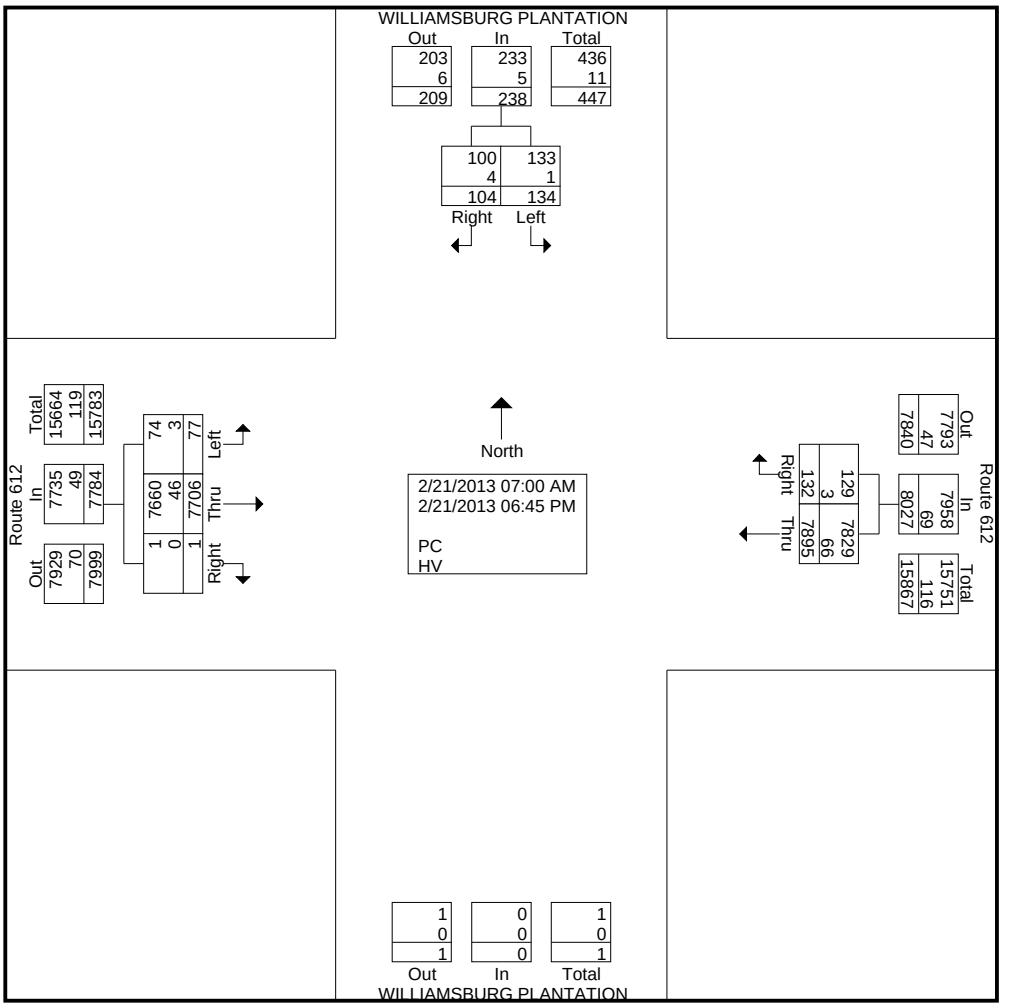
Groups Printed- PC - HV

	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
04:15 PM	1	2	3	3	222	225	0	164	1	165	393
04:30 PM	3	2	5	4	242	246	0	153	0	153	404
04:45 PM	0	2	2	0	263	263	0	175	1	176	441
Total	6	8	14	11	982	993	0	634	5	639	1646
05:00 PM	7	3	10	2	268	270	1	206	1	208	488
05:15 PM	7	4	11	3	273	276	0	183	1	184	471
05:30 PM	4	6	10	4	238	242	0	189	2	191	443
05:45 PM	1	3	4	3	253	256	0	164	2	166	426
Total	19	16	35	12	1032	1044	1	742	6	749	1828
06:00 PM	2	3	5	6	194	200	0	188	4	192	397
06:15 PM	0	4	4	4	207	211	0	130	0	130	345
06:30 PM	2	1	3	4	198	202	0	124	1	125	330
06:45 PM	1	3	4	3	179	182	0	143	2	145	331
Total	5	11	16	17	778	795	0	585	7	592	1403
Grand Total	104	134	238	132	7895	8027	1	7706	77	7784	16049
Apprch %	43.7	56.3		1.6	98.4		0	99	1		
Total %	0.6	0.8	1.5	0.8	49.2	50	0	48	0.5	48.5	
PC	100	133	233	129	7829	7958	1	7660	74	7735	15926
% PC	96.2	99.3	97.9	97.7	99.2	99.1	100	99.4	96.1	99.4	99.2
HV	4	1	5	3	66	69	0	46	3	49	123
% HV	3.8	0.7	2.1	2.3	0.8	0.9	0	0.6	3.9	0.6	0.8

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 3

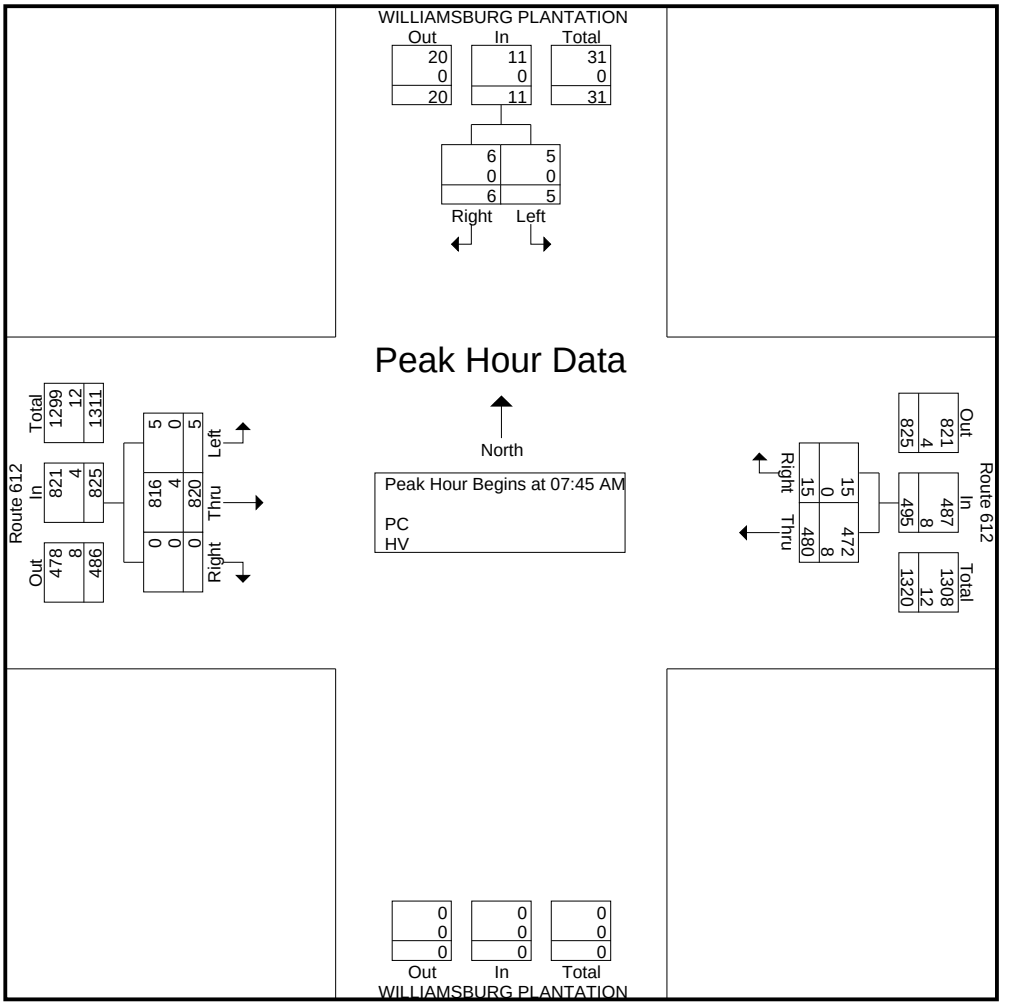


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 4

	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:45 AM											
07:45 AM	1	1	2	1	**143**	**144**	0	**241**	1	**242**	**388**
08:00 AM	0	1	1	0	105	105	0	184	**2**	186	292
08:15 AM	2	**3**	**5**	**8**	113	121	0	199	2	201	327
08:30 AM	**3**	0	3	6	119	125	0	196	0	196	324
Total Volume	6	5	11	15	480	495	0	820	5	825	1331
% App. Total	54.5	45.5		3	97		0	99.4	0.6		
PHF	.500	.417	.550	.469	.839	.859	.000	.851	.625	.852	.858
PC	6	5	11	15	472	487	0	816	5	821	1319
% PC	100	100	100	100	98.3	98.4	0	99.5	100	99.5	99.1
HV	0	0	0	0	8	8	0	4	0	4	12
% HV	0	0	0	0	1.7	1.6	0	0.5	0	0.5	0.9

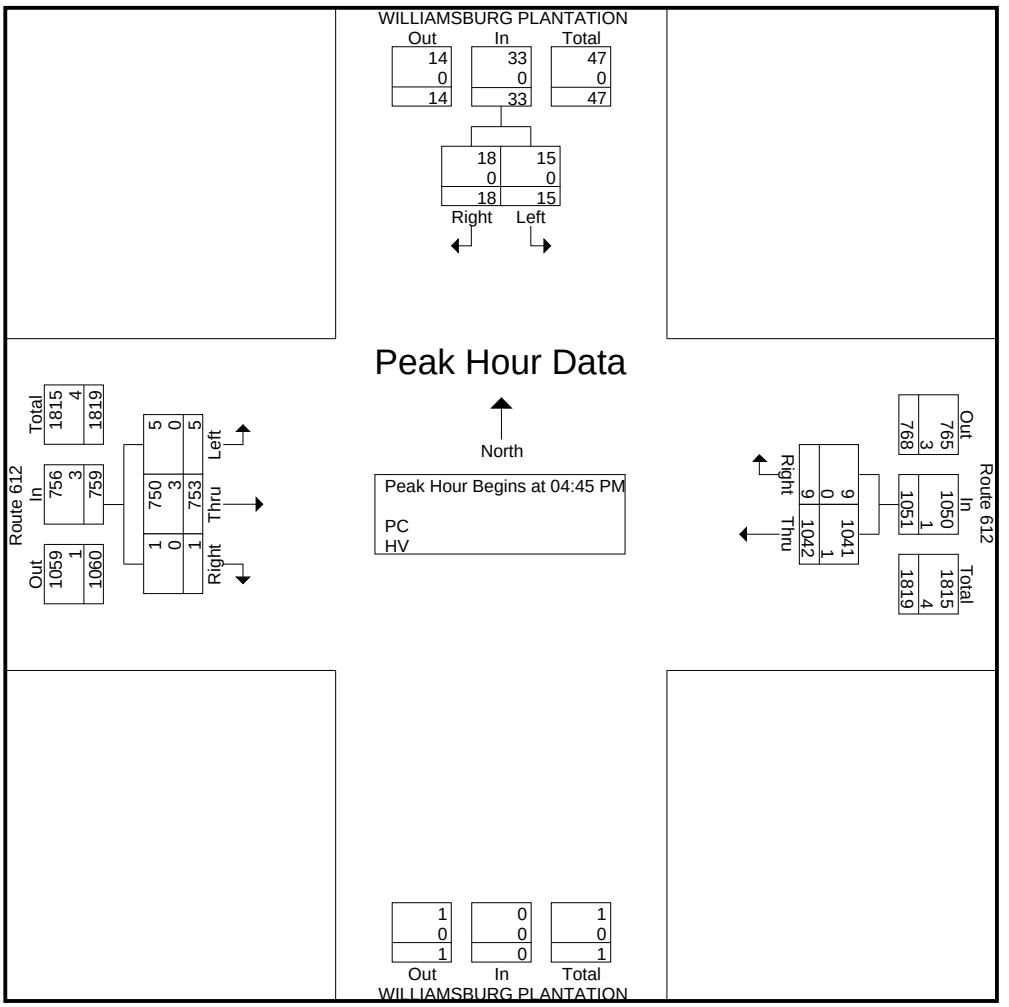


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 5

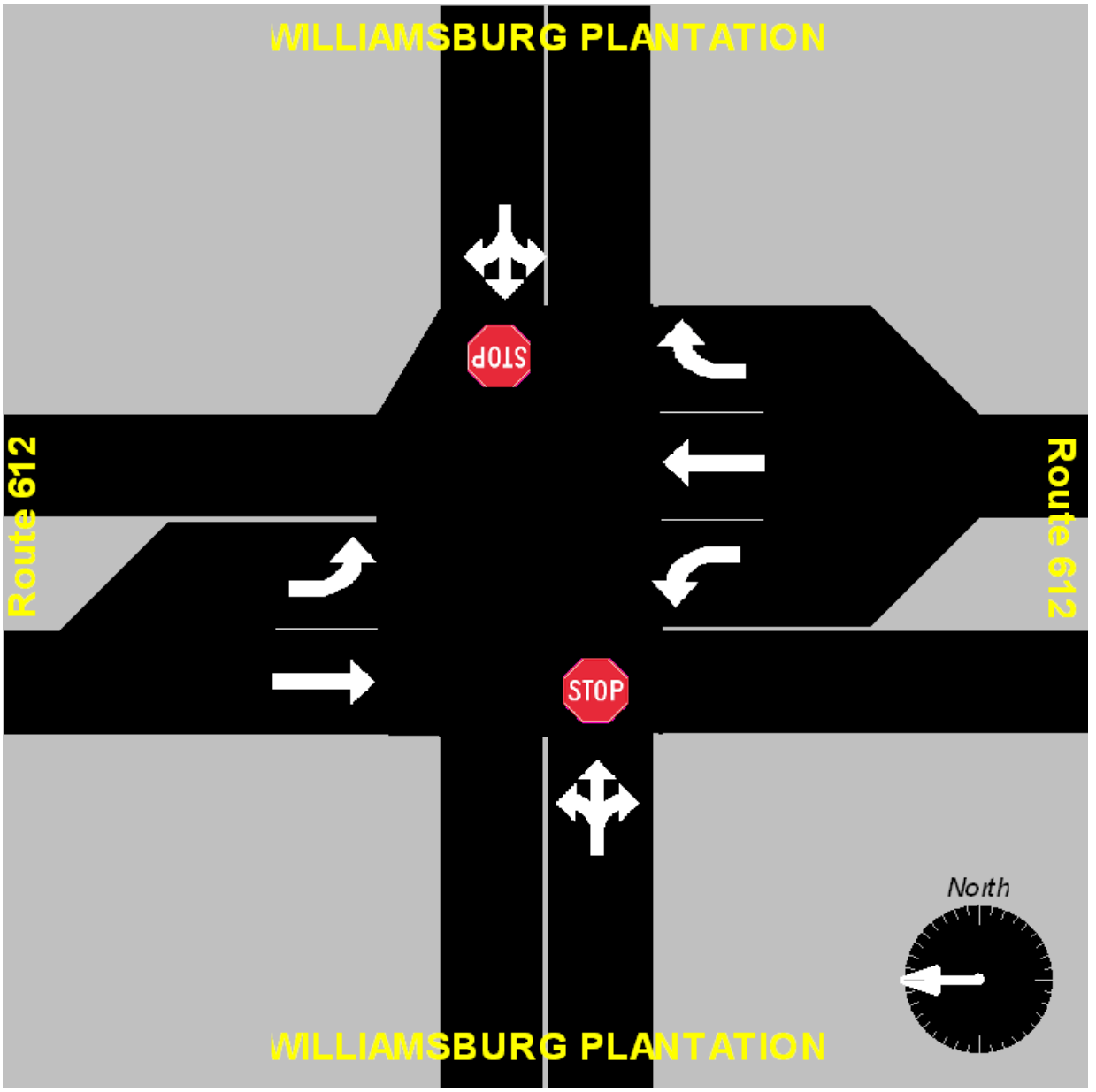
	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:45 PM											
04:45 PM	0	2	2	0	263	263	0	175	1	176	441
05:00 PM	**7**	3	10	2	268	270	**1**	**206**	1	**208**	**488**
05:15 PM	7	4	**11**	3	**273**	**276**	0	183	1	184	471
05:30 PM	4	**6**	10	**4**	238	242	0	189	**2**	191	443
Total Volume	18	15	33	9	1042	1051	1	753	5	759	1843
% App. Total	54.5	45.5		0.9	99.1		0.1	99.2	0.7		
PHF	.643	.625	.750	.563	.954	.952	.250	.914	.625	.912	.944
PC	18	15	33	9	1041	1050	1	750	5	756	1839
% PC	100	100	100	100	99.9	99.9	100	99.6	100	99.6	99.8
HV	0	0	0	0	1	1	0	3	0	3	4
% HV	0	0	0	0	0.1	0.1	0	0.4	0	0.4	0.2



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 6



VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 1

Groups Printed- PC

	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	24	2	21	1	48	19	44	0	0	63	6	3	0	0	9	1	87	21	0	109	229
07:15 AM	19	0	18	0	37	12	49	2	0	63	9	0	1	0	10	0	123	35	0	158	268
07:30 AM	32	0	26	0	58	20	63	2	0	85	11	3	0	0	14	0	124	32	0	156	313
07:45 AM	25	0	33	0	58	36	63	3	0	102	14	2	6	0	22	3	131	34	0	168	350
Total	100	2	98	1	201	87	219	7	0	313	40	8	7	0	55	4	465	122	0	591	1160
08:00 AM	24	0	26	0	50	50	64	0	0	114	7	2	2	0	11	1	134	51	0	186	361
08:15 AM	34	1	44	0	79	38	66	2	0	106	8	3	0	0	11	0	150	36	0	186	382
08:30 AM	27	0	20	0	47	49	75	0	0	124	14	3	0	0	17	0	128	33	0	161	349
08:45 AM	42	2	55	0	99	53	116	9	0	178	16	5	2	0	23	0	146	46	0	192	492
Total	127	3	145	0	275	190	321	11	0	522	45	13	4	0	62	1	558	166	0	725	1584
09:00 AM	31	2	44	0	77	50	78	6	0	134	6	1	6	0	13	0	156	41	0	197	421
09:15 AM	31	0	44	0	75	40	76	7	0	123	17	3	1	0	21	2	136	54	0	192	411
09:30 AM	37	1	49	0	87	44	55	6	0	105	15	2	1	0	18	0	103	38	0	141	351
09:45 AM	41	1	42	0	84	71	61	1	0	133	8	0	0	0	8	5	131	35	0	171	396
Total	140	4	179	0	323	205	270	20	0	495	46	6	8	0	60	7	526	168	0	701	1579
10:00 AM	41	3	70	0	114	63	71	3	0	137	7	5	2	0	14	2	104	35	0	141	406
10:15 AM	28	3	50	0	81	41	75	2	0	118	3	6	0	0	9	0	111	38	0	149	357
10:30 AM	32	2	56	0	90	42	66	3	0	111	6	3	1	0	10	0	107	41	0	148	359
10:45 AM	24	2	47	0	73	55	84	8	0	147	8	7	2	0	17	2	105	41	0	148	385
Total	125	10	223	0	358	201	296	16	0	513	24	21	5	0	50	4	427	155	0	586	1507
11:00 AM	29	2	58	0	89	43	80	2	0	125	1	1	2	0	4	0	108	33	0	141	359
11:15 AM	23	3	67	0	93	31	81	5	1	118	7	3	1	0	11	0	87	33	0	120	342
11:30 AM	45	0	40	0	85	54	101	7	0	162	6	2	1	0	9	1	95	41	0	137	393
11:45 AM	43	1	58	0	102	51	113	6	0	170	7	2	0	0	9	0	99	41	0	140	421
Total	140	6	223	0	369	179	375	20	1	575	21	8	4	0	33	1	389	148	0	538	1515
12:00 PM	36	3	50	0	89	59	110	3	0	172	5	5	1	0	11	3	111	50	0	164	436
12:15 PM	34	2	59	0	95	42	85	11	0	138	9	6	0	0	15	0	93	40	0	133	381
12:30 PM	43	7	46	0	96	55	96	7	0	158	9	3	1	0	13	2	98	42	0	142	409
12:45 PM	40	7	64	0	111	50	88	6	0	144	14	5	1	0	20	0	102	43	0	145	420
Total	153	19	219	0	391	206	379	27	0	612	37	19	3	0	59	5	404	175	0	584	1646
01:00 PM	49	5	54	0	108	56	96	9	0	161	12	2	1	0	15	2	89	41	0	132	416
01:15 PM	49	6	66	0	121	61	88	7	0	156	11	3	0	0	14	0	93	46	0	139	430
01:30 PM	50	2	69	0	121	59	92	15	0	166	15	2	0	0	17	1	82	35	0	118	422
01:45 PM	47	3	58	0	108	67	104	2	0	173	5	2	2	0	9	0	116	42	0	158	448
Total	195	16	247	0	458	243	380	33	0	656	43	9	3	0	55	3	380	164	0	547	1716
02:00 PM	47	3	59	0	109	42	89	9	0	140	9	2	2	0	13	0	86	38	0	124	386
02:15 PM	67	3	62	0	132	40	111	8	0	159	6	2	1	0	9	1	93	31	0	125	425
02:30 PM	51	1	56	0	108	55	116	5	0	176	9	1	2	0	12	1	105	46	0	152	448
02:45 PM	44	3	53	0	100	60	116	6	0	182	8	1	1	0	10	0	88	43	0	131	423
Total	209	10	230	0	449	197	432	28	0	657	32	6	6	0	44	2	372	158	0	532	1682
03:00 PM	52	0	54	0	106	59	105	7	0	171	6	0	1	0	7	2	107	43	0	152	436
03:15 PM	45	2	62	0	109	52	95	9	0	156	2	2	2	0	6	2	94	40	0	136	407
03:30 PM	56	0	64	0	120	47	115	9	0	171	8	2	1	0	11	0	98	40	0	138	440
03:45 PM	50	2	63	0	115	37	132	14	0	183	7	2	1	0	10	1	93	55	0	149	457
Total	203	4	243	0	450	195	447	39	0	681	23	6	5	0	34	5	392	178	0	575	1740

VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 2

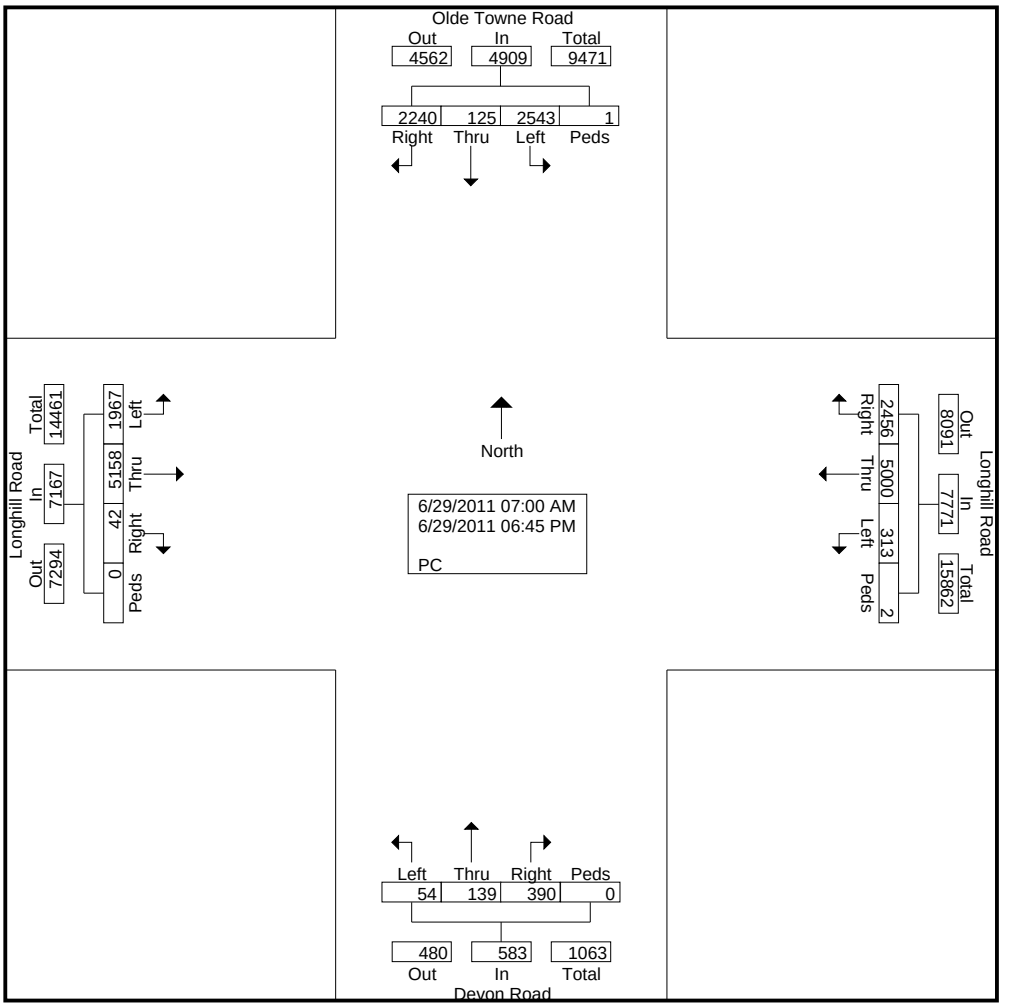
Groups Printed- PC

	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	58	3	51	0	112	59	147	9	0	215	6	5	0	0	11	1	88	38	0	127	465
04:15 PM	47	1	61	0	109	47	150	6	0	203	5	1	0	0	6	1	97	41	0	139	457
04:30 PM	63	5	71	0	139	56	148	8	0	212	9	5	1	0	15	0	96	36	0	132	498
04:45 PM	59	5	70	0	134	67	145	12	0	224	7	6	0	0	13	1	130	50	0	181	552
Total	227	14	253	0	494	229	590	35	0	854	27	17	1	0	45	3	411	165	0	579	1972
05:00 PM	94	3	96	0	193	50	199	5	0	254	3	5	2	0	10	0	113	50	0	163	620
05:15 PM	87	1	59	0	147	89	186	9	0	284	9	5	1	0	15	2	125	44	0	171	617
05:30 PM	106	3	55	0	164	63	190	15	0	268	5	1	1	0	7	2	113	42	0	157	596
05:45 PM	62	3	51	0	116	70	173	10	0	253	11	2	1	0	14	0	115	63	0	178	561
Total	349	10	261	0	620	272	748	39	0	1059	28	13	5	0	46	4	466	199	0	669	2394
06:00 PM	81	2	79	0	162	63	136	8	0	207	3	1	0	0	4	0	82	44	0	126	499
06:15 PM	69	9	49	0	127	75	165	12	0	252	7	5	1	0	13	1	99	33	0	133	525
06:30 PM	58	9	50	0	117	60	122	8	0	190	8	5	1	0	14	0	80	43	0	123	444
06:45 PM	64	7	44	0	115	54	120	10	1	185	6	2	1	0	9	2	107	49	0	158	467
Total	272	27	222	0	521	252	543	38	1	834	24	13	3	0	40	3	368	169	0	540	1935
Grand Total	2240	125	2543	1	4909	2456	5000	313	2	7771	390	139	54	0	583	42	5158	1967	0	7167	20430
Apprch %	45.6	2.5	51.8	0		31.6	64.3	4	0		66.9	23.8	9.3	0		0.6	72	27.4	0		
Total %	11	0.6	12.4	0	24	12	24.5	1.5	0	38	1.9	0.7	0.3	0	2.9	0.2	25.2	9.6	0	35.1	

VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 3

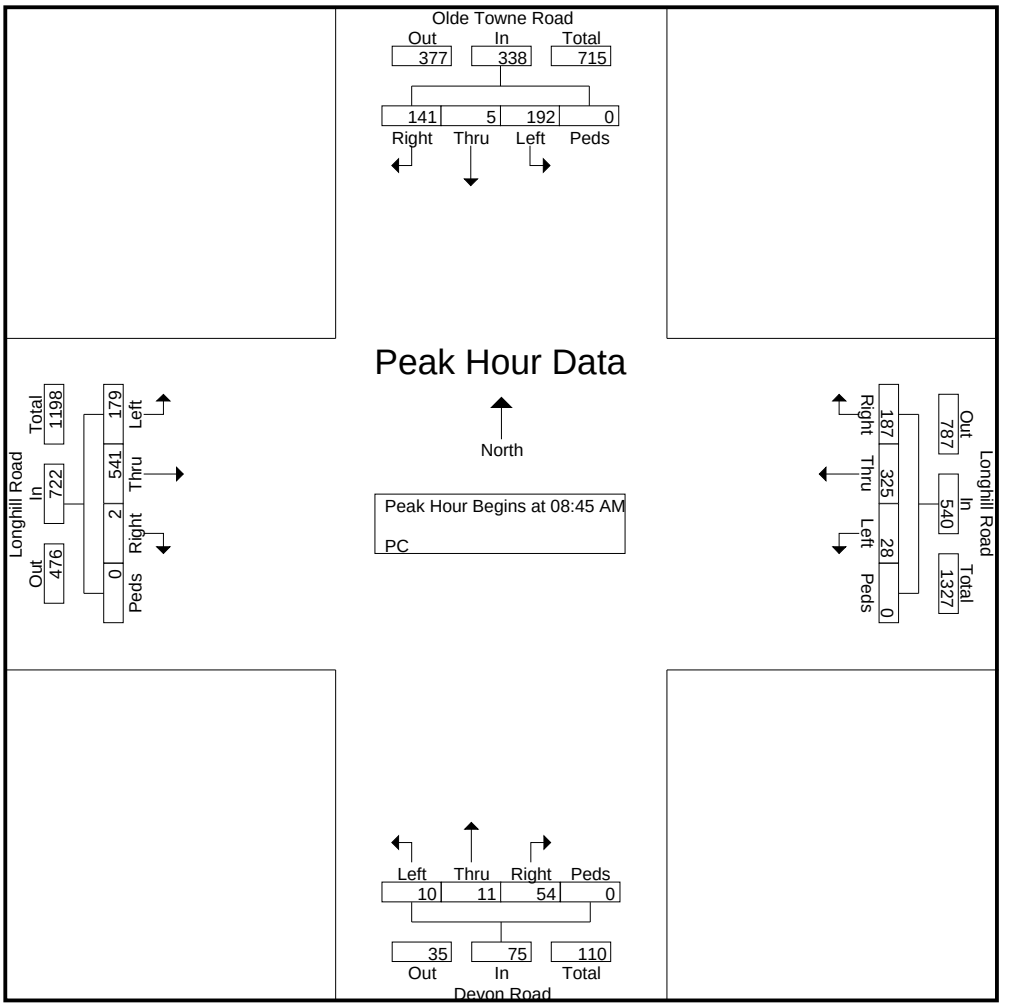


VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 4

	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:45 AM																					
08:45 AM	**42**	**2**	**55**	0	**99**	**53**	**116**	**9**	0	**178**	16	**5**	2	0	**23**	0	146	46	0	192	**492**
09:00 AM	31	2	44	0	77	50	78	6	0	134	6	1	**6**	0	13	0	**156**	41	0	**197**	421
09:15 AM	31	0	44	0	75	40	76	7	0	123	**17**	3	1	0	21	**2**	136	**54**	0	192	411
09:30 AM	37	1	49	0	87	44	55	6	0	105	15	2	1	0	18	0	103	38	0	141	351
Total Volume	141	5	192	0	338	187	325	28	0	540	54	11	10	0	75	2	541	179	0	722	1675
% App. Total	41.7	1.5	56.8	0		34.6	60.2	5.2	0		72	14.7	13.3	0		0.3	74.9	24.8	0		
PHF	.839	.625	.873	.000	.854	.882	.700	.778	.000	.758	.794	.550	.417	.000	.815	.250	.867	.829	.000	.916	.851

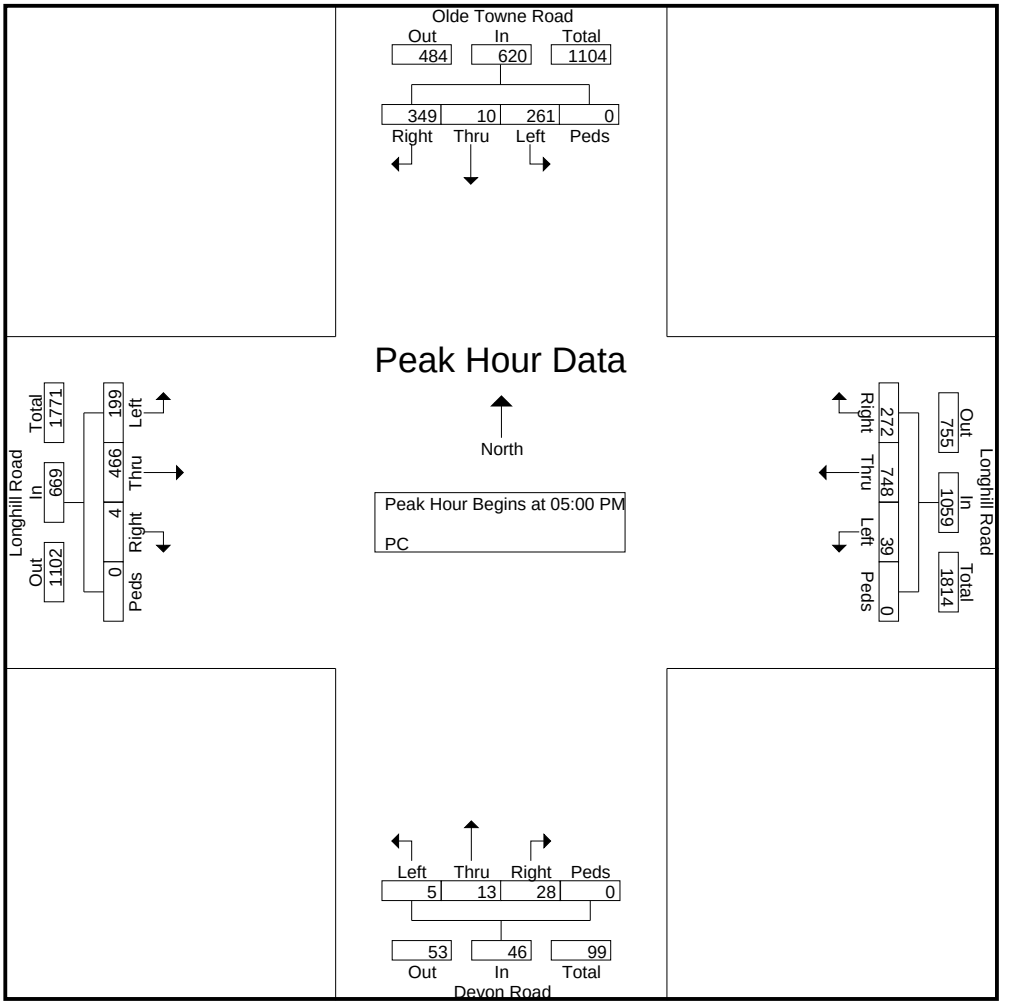


VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 5

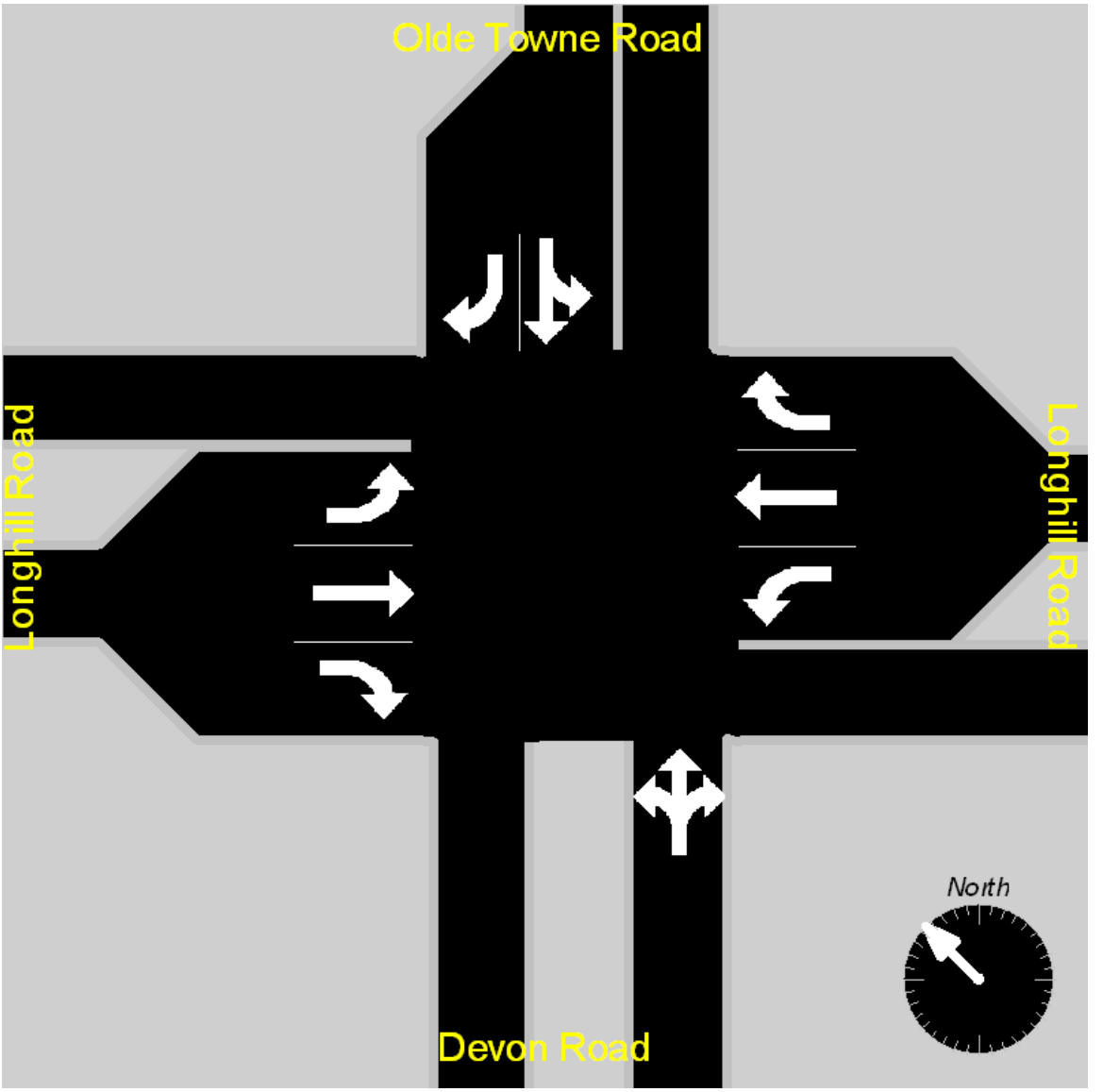
	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	94	**3**	**96**	0	**193**	50	**199**	5	0	254	3	**5**	**2**	0	10	0	113	50	0	163	**620**
05:15 PM	87	1	59	0	147	**89**	186	9	0	**284**	9	5	1	0	**15**	**2**	**125**	44	0	171	617
05:30 PM	**106**	3	55	0	164	63	190	**15**	0	268	5	1	1	0	7	2	113	42	0	157	596
05:45 PM	62	3	51	0	116	70	173	10	0	253	**11**	2	1	0	14	0	115	**63**	0	**178**	561
Total Volume	349	10	261	0	620	272	748	39	0	1059	28	13	5	0	46	4	466	199	0	669	2394
% App. Total	56.3	1.6	42.1	0		25.7	70.6	3.7	0		60.9	28.3	10.9	0		0.6	69.7	29.7	0		
PHF	.823	.833	.680	.000	.803	.764	.940	.650	.000	.932	.636	.650	.625	.000	.767	.500	.932	.790	.000	.940	.965



VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 6



VDOT
Eastern Region
Traffic Engineering

Signal Warrants - Summary

Major Street Approaches

Northbound: **SR 612**
Number of Lanes: **2**
85% Speed > 40 MPH.
Total Approach Volume: **4,421**

Southbound: **SR 612**
Number of Lanes: **2**
85% Speed > 40 MPH.
Total Approach Volume: **5,207**

Minor Street Approaches

Eastbound: **SR 1530**
Number of Lanes: **1**

Total Approach Volume: **1,176**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Eight Hour Vehicular Volumes ..... **Satisfied**

Warrant 1A - Minimum Vehicular Volume .....**Not Satisfied**
Required volumes reached for 4 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic .....**Satisfied**
Required volumes reached for 10 hours, 8 are needed

Warrant 1 A&B - Combination of Warrants .....**Satisfied**
Required volumes reached for 8 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... **Satisfied**
Number of hours (9) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour ..... **Satisfied**

Warrant 3A - Peak Hour Delay .....**Satisfied**
Number of hours (13) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes .....**Satisfied**
Volumes exceed minimums for at least one hour.

Warrant 4 - Pedestrian Volumes ..... **Not Evaluated**

Warrant 5 - School Crossing ..... **Not Evaluated**

Warrant 6 - Coordinated Signal System ..... **Not Evaluated**

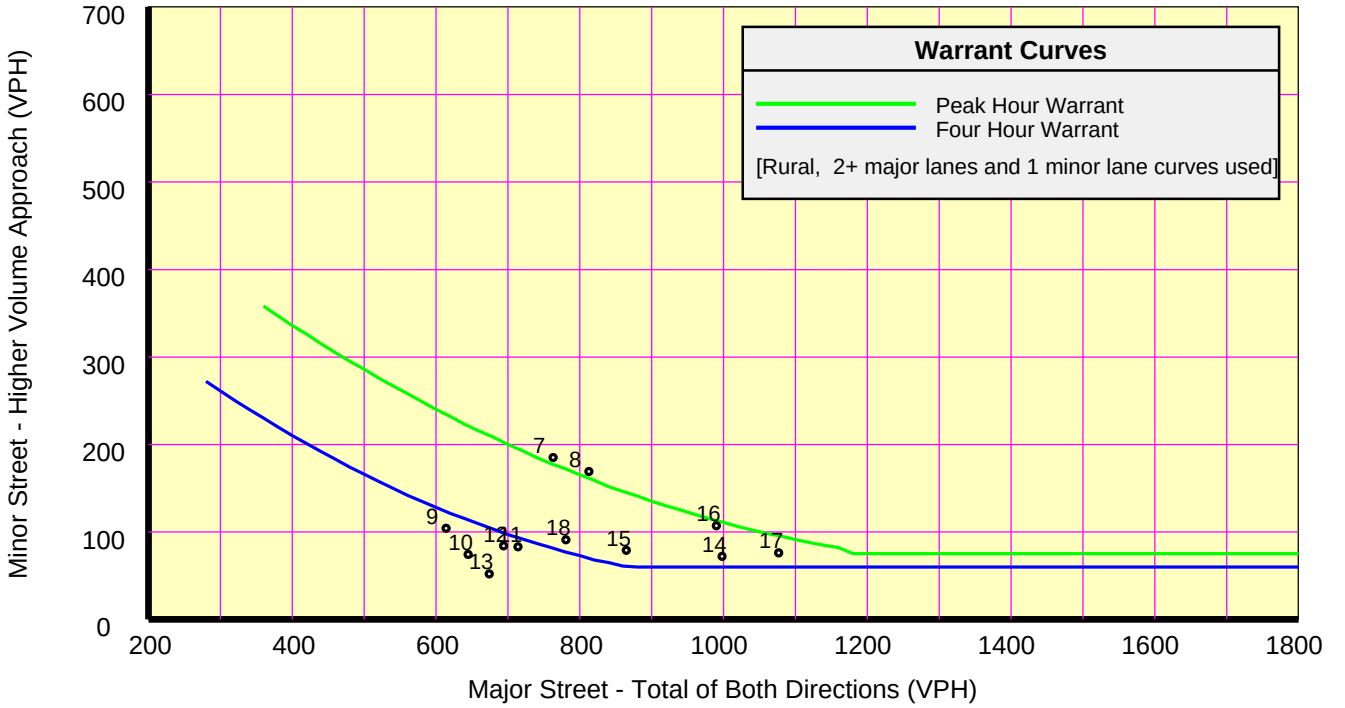
Warrant 7 - Crash Experience ..... **Not Satisfied**
Number of accidents (0) is less than minimum (5). Volume minimums are met.

Warrant 8 - Roadway Network ..... **Not Evaluated**

Warrant 9 - Intersection Near a Grade Crossing ..... **Not Evaluated**

VDOT
Eastern Region
Traffic Engineering

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

War 1A-Minimum Volume

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 420	Min 105
16:00	990	107	EB	Yes	Yes
07:45	785	177	EB	Yes	Yes
08:45	697	122	EB	Yes	Yes
06:45	581	136	EB	Yes	Yes
17:00	1,077	76	EB	Yes	No
14:15	1,038	83	EB	Yes	No
17:15	1,035	80	EB	Yes	No
14:00	998	72	EB	Yes	No
14:30	980	79	EB	Yes	No
15:45	943	102	EB	Yes	No
17:30	922	83	EB	Yes	No
15:30	916	95	EB	Yes	No
14:45	904	89	EB	Yes	No
15:15	877	81	EB	Yes	No
13:45	869	57	EB	Yes	No
15:00	865	79	EB	Yes	No
17:45	858	91	EB	Yes	No
18:00	781	91	EB	Yes	No
13:30	757	51	EB	Yes	No
11:30	741	88	EB	Yes	No
11:15	741	84	EB	Yes	No
11:45	723	87	EB	Yes	No
12:45	720	60	EB	Yes	No
12:15	720	84	EB	Yes	No

War 1B-Interruption of Traffic

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 630	Min 53
16:45	1,097	75	EB	Yes	Yes
15:45	943	102	EB	Yes	Yes
14:45	904	89	EB	Yes	Yes
13:45	869	57	EB	Yes	Yes
17:45	858	91	EB	Yes	Yes
08:00	813	169	EB	Yes	Yes
07:00	763	185	EB	Yes	Yes
11:00	714	83	EB	Yes	Yes
12:00	694	84	EB	Yes	Yes
10:00	645	74	EB	Yes	Yes
13:30	757	51	EB	Yes	No
13:00	674	52	EB	Yes	No
13:15	662	46	EB	Yes	No
09:30	621	82	EB	No	Yes
09:00	614	104	EB	No	Yes
09:15	602	86	EB	No	Yes
09:45	598	75	EB	No	Yes
06:45	581	136	EB	No	Yes
06:30	408	79	EB	No	Yes
06:15	252	37	EB	No	No
18:45	156	24	EB	No	No
22:45	0	0	W	No	No
22:30	0	0	W	No	No
22:15	0	0	W	No	No

War 1C-Combination of Warrants

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 504	Min 84
15:45	943	102	EB	Yes	Yes
14:45	904	89	EB	Yes	Yes
17:45	858	91	EB	Yes	Yes
07:45	785	177	EB	Yes	Yes
11:15	741	84	EB	Yes	Yes
12:15	720	84	EB	Yes	Yes
08:45	697	122	EB	Yes	Yes
06:45	581	136	EB	Yes	Yes
16:45	1,097	75	EB	Yes	No
17:00	1,077	76	EB	Yes	No
14:15	1,038	83	EB	Yes	No
17:15	1,035	80	EB	Yes	No
14:00	998	72	EB	Yes	No
14:30	980	79	EB	Yes	No
17:30	922	83	EB	Yes	No
13:45	869	57	EB	Yes	No
13:30	757	51	EB	Yes	No
11:00	714	83	EB	Yes	No
10:45	697	81	EB	Yes	No
10:30	665	74	EB	Yes	No
13:15	662	46	EB	Yes	No
10:00	645	74	EB	Yes	No
10:15	638	75	EB	Yes	No
09:45	598	75	EB	Yes	No

VDOT
Eastern Region
Traffic Engineering

File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 1

Groups Printed- PC - HV

	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	1	4	0	5	6	19	0	25	25	2	0	27	57
06:15 AM	3	0	0	3	11	34	0	45	33	1	0	34	82
06:30 AM	1	3	0	4	30	34	0	64	37	5	0	42	110
06:45 AM	11	13	0	24	119	63	0	182	80	40	0	120	326
Total	16	20	0	36	166	150	0	316	175	48	0	223	575
07:00 AM	19	59	0	78	122	55	0	177	74	58	0	132	387
07:15 AM	13	26	0	39	15	66	0	81	74	5	0	79	199
07:30 AM	2	4	0	6	7	77	0	84	100	4	0	104	194
07:45 AM	1	5	0	6	6	91	0	97	123	2	0	125	228
Total	35	94	0	129	150	289	0	439	371	69	0	440	1008
08:00 AM	1	4	0	5	5	92	0	97	98	4	0	102	204
08:15 AM	2	4	0	6	9	97	0	106	92	3	0	95	207
08:30 AM	3	4	0	7	8	103	0	111	129	4	0	133	251
08:45 AM	3	13	0	16	11	97	0	108	136	3	0	139	263
Total	9	25	0	34	33	389	0	422	455	14	0	469	925
09:00 AM	2	5	0	7	5	67	0	72	85	5	0	90	169
09:15 AM	3	7	0	10	6	78	0	84	84	5	0	89	183
09:30 AM	5	10	0	15	3	61	0	64	88	2	0	90	169
09:45 AM	0	4	0	4	5	78	0	83	69	2	0	71	158
Total	10	26	0	36	19	284	0	303	326	14	0	340	679
10:00 AM	1	9	0	10	8	63	0	71	74	2	0	76	157
10:15 AM	6	10	0	16	9	75	0	84	68	2	0	70	170
10:30 AM	3	5	0	8	9	63	0	72	59	1	0	60	140
10:45 AM	3	5	0	8	16	65	0	81	71	6	0	77	166
Total	13	29	0	42	42	266	0	308	272	11	0	283	633
11:00 AM	1	8	0	9	9	67	0	76	73	3	0	76	161
11:15 AM	2	4	0	6	8	70	0	78	73	5	0	78	162
11:30 AM	1	7	0	8	2	92	0	94	84	0	0	84	186
11:45 AM	0	1	0	1	3	67	0	70	72	0	0	72	143
Total	4	20	0	24	22	296	0	318	302	8	0	310	652
12:00 PM	1	2	0	3	5	87	0	92	104	1	0	105	200
12:15 PM	2	8	0	10	2	83	0	85	77	1	0	78	173
12:30 PM	0	2	0	2	9	57	0	66	82	1	0	83	151
12:45 PM	8	12	0	20	11	77	0	88	72	4	0	76	184
Total	11	24	0	35	27	304	0	331	335	7	0	342	708
01:00 PM	1	8	0	9	5	61	0	66	81	2	0	83	158
01:15 PM	4	7	0	11	5	77	0	82	68	1	0	69	162
01:30 PM	2	6	0	8	7	75	0	82	69	3	0	72	162
01:45 PM	4	7	0	11	12	75	0	87	73	4	0	77	175
Total	11	28	0	39	29	288	0	317	291	10	0	301	657
02:00 PM	14	26	0	40	20	70	0	90	61	8	0	69	199
02:15 PM	15	55	0	70	30	89	0	119	81	10	0	91	280
02:30 PM	29	81	0	110	13	89	0	102	74	3	0	77	289
02:45 PM	5	21	0	26	12	116	0	128	87	3	0	90	244
Total	63	183	0	246	75	364	0	439	303	24	0	327	1012

VDOT
Eastern Region
Traffic Engineering

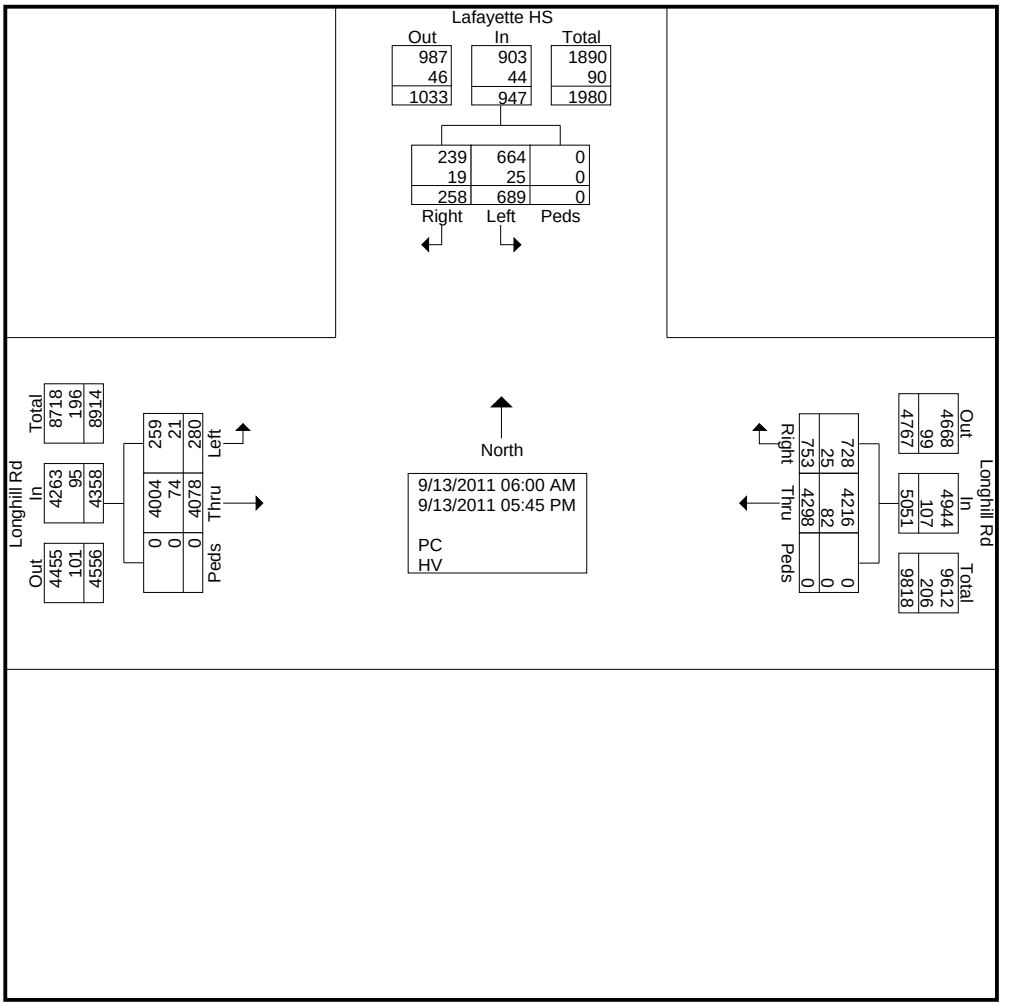
File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 2

Groups Printed- PC - HV

	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	6	20	0	26	11	111	0	122	92	6	0	98	246
03:15 PM	4	11	0	15	5	86	0	91	96	4	0	100	206
03:30 PM	5	15	0	20	10	114	0	124	101	3	0	104	248
03:45 PM	6	18	0	24	13	134	0	147	77	4	0	81	252
Total	21	64	0	85	39	445	0	484	366	17	0	383	952
04:00 PM	4	10	0	14	18	102	0	120	111	7	0	118	252
04:15 PM	12	43	0	55	20	122	0	142	124	7	0	131	328
04:30 PM	12	31	0	43	29	131	0	160	98	9	0	107	310
04:45 PM	13	41	0	54	26	142	0	168	91	9	0	100	322
Total	41	125	0	166	93	497	0	590	424	32	0	456	1212
05:00 PM	11	34	0	45	19	206	0	225	106	7	0	113	383
05:15 PM	2	8	0	10	11	198	0	209	113	13	0	126	345
05:30 PM	6	3	0	9	13	172	0	185	124	4	0	128	322
05:45 PM	5	6	0	11	15	150	0	165	115	2	0	117	293
Total	24	51	0	75	58	726	0	784	458	26	0	484	1343
Grand Total	258	689	0	947	753	4298	0	5051	4078	280	0	4358	10356
Apprch %	27.2	72.8	0		14.9	85.1	0		93.6	6.4	0		
Total %	2.5	6.7	0	9.1	7.3	41.5	0	48.8	39.4	2.7	0	42.1	
PC	239	664	0	903	728	4216	0	4944	4004	259	0	4263	10110
% PC	92.6	96.4	0	95.4	96.7	98.1	0	97.9	98.2	92.5	0	97.8	97.6
HV	19	25	0	44	25	82	0	107	74	21	0	95	246
% HV	7.4	3.6	0	4.6	3.3	1.9	0	2.1	1.8	7.5	0	2.2	2.4

VDOT
Eastern Region
Traffic Engineering

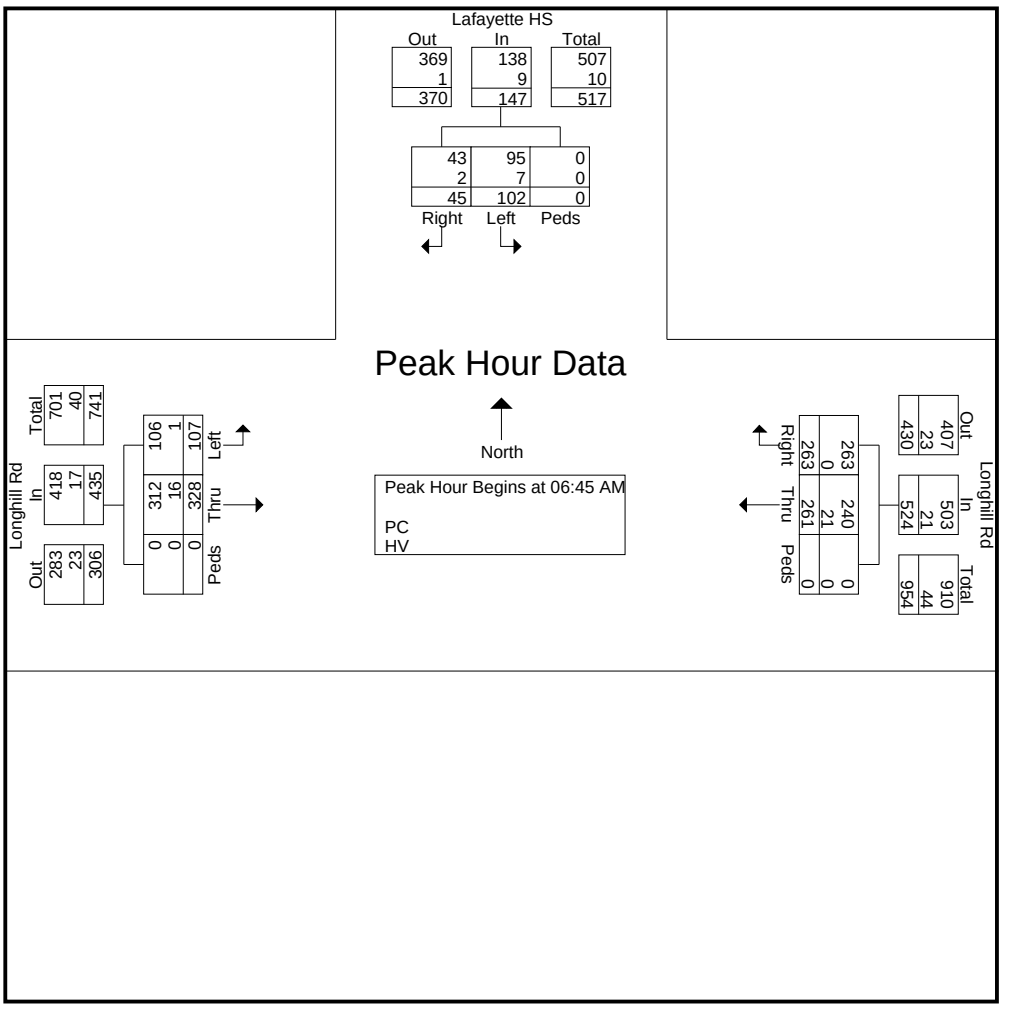
File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 3



VDOT
Eastern Region
Traffic Engineering

File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 4

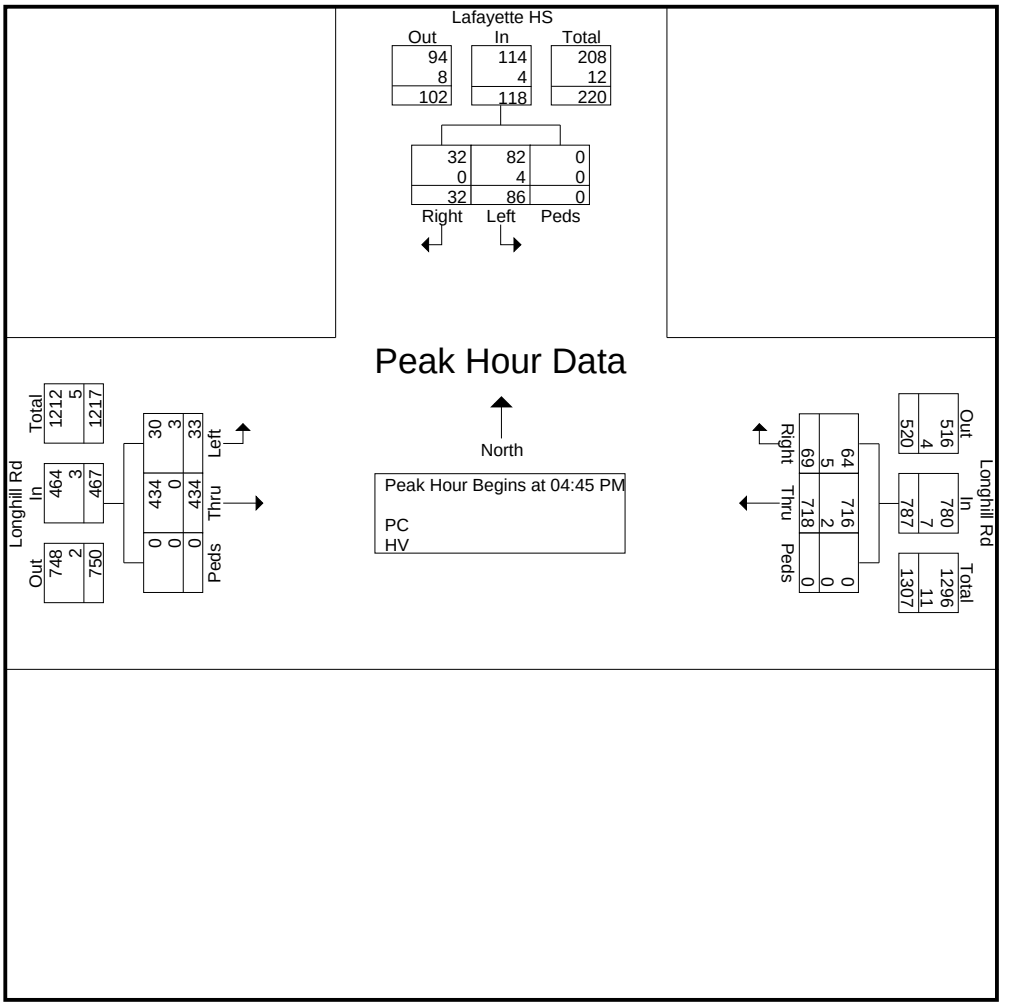
	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 06:45 AM													
06:45 AM	11	13	0	24	119	63	0	**182**	80	40	0	120	326
07:00 AM	**19**	**59**	0	**78**	**122**	55	0	177	74	**58**	0	**132**	**387**
07:15 AM	13	26	0	39	15	66	0	81	74	5	0	79	199
07:30 AM	2	4	0	6	7	**77**	0	84	**100**	4	0	104	194
Total Volume	45	102	0	147	263	261	0	524	328	107	0	435	1106
% App. Total	30.6	69.4	0		50.2	49.8	0		75.4	24.6	0		
PHF	.592	.432	.000	.471	.539	.847	.000	.720	.820	.461	.000	.824	.714
PC	43	95	0	138	263	240	0	503	312	106	0	418	1059
% PC	95.6	93.1	0	93.9	100	92.0	0	96.0	95.1	99.1	0	96.1	95.8
HV	2	7	0	9	0	21	0	21	16	1	0	17	47
% HV	4.4	6.9	0	6.1	0	8.0	0	4.0	4.9	0.9	0	3.9	4.2



VDOT
Eastern Region
Traffic Engineering

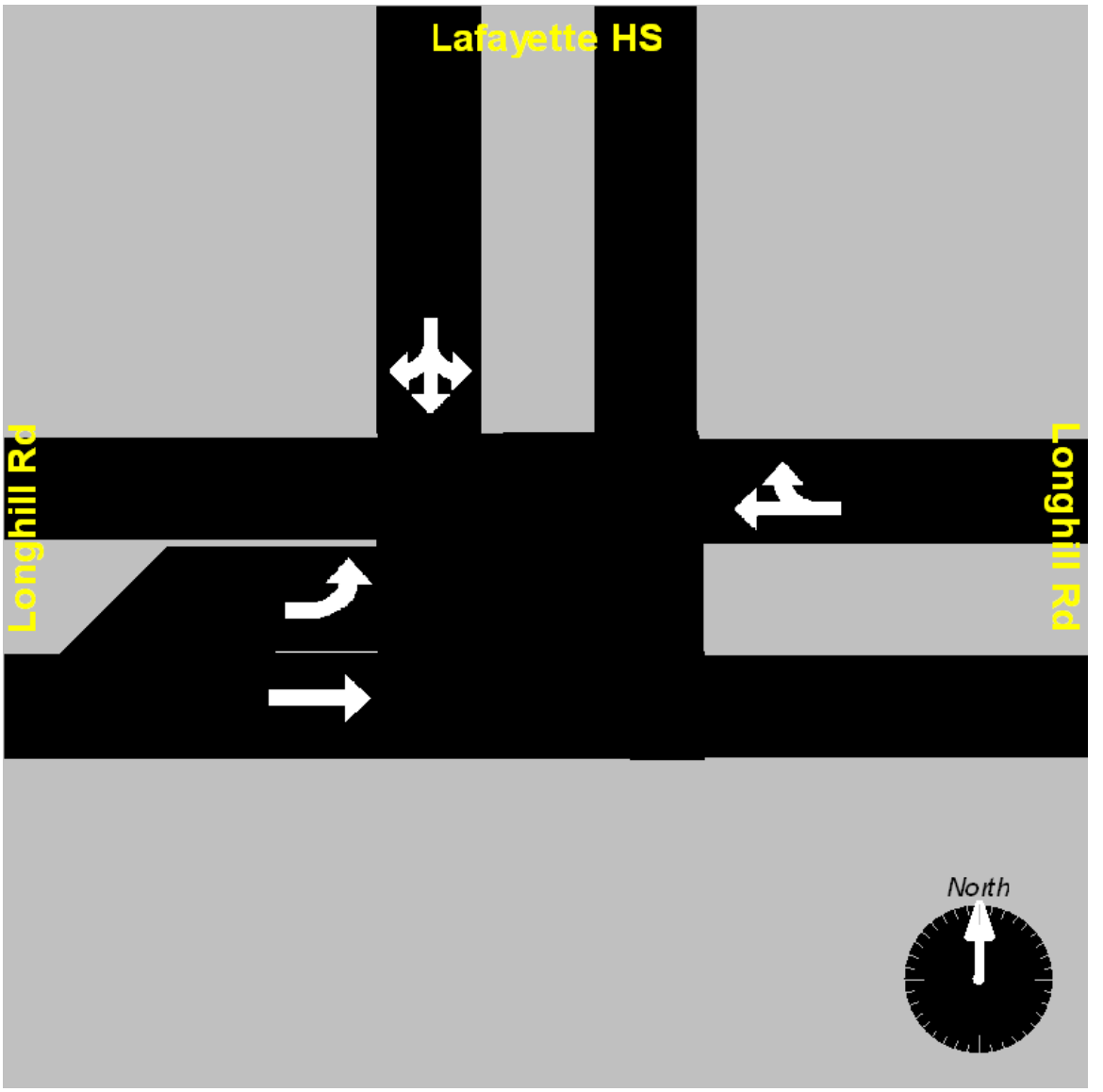
File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 5

	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:15 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	**13**	**41**	0	**54**	**26**	142	0	168	91	9	0	100	322
05:00 PM	11	34	0	45	19	**206**	0	**225**	106	7	0	113	**383**
05:15 PM	2	8	0	10	11	198	0	209	113	**13**	0	126	345
05:30 PM	6	3	0	9	13	172	0	185	**124**	4	0	**128**	322
Total Volume	32	86	0	118	69	718	0	787	434	33	0	467	1372
% App. Total	27.1	72.9	0		8.8	91.2	0		92.9	7.1	0		
PHF	.615	.524	.000	.546	.663	.871	.000	.874	.875	.635	.000	.912	.896
PC	32	82	0	114	64	716	0	780	434	30	0	464	1358
% PC	100	95.3	0	96.6	92.8	99.7	0	99.1	100	90.9	0	99.4	99.0
HV	0	4	0	4	5	2	0	7	0	3	0	3	14
% HV	0	4.7	0	3.4	7.2	0.3	0	0.9	0	9.1	0	0.6	1.0



VDOT
Eastern Region
Traffic Engineering

File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 6



VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 1

Groups Printed- PC - HV

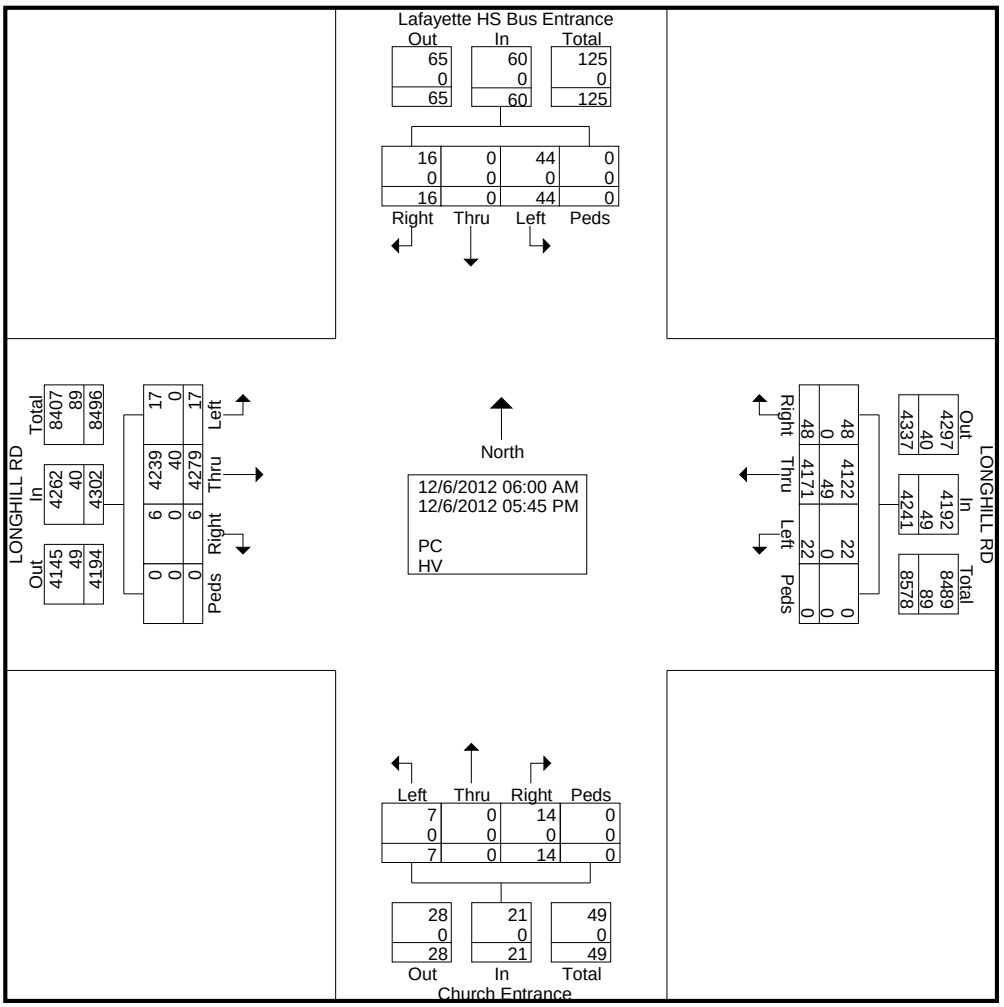
	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	25	0	0	25	43
06:15 AM	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	34	0	0	34	55
06:30 AM	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	55	0	0	55	90
06:45 AM	0	0	0	0	0	16	56	0	0	72	0	0	0	0	0	0	75	1	0	76	148
Total	0	0	0	0	0	16	130	0	0	146	0	0	0	0	0	0	189	1	0	190	336
07:00 AM	6	0	17	0	23	3	58	2	0	63	2	0	0	0	2	0	122	3	0	125	213
07:15 AM	2	0	0	0	2	1	82	0	0	83	0	0	0	0	0	0	78	1	0	79	164
07:30 AM	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	0	103	0	0	103	179
07:45 AM	0	0	0	0	0	0	101	0	0	101	0	0	0	0	0	0	112	0	0	112	213
Total	8	0	17	0	25	4	317	2	0	323	2	0	0	0	2	0	415	4	0	419	769
08:00 AM	0	0	0	0	0	0	77	0	0	77	0	0	0	0	0	0	110	0	0	110	187
08:15 AM	0	0	0	0	0	0	86	2	0	88	0	0	0	0	0	0	80	0	0	80	168
08:30 AM	0	0	0	0	0	0	104	1	0	105	0	0	0	0	0	0	114	0	0	114	219
08:45 AM	0	0	0	0	0	1	83	0	0	84	0	0	0	0	0	0	108	0	0	108	192
Total	0	0	0	0	0	1	350	3	0	354	0	0	0	0	0	0	412	0	0	412	766
09:00 AM	1	0	0	0	1	0	88	0	0	88	1	0	0	0	1	1	90	0	0	91	181
09:15 AM	0	0	0	0	0	0	77	1	0	78	0	0	0	0	0	0	116	0	0	116	194
09:30 AM	0	0	0	0	0	0	69	1	0	70	0	0	0	0	0	0	81	0	0	81	151
09:45 AM	0	0	1	0	1	1	68	0	0	69	0	0	0	0	0	1	89	1	0	91	161
Total	1	0	1	0	2	1	302	2	0	305	1	0	0	0	1	2	376	1	0	379	687
10:00 AM	0	0	0	0	0	1	80	1	0	82	0	0	0	0	0	0	90	0	0	90	172
10:15 AM	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	0	82	0	0	82	158
10:30 AM	0	0	0	0	0	0	73	0	0	73	0	0	1	0	1	1	63	0	0	64	138
10:45 AM	0	0	1	0	1	1	61	1	0	63	0	0	0	0	0	0	77	0	0	77	141
Total	0	0	1	0	1	2	290	2	0	294	0	0	1	0	1	1	312	0	0	313	609
11:00 AM	0	0	1	0	1	1	68	0	0	69	0	0	0	0	0	0	90	0	0	90	160
11:15 AM	0	0	0	0	0	0	72	1	0	73	0	0	0	0	0	0	92	0	0	92	165
11:30 AM	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	0	59	0	0	59	135
11:45 AM	0	0	0	0	0	1	84	0	0	85	0	0	0	0	0	0	84	0	0	84	169
Total	0	0	1	0	1	2	300	1	0	303	0	0	0	0	0	0	325	0	0	325	629
12:00 PM	1	0	1	0	2	0	91	0	0	91	1	0	0	0	1	0	87	1	0	88	182
12:15 PM	0	0	0	0	0	0	73	0	0	73	0	0	0	0	0	0	78	0	0	78	151
12:30 PM	0	0	0	0	0	0	72	0	0	72	0	0	0	0	0	0	60	0	0	60	132
12:45 PM	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	0	84	0	0	84	144
Total	1	0	1	0	2	0	296	0	0	296	1	0	0	0	1	0	309	1	0	310	609
01:00 PM	0	0	1	0	1	0	72	0	0	72	0	0	0	0	0	0	73	0	0	73	146
01:15 PM	0	0	0	0	0	0	77	1	0	78	0	0	0	0	0	0	82	0	0	82	160
01:30 PM	0	0	0	0	0	4	76	1	0	81	1	0	0	0	1	1	101	1	0	103	185
01:45 PM	0	0	2	0	2	1	68	0	0	69	1	0	0	0	1	0	61	1	0	62	134
Total	0	0	3	0	3	5	293	2	0	300	2	0	0	0	2	1	317	2	0	320	625
02:00 PM	0	0	0	0	0	12	95	0	0	107	0	0	0	0	0	0	93	6	0	99	206
02:15 PM	4	0	19	0	23	1	96	7	0	104	1	0	1	0	2	0	88	0	0	88	217
02:30 PM	0	0	0	0	0	2	95	0	0	97	1	0	1	0	2	0	88	0	0	88	187
02:45 PM	0	0	0	0	0	0	107	0	0	107	0	0	0	0	0	0	97	0	0	97	204
Total	4	0	19	0	23	15	393	7	0	415	2	0	2	0	4	0	366	6	0	372	814
03:00 PM	0	0	1	0	1	1	114	0	0	115	2	0	0	0	2	1	87	0	0	88	206
03:15 PM	1	0	0	0	1	0	103	0	0	103	0	0	0	0	0	0	104	0	0	104	208
03:30 PM	1	0	0	0	1	0	132	0	0	132	0	0	1	0	1	0	88	1	0	89	223
03:45 PM	0	0	0	0	0	0	134	0	0	134	1	0	1	0	2	0	106	0	0	106	242
Total	2	0	1	0	3	1	483	0	0	484	3	0	2	0	5	1	385	1	0	387	879

VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 2

Groups Printed- PC - HV

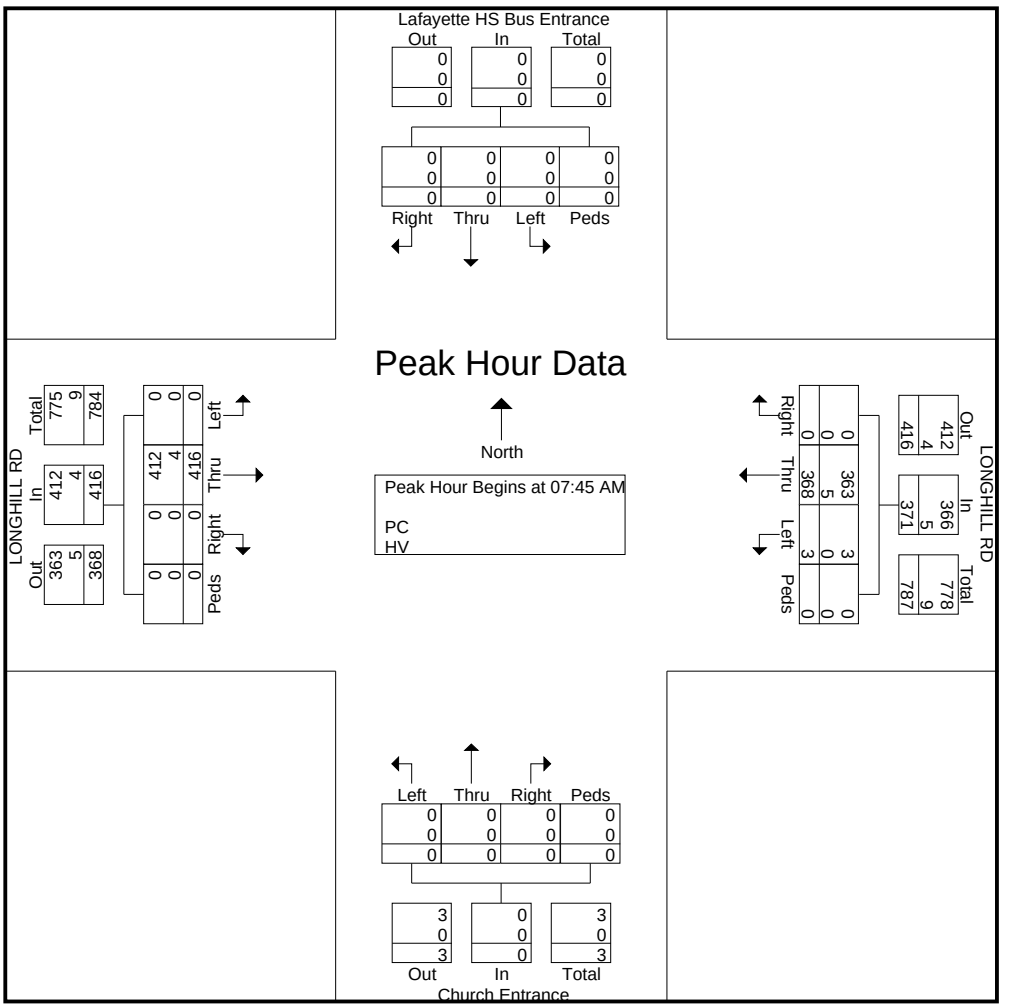
	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	96	0	0	96	0	0	0	0	0	0	105	0	0	105	201
04:15 PM	0	0	0	0	0	1	150	1	0	152	3	0	0	0	3	0	92	0	0	92	247
04:30 PM	0	0	0	0	0	0	112	0	0	112	0	0	1	0	1	0	99	0	0	99	212
04:45 PM	0	0	0	0	0	0	118	1	0	119	0	0	1	0	1	0	138	0	0	138	258
Total	0	0	0	0	0	1	476	2	0	479	3	0	2	0	5	0	434	0	0	434	918
05:00 PM	0	0	0	0	0	0	132	0	0	132	0	0	0	0	0	0	104	0	0	104	236
05:15 PM	0	0	0	0	0	0	147	1	0	148	0	0	0	0	0	1	125	0	0	126	274
05:30 PM	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	0	120	1	0	121	254
05:45 PM	0	0	0	0	0	0	129	0	0	129	0	0	0	0	0	0	90	0	0	90	219
Total	0	0	0	0	0	0	541	1	0	542	0	0	0	0	0	1	439	1	0	441	983
Grand Total	16	0	44	0	60	48	4171	22	0	4241	14	0	7	0	21	6	4279	17	0	4302	8624
Apprch %	26.7	0	73.3	0		1.1	98.3	0.5	0		66.7	0	33.3	0		0.1	99.5	0.4	0		
Total %	0.2	0	0.5	0	0.7	0.6	48.4	0.3	0	49.2	0.2	0	0.1	0	0.2	0.1	49.6	0.2	0	49.9	
PC	16	0	44	0	60	48	4122	22	0	4192	14	0	7	0	21	6	4239	17	0	4262	8535
% PC	100	0	100	0	100	100	98.8	100	0	98.8	100	0	100	0	100	100	99.1	100	0	99.1	99
HV	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	0	40	0	0	40	89
% HV	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0	0.9	0	0	0.9	1



VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 3

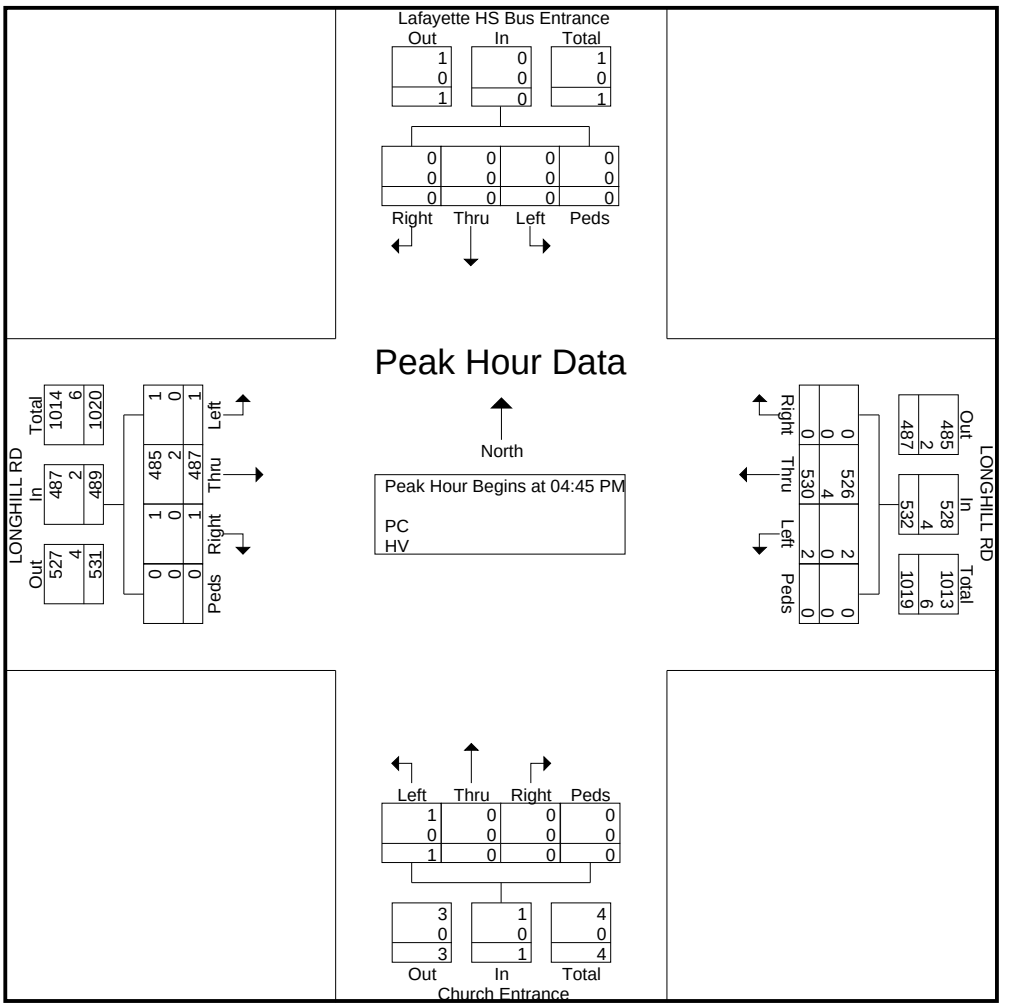
	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	101	0	0	101	0	0	0	0	0	0	112	0	0	112	213
08:00 AM	0	0	0	0	0	0	77	0	0	77	0	0	0	0	0	0	110	0	0	110	187
08:15 AM	0	0	0	0	0	0	86	**2**	0	88	0	0	0	0	0	0	80	0	0	80	168
08:30 AM	0	0	0	0	0	0	**104**	1	0	**105**	0	0	0	0	0	0	**114**	0	0	**114**	**219**
Total Volume	0	0	0	0	0	0	368	3	0	371	0	0	0	0	0	0	416	0	0	416	787
% App. Total	0	0	0	0		0	99.2	0.8	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.885	.375	.000	.883	.000	.000	.000	.000	.000	.000	.912	.000	.000	.912	.898
PC	0	0	0	0	0	0	363	3	0	366	0	0	0	0	0	0	412	0	0	412	778
% PC	0	0	0	0	0	0	98.6	100	0	98.7	0	0	0	0	0	0	99.0	0	0	99.0	98.9
HV	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
% HV	0	0	0	0	0	0	1.4	0	0	1.3	0	0	0	0	0	0	1.0	0	0	1.0	1.1



VDOT
Eastern Region
Traffic Engineering

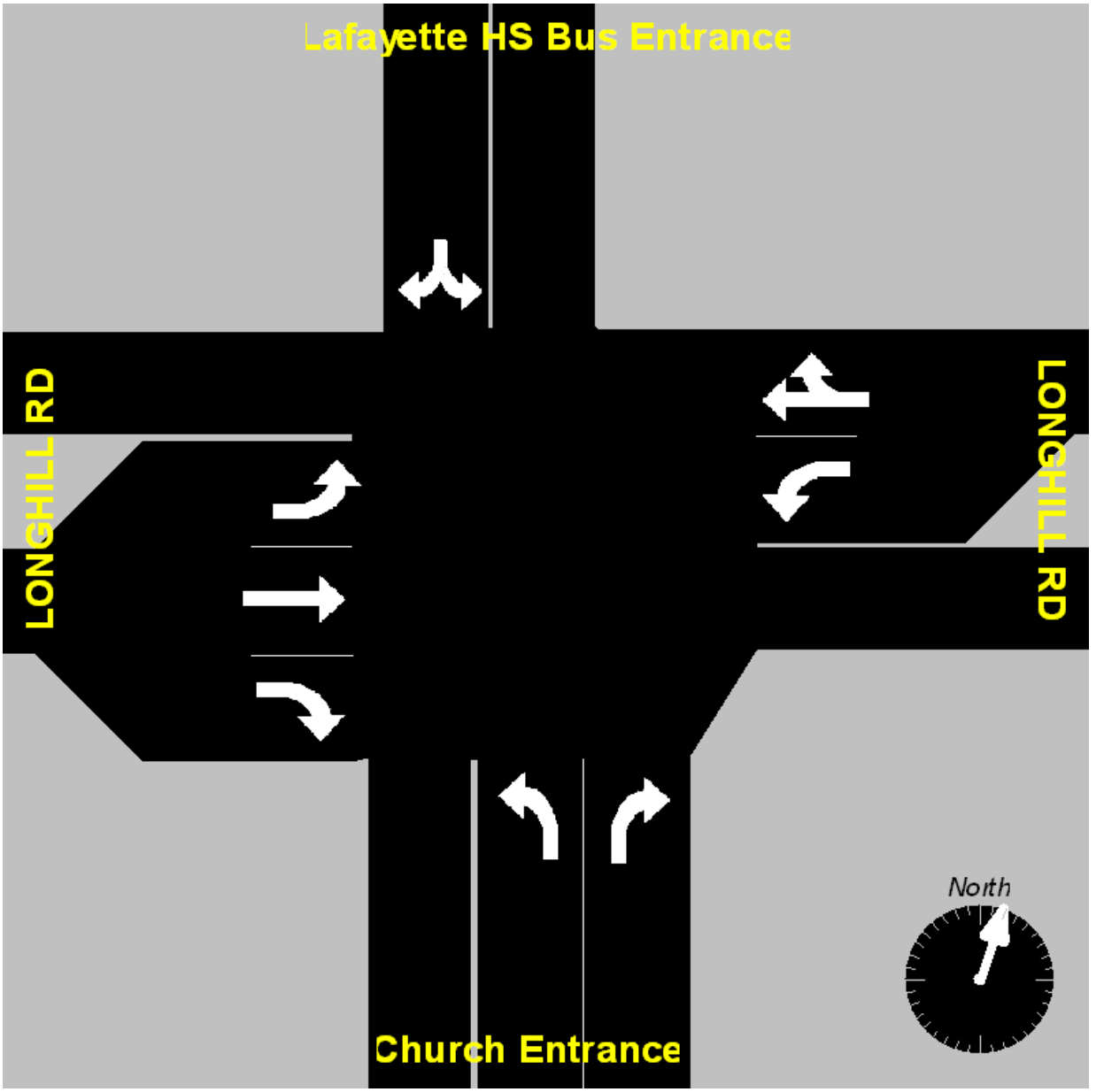
File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 4

	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	118	**1**	0	119	0	0	**1**	0	**1**	0	**138**	0	0	**138**	258
05:00 PM	0	0	0	0	0	0	132	0	0	132	0	0	0	0	0	0	104	0	0	104	236
05:15 PM	0	0	0	0	0	0	**147**	1	0	**148**	0	0	0	0	0	**1**	125	0	0	126	**274**
05:30 PM	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	0	120	**1**	0	121	254
Total Volume	0	0	0	0	0	0	530	2	0	532	0	0	1	0	1	1	487	1	0	489	1022
% App. Total	0	0	0	0		0	99.6	0.4	0		0	0	100	0		0.2	99.6	0.2	0		
PHF	.000	.000	.000	.000	.000	.000	.901	.500	.000	.899	.000	.000	.250	.000	.250	.250	.882	.250	.000	.886	.932
PC	0	0	0	0	0	0	526	2	0	528	0	0	1	0	1	1	485	1	0	487	1016
% PC	0	0	0	0	0	0	99.2	100	0	99.2	0	0	100	0	100	100	99.6	100	0	99.6	99.4
HV	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
% HV	0	0	0	0	0	0	0.8	0	0	0.8	0	0	0	0	0	0	0.4	0	0	0.4	0.6



VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 5



VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 1

Groups Printed- PC - HV

	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	1	0	3	0	82	3	0	85	6	0	17	0	23	7	54	1	0	62	173
07:15 AM	1	0	1	0	2	0	58	9	0	67	2	0	13	0	15	5	68	0	0	73	157
07:30 AM	7	3	3	0	13	1	68	9	0	78	5	0	15	0	20	15	53	1	0	69	180
07:45 AM	10	0	2	0	12	0	77	10	0	87	10	0	23	0	33	15	91	0	0	106	238
Total	20	3	7	0	30	1	285	31	0	317	23	0	68	0	91	42	266	2	0	310	748
08:00 AM	3	1	1	0	5	2	82	8	0	92	6	0	16	0	22	10	60	1	0	71	190
08:15 AM	5	1	2	0	8	0	55	3	0	58	2	1	14	0	17	9	79	0	0	88	171
08:30 AM	6	0	0	0	6	2	108	6	0	116	2	0	15	0	17	15	72	0	0	87	226
08:45 AM	5	0	0	0	5	0	110	8	0	118	6	0	12	0	18	17	69	3	0	89	230
Total	19	2	3	0	24	4	355	25	0	384	16	1	57	0	74	51	280	4	0	335	817
09:00 AM	2	0	0	0	2	0	81	4	0	85	7	0	11	0	18	9	74	0	0	83	188
09:15 AM	4	0	2	0	6	0	74	7	0	81	4	0	7	0	11	9	56	0	0	65	163
09:30 AM	9	0	1	0	10	2	55	3	0	60	3	0	6	0	9	11	54	1	0	66	145
09:45 AM	7	1	4	0	12	0	82	2	0	84	2	0	8	0	10	9	70	3	0	82	188
Total	22	1	7	0	30	2	292	16	0	310	16	0	32	0	48	38	254	4	0	296	684
10:00 AM	4	0	0	0	4	1	58	1	0	60	5	2	8	0	15	11	43	2	0	56	135
10:15 AM	6	0	2	0	8	1	53	3	0	57	2	0	9	0	11	7	52	3	0	62	138
10:30 AM	3	1	2	0	6	1	69	4	0	74	2	1	6	0	9	14	41	1	0	56	145
10:45 AM	3	0	2	0	5	0	60	0	0	60	4	0	7	0	11	6	46	4	0	56	132
Total	16	1	6	0	23	3	240	8	0	251	13	3	30	0	46	38	182	10	0	230	550
11:00 AM	1	0	1	0	2	0	51	1	0	52	2	0	5	0	7	12	50	6	0	68	129
11:15 AM	2	0	0	0	2	0	53	5	0	58	7	0	16	0	23	8	55	3	0	66	149
11:30 AM	4	0	1	0	5	1	66	0	0	67	5	0	11	0	16	6	42	2	0	50	138
11:45 AM	2	0	2	0	4	1	62	2	0	65	2	0	6	0	8	12	82	7	0	101	178
Total	9	0	4	0	13	2	232	8	0	242	16	0	38	0	54	38	229	18	0	285	594
12:00 PM	4	0	0	0	4	2	59	2	0	63	1	1	9	0	11	6	59	4	0	69	147
12:15 PM	2	1	0	0	3	5	64	3	0	72	2	0	11	0	13	7	75	1	0	83	171
12:30 PM	5	0	2	0	7	2	69	3	0	74	2	0	8	0	10	7	48	4	0	59	150
12:45 PM	9	0	0	0	9	1	68	0	0	69	0	0	8	0	8	3	74	1	0	78	164
Total	20	1	2	0	23	10	260	8	0	278	5	1	36	0	42	23	256	10	0	289	632
01:00 PM	7	0	0	0	7	0	58	0	0	58	1	0	3	0	4	7	54	6	0	67	136
01:15 PM	2	0	0	0	2	2	63	3	0	68	1	0	5	0	6	9	71	4	0	84	160
01:30 PM	4	0	1	0	5	2	71	4	0	77	8	0	6	0	14	2	65	9	0	76	172
01:45 PM	4	0	1	0	5	0	82	0	0	82	3	0	4	0	7	5	66	2	0	73	167
Total	17	0	2	0	19	4	274	7	0	285	13	0	18	0	31	23	256	21	0	300	635
02:00 PM	5	0	1	0	6	2	78	3	0	83	1	0	8	0	9	3	69	4	0	76	174
02:15 PM	2	0	3	0	5	3	76	0	0	79	7	0	9	0	16	10	95	7	0	112	212
02:30 PM	0	1	1	0	2	1	62	2	0	65	4	0	9	0	13	22	83	5	0	110	190
02:45 PM	4	0	0	0	4	2	76	7	0	85	5	0	9	0	14	12	100	1	0	113	216
Total	11	1	5	0	17	8	292	12	0	312	17	0	35	0	52	47	347	17	0	411	792
03:00 PM	5	0	1	0	6	2	87	9	0	98	4	0	8	0	12	16	92	4	0	112	228
03:15 PM	2	1	2	0	5	4	91	11	0	106	5	1	7	0	13	23	80	5	0	108	232
03:30 PM	3	0	0	0	3	2	81	5	0	88	8	0	5	0	13	22	98	8	0	128	232
03:45 PM	3	0	1	0	4	2	77	5	0	84	9	0	7	0	16	18	108	4	0	130	234
Total	13	1	4	0	18	10	336	30	0	376	26	1	27	0	54	79	378	21	0	478	926
04:00 PM	0	0	0	0	0	1	85	20	0	106	6	0	19	0	25	22	100	6	0	128	259
04:15 PM	4	0	2	0	6	1	71	13	0	85	14	1	17	0	32	27	104	3	0	134	257

VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013

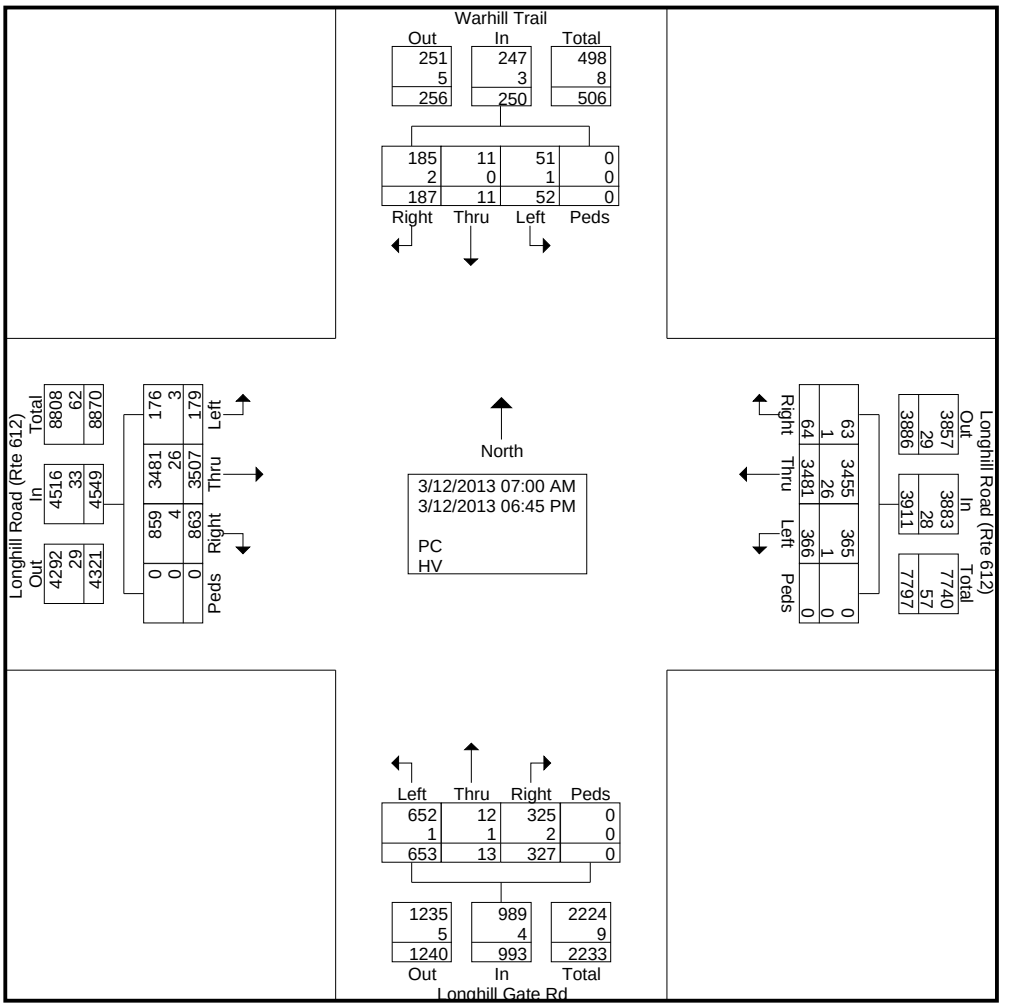
Groups Printed- PC - HV

	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	5	0	2	0	7	0	86	5	0	91	11	0	21	0	32	20	87	5	0	112	242
04:45 PM	4	0	0	0	4	5	93	9	0	107	15	1	18	0	34	27	105	9	0	141	286
Total	13	0	4	0	17	7	335	47	0	389	46	2	75	0	123	96	396	23	0	515	1044
05:00 PM	4	0	2	0	6	3	59	19	0	81	17	0	20	0	37	52	99	8	0	159	283
05:15 PM	2	0	1	0	3	1	90	53	0	144	20	1	28	0	49	68	99	8	0	175	371
05:30 PM	4	0	1	0	5	1	89	20	0	110	14	1	45	0	60	54	95	7	0	156	331
05:45 PM	5	0	1	0	6	3	84	17	0	104	17	1	37	0	55	45	78	6	0	129	294
Total	15	0	5	0	20	8	322	109	0	439	68	3	130	0	201	219	371	29	0	619	1279
06:00 PM	2	0	1	0	3	2	65	13	0	80	21	0	26	0	47	30	76	5	0	111	241
06:15 PM	3	0	1	0	4	1	61	23	0	85	10	0	12	0	22	42	73	5	0	120	231
06:30 PM	0	1	1	0	2	1	67	13	0	81	15	2	25	0	42	53	64	2	0	119	244
06:45 PM	7	0	0	0	7	1	65	16	0	82	22	0	44	0	66	44	79	8	0	131	286
Total	12	1	3	0	16	5	258	65	0	328	68	2	107	0	177	169	292	20	0	481	1002
Grand Total	187	11	52	0	250	64	3481	366	0	3911	327	13	653	0	993	863	3507	179	0	4549	9703
Apprch %	74.8	4.4	20.8	0		1.6	89	9.4	0		32.9	1.3	65.8	0		19	77.1	3.9	0		
Total %	1.9	0.1	0.5	0	2.6	0.7	35.9	3.8	0	40.3	3.4	0.1	6.7	0	10.2	8.9	36.1	1.8	0	46.9	
PC	185	11	51	0	247	63	3455	365	0	3883	325	12	652	0	989	859	3481	176	0	4516	9635
% PC	98.9	100	98.1	0	98.8	98.4	99.3	99.7	0	99.3	99.4	92.3	99.8	0	99.6	99.5	99.3	98.3	0	99.3	99.3
HV	2	0	1	0	3	1	26	1	0	28	2	1	1	0	4	4	26	3	0	33	68
% HV	1.1	0	1.9	0	1.2	1.6	0.7	0.3	0	0.7	0.6	7.7	0.2	0	0.4	0.5	0.7	1.7	0	0.7	0.7

VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 3

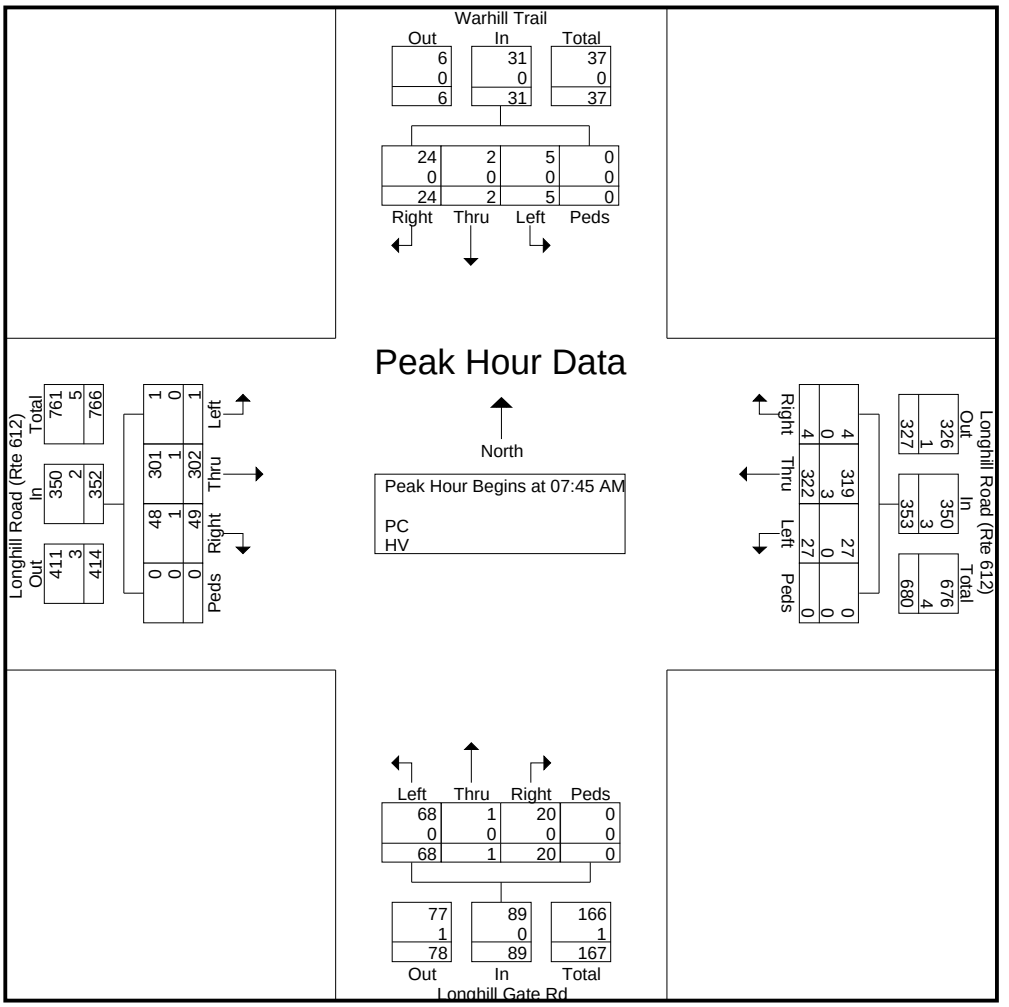


VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 4

	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**10**	0	**2**	0	**12**	0	77	**10**	0	87	**10**	0	**23**	0	**33**	**15**	**91**	0	0	**106**	**238**
08:00 AM	3	**1**	1	0	5	**2**	82	8	0	92	6	0	16	0	22	10	60	**1**	0	71	190
08:15 AM	5	1	2	0	8	0	55	3	0	58	2	**1**	14	0	17	9	79	0	0	88	171
08:30 AM	6	0	0	0	6	2	**108**	6	0	**116**	2	0	15	0	17	15	72	0	0	87	226
Total Volume	24	2	5	0	31	4	322	27	0	353	20	1	68	0	89	49	302	1	0	352	825
% App. Total	77.4	6.5	16.1	0		1.1	91.2	7.6	0		22.5	1.1	76.4	0		13.9	85.8	0.3	0		
PHF	.600	.500	.625	.000	.646	.500	.745	.675	.000	.761	.500	.250	.739	.000	.674	.817	.830	.250	.000	.830	.867
PC	24	2	5	0	31	4	319	27	0	350	20	1	68	0	89	48	301	1	0	350	820
% PC	100	100	100	0	100	100	99.1	100	0	99.2	100	100	100	0	100	98.0	99.7	100	0	99.4	99.4
HV	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	5
% HV	0	0	0	0	0	0	0.9	0	0	0.8	0	0	0	0	0	2.0	0.3	0	0	0.6	0.6

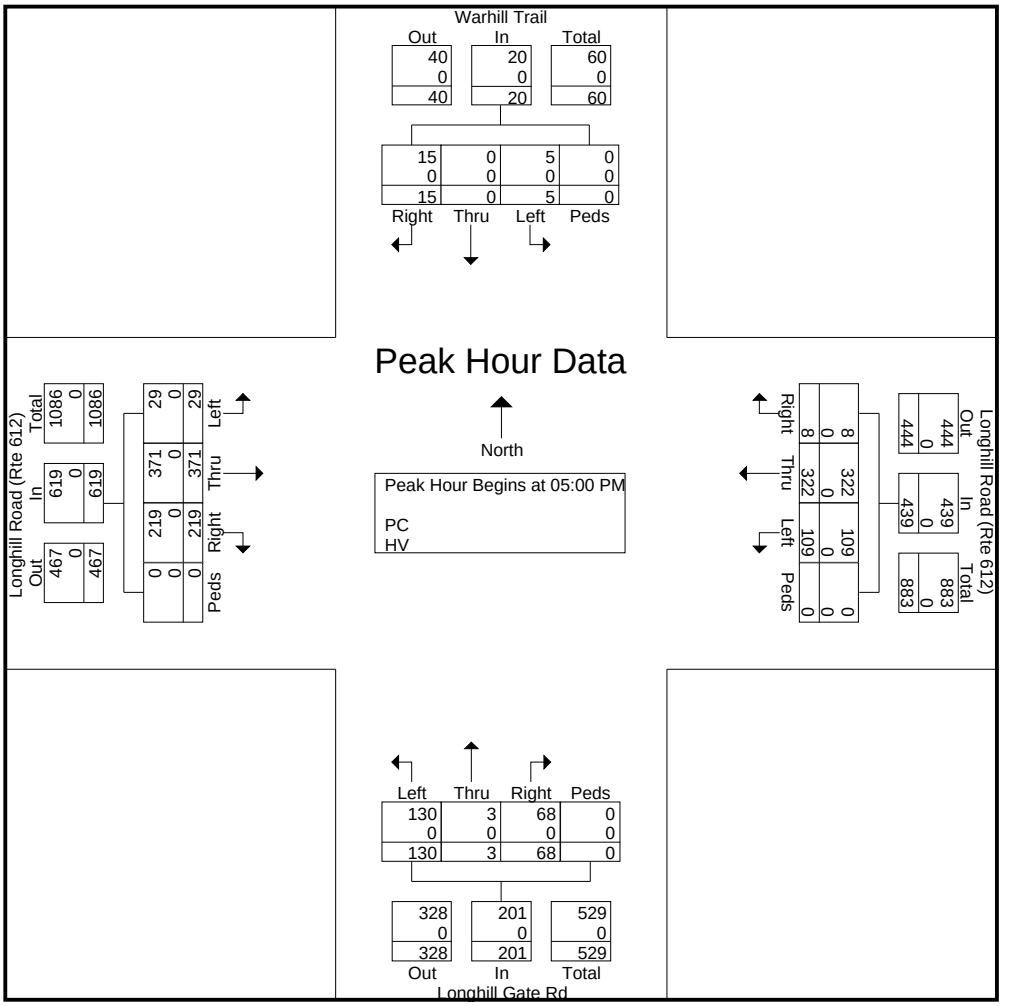


VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 5

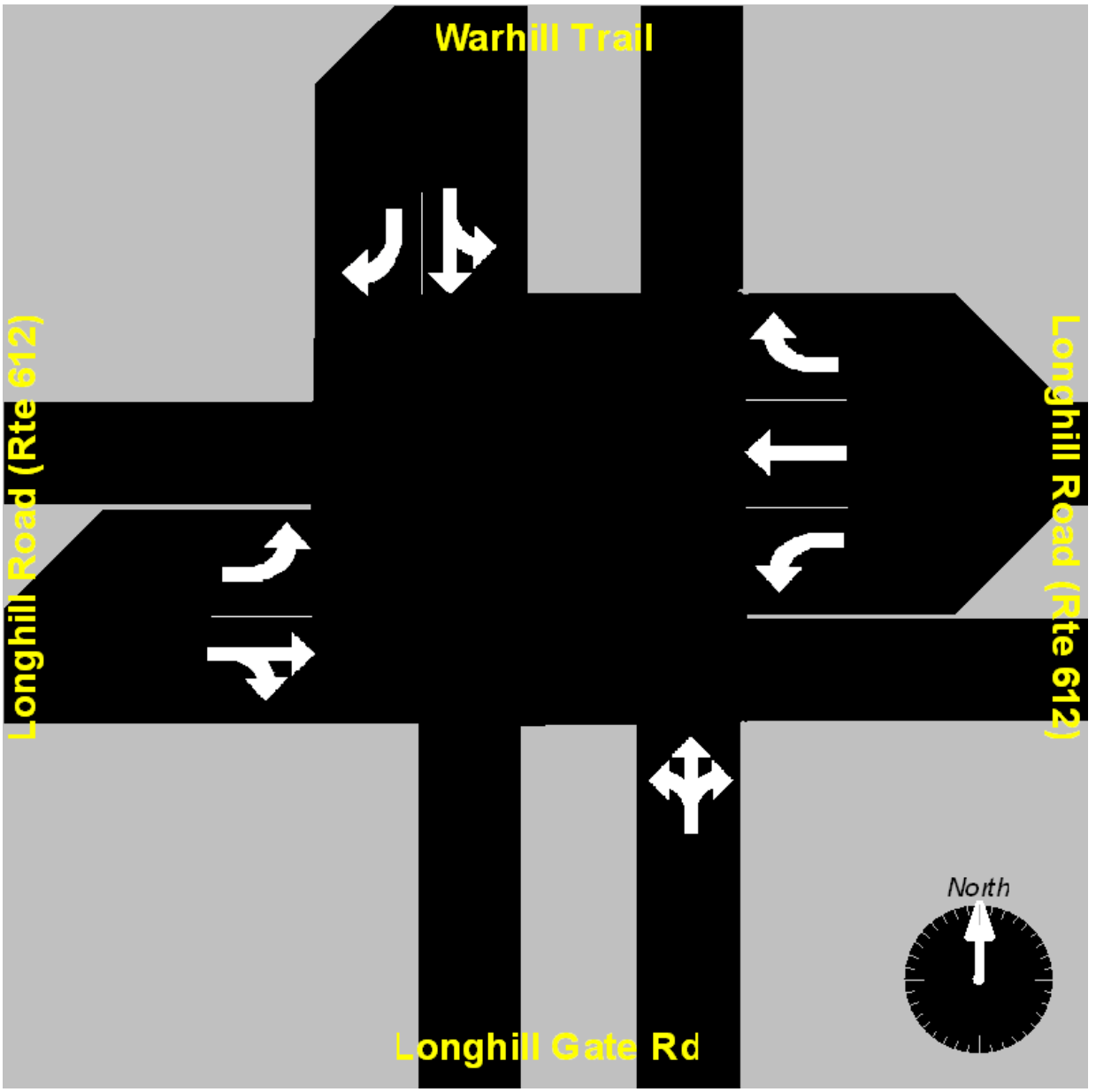
	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	0	**2**	0	**6**	**3**	59	19	0	81	17	0	20	0	37	52	**99**	**8**	0	159	283
05:15 PM	2	0	1	0	3	1	**90**	**53**	0	**144**	**20**	**1**	28	0	49	**68**	99	8	0	**175**	**371**
05:30 PM	4	0	1	0	5	1	89	20	0	110	14	1	**45**	0	**60**	54	95	7	0	156	331
05:45 PM	**5**	0	1	0	6	3	84	17	0	104	17	1	37	0	55	45	78	6	0	129	294
Total Volume	15	0	5	0	20	8	322	109	0	439	68	3	130	0	201	219	371	29	0	619	1279
% App. Total	75	0	25	0		1.8	73.3	24.8	0		33.8	1.5	64.7	0		35.4	59.9	4.7	0		
PHF	.750	.000	.625	.000	.833	.667	.894	.514	.000	.762	.850	.750	.722	.000	.838	.805	.937	.906	.000	.884	.862
PC	15	0	5	0	20	8	322	109	0	439	68	3	130	0	201	219	371	29	0	619	1279
% PC	100	0	100	0	100	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 1

Groups Printed- PC - HV

	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		
07:00 AM	4	0	6	10	1	160	6	167	47	0	18	65	3	177	0	180	422
07:15 AM	2	0	9	11	1	84	6	91	41	0	5	46	11	190	0	201	349
07:30 AM	3	1	12	16	1	66	7	74	62	1	6	69	3	160	0	163	322
07:45 AM	9	0	17	26	5	107	7	119	73	1	9	83	3	230	1	234	462
Total	18	1	44	63	8	417	26	451	223	2	38	263	20	757	1	778	1555
08:00 AM	2	2	11	15	6	106	18	130	62	0	6	68	3	183	2	188	401
08:15 AM	3	0	8	11	1	93	10	104	53	0	7	60	4	170	1	175	350
08:30 AM	3	0	5	8	0	116	11	127	49	1	12	62	4	176	0	180	377
08:45 AM	3	0	23	26	7	129	10	146	58	0	8	66	2	198	0	200	438
Total	11	2	47	60	14	444	49	507	222	1	33	256	13	727	3	743	1566
09:00 AM	1	0	9	10	0	135	19	154	46	0	5	51	4	127	1	132	347
09:15 AM	3	0	7	10	1	121	15	137	51	0	9	60	5	150	1	156	363
09:30 AM	1	1	4	6	2	111	7	120	46	0	10	56	4	151	1	156	338
09:45 AM	4	1	6	11	5	100	14	119	57	0	8	65	1	139	2	142	337
Total	9	2	26	37	8	467	55	530	200	0	32	232	14	567	5	586	1385
10:00 AM	0	0	5	5	3	86	16	105	44	0	6	50	2	136	3	141	301
10:15 AM	3	0	4	7	2	122	23	147	32	0	10	42	3	116	3	122	318
10:30 AM	2	0	7	9	4	94	18	116	45	0	9	54	4	111	1	116	295
10:45 AM	2	0	3	5	4	116	18	138	28	0	8	36	4	128	2	134	313
Total	7	0	19	26	13	418	75	506	149	0	33	182	13	491	9	513	1227
11:00 AM	1	0	5	6	5	125	22	152	29	0	5	34	4	114	2	120	312
11:15 AM	5	0	3	8	4	110	17	131	45	0	12	57	6	145	3	154	350
11:30 AM	0	1	6	7	5	153	30	188	24	0	8	32	3	107	2	112	339
11:45 AM	3	0	8	11	2	134	27	163	35	0	7	42	6	156	0	162	378
Total	9	1	22	32	16	522	96	634	133	0	32	165	19	522	7	548	1379
12:00 PM	1	0	8	9	6	158	32	196	30	0	6	36	10	128	2	140	381
12:15 PM	2	0	11	13	2	121	28	151	20	0	7	27	8	131	2	141	332
12:30 PM	2	0	11	13	6	127	28	161	35	0	9	44	2	136	3	141	359
12:45 PM	4	0	11	15	14	149	24	187	32	0	6	38	8	175	2	185	425
Total	9	0	41	50	28	555	112	695	117	0	28	145	28	570	9	607	1497
01:00 PM	2	0	3	5	6	138	41	185	51	1	14	66	10	165	3	178	434
01:15 PM	1	0	8	9	7	128	29	164	31	0	13	44	2	139	2	143	360
01:30 PM	2	0	6	8	6	131	25	162	36	0	21	57	5	133	5	143	370
01:45 PM	4	0	7	11	5	141	22	168	30	0	34	64	4	145	1	150	393
Total	9	0	24	33	24	538	117	679	148	1	82	231	21	582	11	614	1557
02:00 PM	3	1	4	8	9	135	27	171	41	1	6	48	6	141	2	149	376
02:15 PM	4	0	3	7	5	145	26	176	25	0	9	34	7	125	4	136	353
02:30 PM	3	0	5	8	6	142	21	169	29	1	10	40	20	219	1	240	457
02:45 PM	2	0	9	11	7	163	27	197	34	1	14	49	6	170	2	178	435
Total	12	1	21	34	27	585	101	713	129	3	39	171	39	655	9	703	1621
03:00 PM	2	0	4	6	6	159	40	205	21	0	6	27	3	168	0	171	409
03:15 PM	1	0	6	7	7	173	41	221	41	0	9	50	12	173	4	189	467
03:30 PM	3	0	7	10	12	174	37	223	30	0	10	40	6	162	2	170	443

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 2

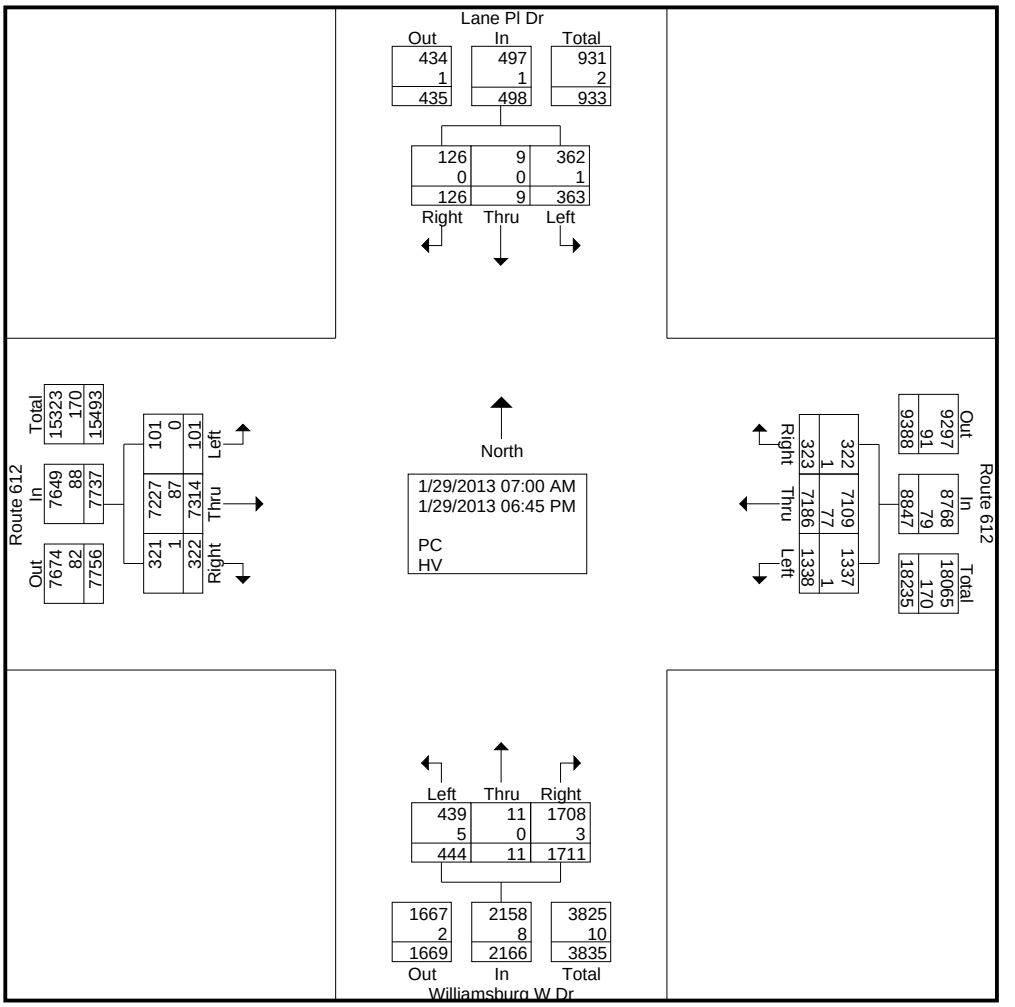
Groups Printed- PC - HV

	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		1.04	1.04	1.04		
03:45 PM	1	0	14	15	4	186	40	230	20	1	14	35	7	140	3	150	430
Total	7	0	31	38	29	692	158	879	112	1	39	152	28	643	9	680	1749
04:00 PM	3	0	5	8	11	217	51	279	33	0	9	42	6	141	4	151	480
04:15 PM	4	0	8	12	25	210	53	288	32	1	9	42	15	165	3	183	525
04:30 PM	6	0	12	18	9	213	40	262	30	0	16	46	11	164	2	177	503
04:45 PM	3	0	11	14	11	223	47	281	19	0	8	27	28	162	3	193	515
Total	16	0	36	52	56	863	191	1110	114	1	42	157	60	632	12	704	2023
05:00 PM	5	0	5	10	11	254	56	321	16	0	8	24	15	187	5	207	562
05:15 PM	2	0	11	13	12	255	49	316	28	0	4	32	4	180	4	188	549
05:30 PM	1	0	7	8	18	244	51	313	17	1	2	20	6	165	6	177	518
05:45 PM	4	0	3	7	9	262	45	316	23	0	11	34	12	158	2	172	529
Total	12	0	26	38	50	1015	201	1266	84	1	25	110	37	690	17	744	2158
06:00 PM	3	0	7	10	10	194	53	257	22	0	3	25	7	123	3	133	425
06:15 PM	2	0	4	6	18	184	45	247	23	0	7	30	16	114	4	134	417
06:30 PM	2	1	9	12	17	168	34	219	14	1	10	25	5	143	1	149	405
06:45 PM	0	1	6	7	5	124	25	154	21	0	1	22	2	98	1	101	284
Total	7	2	26	35	50	670	157	877	80	1	21	102	30	478	9	517	1531
Grand Total	126	9	363	498	323	7186	1338	8847	1711	11	444	2166	322	7314	101	7737	19248
Apprch %	25.3	1.8	72.9		3.7	81.2	15.1		79	0.5	20.5		4.2	94.5	1.3		
Total %	0.7	0	1.9	2.6	1.7	37.3	7	46	8.9	0.1	2.3	11.3	1.7	38	0.5	40.2	
PC	126	9	362	497	322	7109	1337	8768	1708	11	439	2158	321	7227	101	7649	19072
% PC	100	100	99.7	99.8	99.7	98.9	99.9	99.1	99.8	100	98.9	99.6	99.7	98.8	100	98.9	99.1
HV	0	0	1	1	1	77	1	79	3	0	5	8	1	87	0	88	176
% HV	0	0	0.3	0.2	0.3	1.1	0.1	0.9	0.2	0	1.1	0.4	0.3	1.2	0	1.1	0.9

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 3

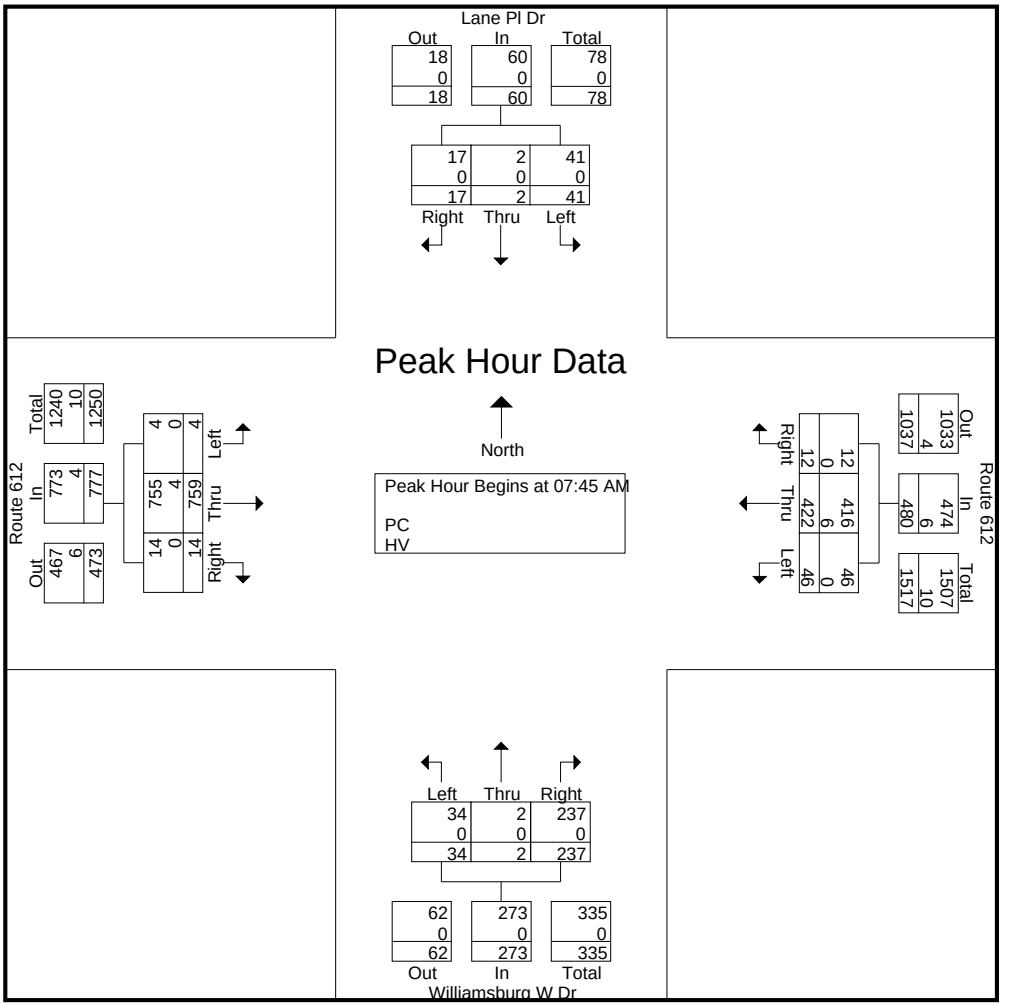


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013

	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**9**	0	**17**	**26**	5	107	7	119	**73**	**1**	9	**83**	3	**230**	1	**234**	**462**
08:00 AM	2	**2**	11	15	**6**	106	**18**	**130**	62	0	6	68	3	183	**2**	188	401
08:15 AM	3	0	8	11	1	93	10	104	53	0	7	60	**4**	170	1	175	350
08:30 AM	3	0	5	8	0	**116**	11	127	49	1	**12**	62	4	176	0	180	377
Total Volume	17	2	41	60	12	422	46	480	237	2	34	273	14	759	4	777	1590
% App. Total	28.3	3.3	68.3		2.5	87.9	9.6		86.8	0.7	12.5		1.8	97.7	0.5		
PHF	.472	.250	.603	.577	.500	.909	.639	.923	.812	.500	.708	.822	.875	.825	.500	.830	.860
PC	17	2	41	60	12	416	46	474	237	2	34	273	14	755	4	773	1580
% PC	100	100	100	100	100	98.6	100	98.8	100	100	100	100	100	99.5	100	99.5	99.4
HV	0	0	0	0	0	6	0	6	0	0	0	0	0	4	0	4	10
% HV	0	0	0	0	0	1.4	0	1.3	0	0	0	0	0	0.5	0	0.5	0.6

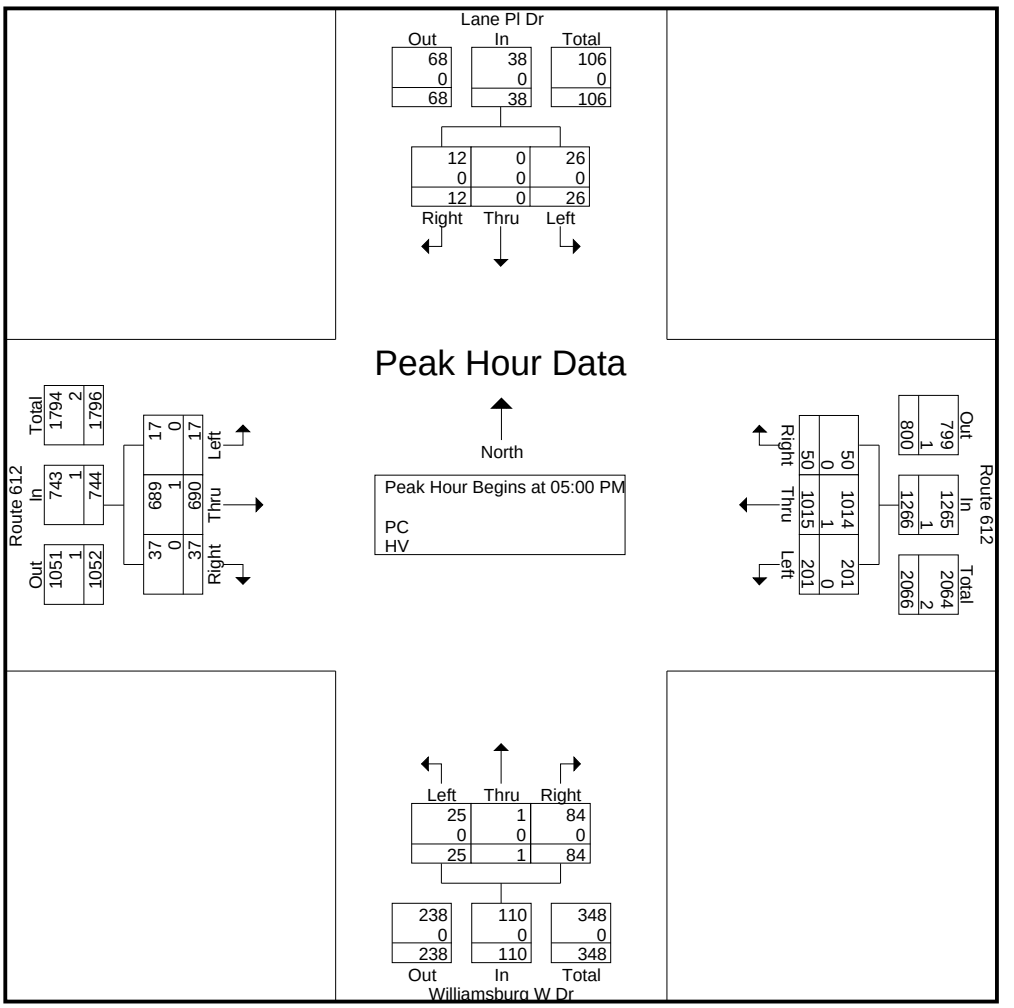


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 5

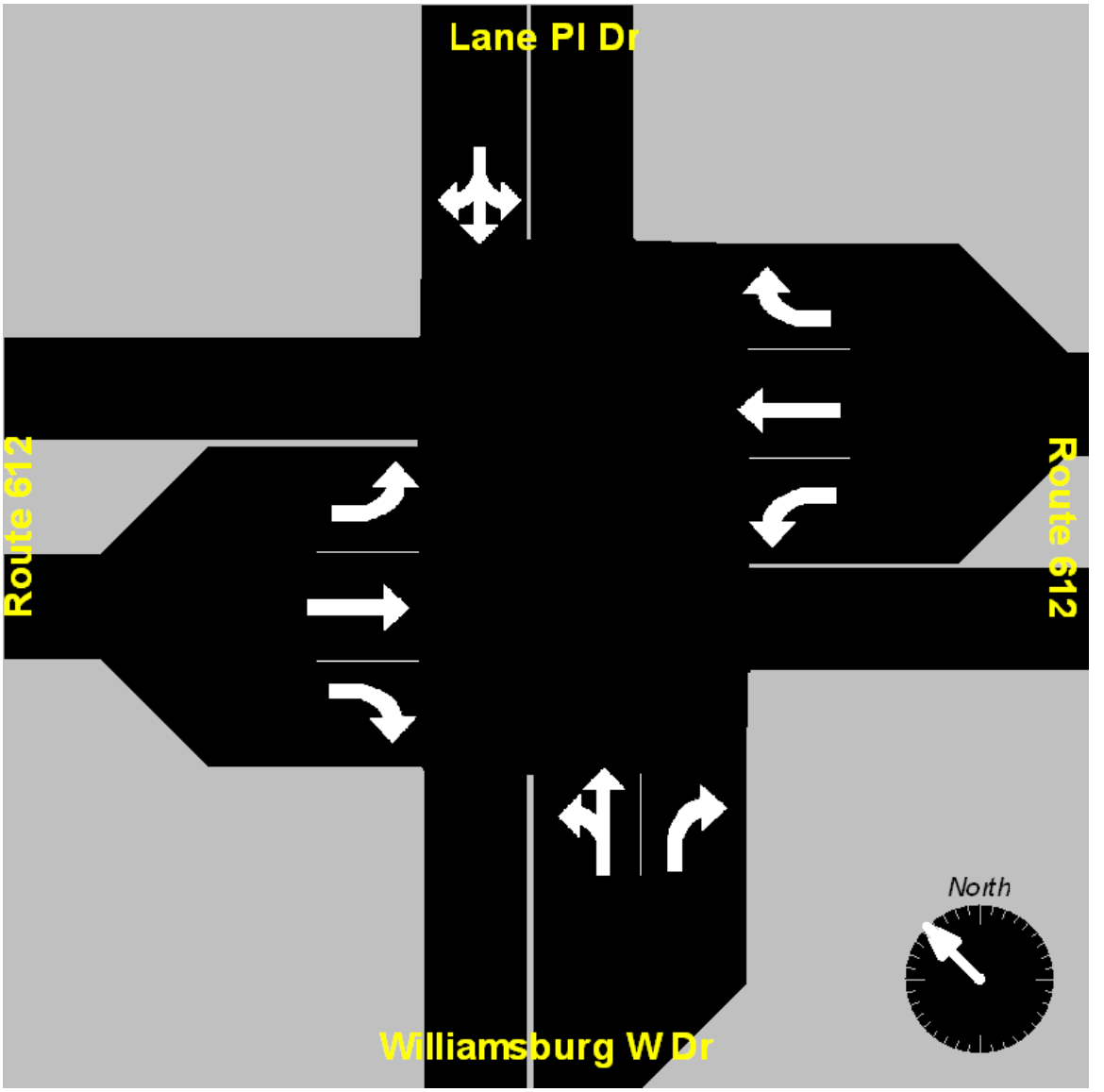
	Lane Pl Dr From North				Route 612 From East				Williamsburg W Dr From South				Route 612 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**5**	0	5	10	11	254	**56**	**321**	16	0	8	24	**15**	**187**	5	**207**	**562**
05:15 PM	2	0	**11**	**13**	12	255	49	316	**28**	0	4	32	4	180	4	188	549
05:30 PM	1	0	7	8	**18**	244	51	313	17	**1**	2	20	6	165	**6**	177	518
05:45 PM	4	0	3	7	9	**262**	45	316	23	0	**11**	**34**	12	158	2	172	529
Total Volume	12	0	26	38	50	1015	201	1266	84	1	25	110	37	690	17	744	2158
% App. Total	31.6	0	68.4		3.9	80.2	15.9		76.4	0.9	22.7		5	92.7	2.3		
PHF	.600	.000	.591	.731	.694	.969	.897	.986	.750	.250	.568	.809	.617	.922	.708	.899	.960
PC	12	0	26	38	50	1014	201	1265	84	1	25	110	37	689	17	743	2156
% PC	100	0	100	100	100	99.9	100	99.9	100	100	100	100	100	99.9	100	99.9	99.9
HV	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
% HV	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0.1	0.1



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Route 1501 (Williamsburg W Rd)
and Lane Place Dr
1.04 AADT Adjustment Applied

File Name : longhill& fords colony1-29-2013
Site Code : 00000000
Start Date : 1/29/2013
Page No : 6



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013

Groups Printed- PC - HV

	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
07:00 AM	0	1	1	0	213	213	0	199	1	200	414
07:15 AM	0	0	0	1	89	90	0	183	2	185	275
07:30 AM	0	0	0	2	63	65	0	140	0	140	205
07:45 AM	1	1	2	1	143	144	0	241	1	242	388
Total	1	2	3	4	508	512	0	763	4	767	1282
08:00 AM	0	1	1	0	105	105	0	184	2	186	292
08:15 AM	2	3	5	8	113	121	0	199	2	201	327
08:30 AM	3	0	3	6	119	125	0	196	0	196	324
08:45 AM	2	1	3	8	138	146	0	211	2	213	362
Total	7	5	12	22	475	497	0	790	6	796	1305
09:00 AM	1	4	5	2	109	111	0	184	6	190	306
09:15 AM	3	7	10	3	125	128	0	166	1	167	305
09:30 AM	2	6	8	1	128	129	0	142	0	142	279
09:45 AM	2	2	4	7	123	130	0	142	2	144	278
Total	8	19	27	13	485	498	0	634	9	643	1168
10:00 AM	3	4	7	1	101	102	0	143	2	145	254
10:15 AM	3	1	4	1	110	111	0	145	2	147	262
10:30 AM	2	4	6	2	103	105	0	113	0	113	224
10:45 AM	3	3	6	1	119	120	0	130	0	130	256
Total	11	12	23	5	433	438	0	531	4	535	996
11:00 AM	2	2	4	2	155	157	0	125	4	129	290
11:15 AM	1	1	2	6	148	154	0	125	3	128	284
11:30 AM	3	2	5	0	144	144	0	137	0	137	286
11:45 AM	4	2	6	4	152	156	0	112	3	115	277
Total	10	7	17	12	599	611	0	499	10	509	1137
12:00 PM	2	6	8	1	152	153	0	147	3	150	311
12:15 PM	3	6	9	4	189	193	0	133	2	135	337
12:30 PM	2	2	4	2	149	151	0	144	3	147	302
12:45 PM	0	8	8	3	152	155	0	167	2	169	332
Total	7	22	29	10	642	652	0	591	10	601	1282
01:00 PM	2	1	3	2	146	148	0	151	1	152	303
01:15 PM	3	3	6	1	110	111	0	149	0	149	266
01:30 PM	1	3	4	2	136	138	0	122	2	124	266
01:45 PM	3	2	5	4	125	129	0	140	1	141	275
Total	9	9	18	9	517	526	0	562	4	566	1110
02:00 PM	6	3	9	2	163	165	0	156	2	158	332
02:15 PM	1	3	4	3	168	171	0	166	1	167	342
02:30 PM	0	6	6	1	171	172	0	224	1	225	403
02:45 PM	4	2	6	2	164	166	0	134	0	134	306
Total	11	14	25	8	666	674	0	680	4	684	1383
03:00 PM	7	1	8	0	198	198	0	161	5	166	372
03:15 PM	1	2	3	2	189	191	0	189	2	191	385
03:30 PM	0	4	4	3	202	205	0	169	1	170	379
03:45 PM	2	2	4	4	189	193	0	176	0	176	373
Total	10	9	19	9	778	787	0	695	8	703	1509
04:00 PM	2	2	4	4	255	259	0	142	3	145	408

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013

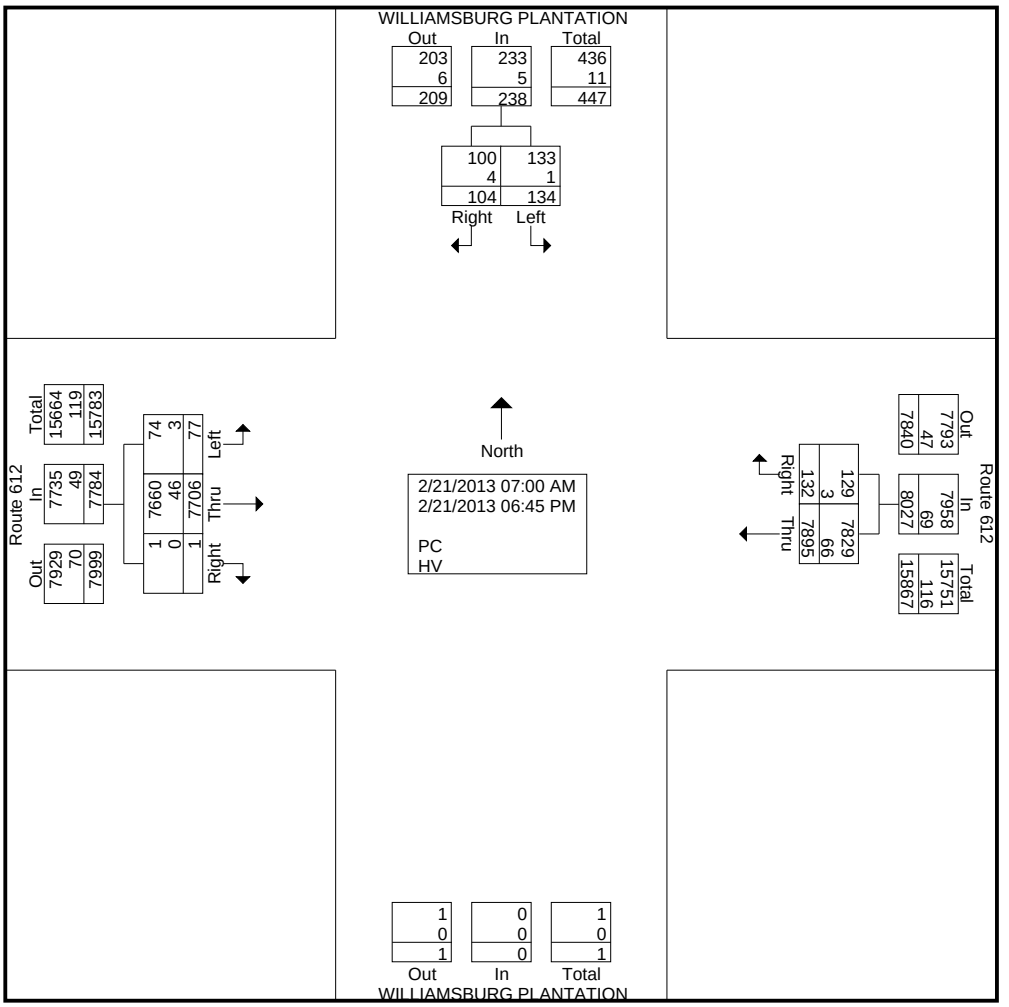
Groups Printed- PC - HV

	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
04:15 PM	1	2	3	3	222	225	0	164	1	165	393
04:30 PM	3	2	5	4	242	246	0	153	0	153	404
04:45 PM	0	2	2	0	263	263	0	175	1	176	441
Total	6	8	14	11	982	993	0	634	5	639	1646
05:00 PM	7	3	10	2	268	270	1	206	1	208	488
05:15 PM	7	4	11	3	273	276	0	183	1	184	471
05:30 PM	4	6	10	4	238	242	0	189	2	191	443
05:45 PM	1	3	4	3	253	256	0	164	2	166	426
Total	19	16	35	12	1032	1044	1	742	6	749	1828
06:00 PM	2	3	5	6	194	200	0	188	4	192	397
06:15 PM	0	4	4	4	207	211	0	130	0	130	345
06:30 PM	2	1	3	4	198	202	0	124	1	125	330
06:45 PM	1	3	4	3	179	182	0	143	2	145	331
Total	5	11	16	17	778	795	0	585	7	592	1403
Grand Total	104	134	238	132	7895	8027	1	7706	77	7784	16049
Apprch %	43.7	56.3		1.6	98.4		0	99	1		
Total %	0.6	0.8	1.5	0.8	49.2	50	0	48	0.5	48.5	
PC	100	133	233	129	7829	7958	1	7660	74	7735	15926
% PC	96.2	99.3	97.9	97.7	99.2	99.1	100	99.4	96.1	99.4	99.2
HV	4	1	5	3	66	69	0	46	3	49	123
% HV	3.8	0.7	2.1	2.3	0.8	0.9	0	0.6	3.9	0.6	0.8

VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 3

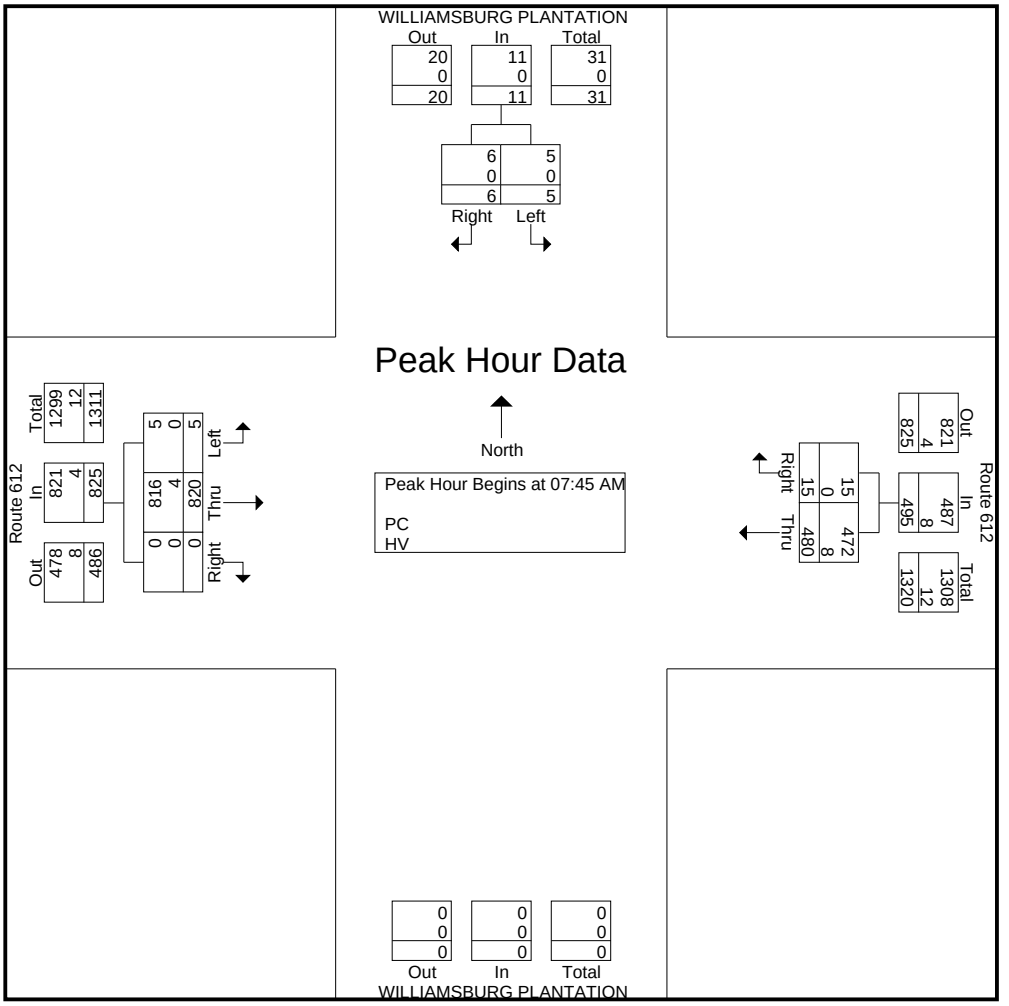


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 4

	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:45 AM											
07:45 AM	1	1	2	1	**143**	**144**	0	**241**	1	**242**	**388**
08:00 AM	0	1	1	0	105	105	0	184	**2**	186	292
08:15 AM	2	**3**	**5**	**8**	113	121	0	199	2	201	327
08:30 AM	**3**	0	3	6	119	125	0	196	0	196	324
Total Volume	6	5	11	15	480	495	0	820	5	825	1331
% App. Total	54.5	45.5		3	97		0	99.4	0.6		
PHF	.500	.417	.550	.469	.839	.859	.000	.851	.625	.852	.858
PC	6	5	11	15	472	487	0	816	5	821	1319
% PC	100	100	100	100	98.3	98.4	0	99.5	100	99.5	99.1
HV	0	0	0	0	8	8	0	4	0	4	12
% HV	0	0	0	0	1.7	1.6	0	0.5	0	0.5	0.9

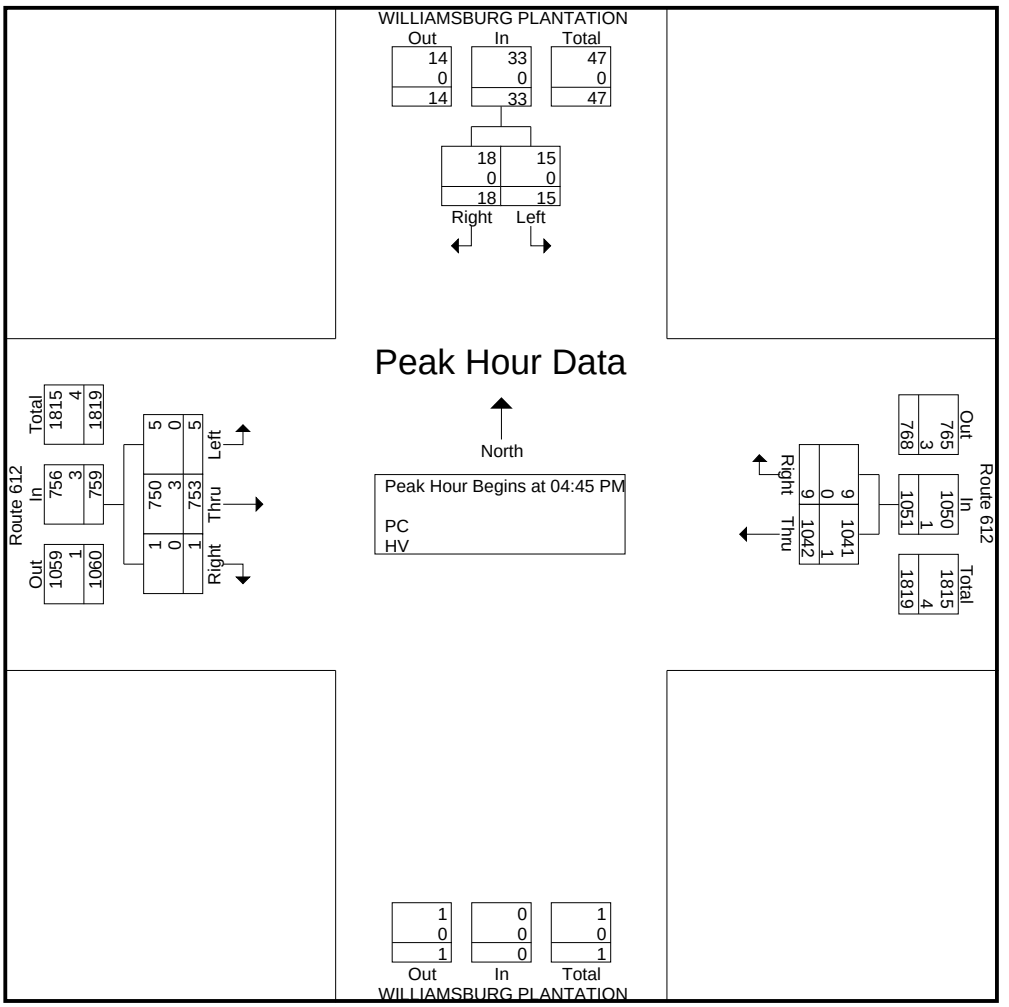


VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 5

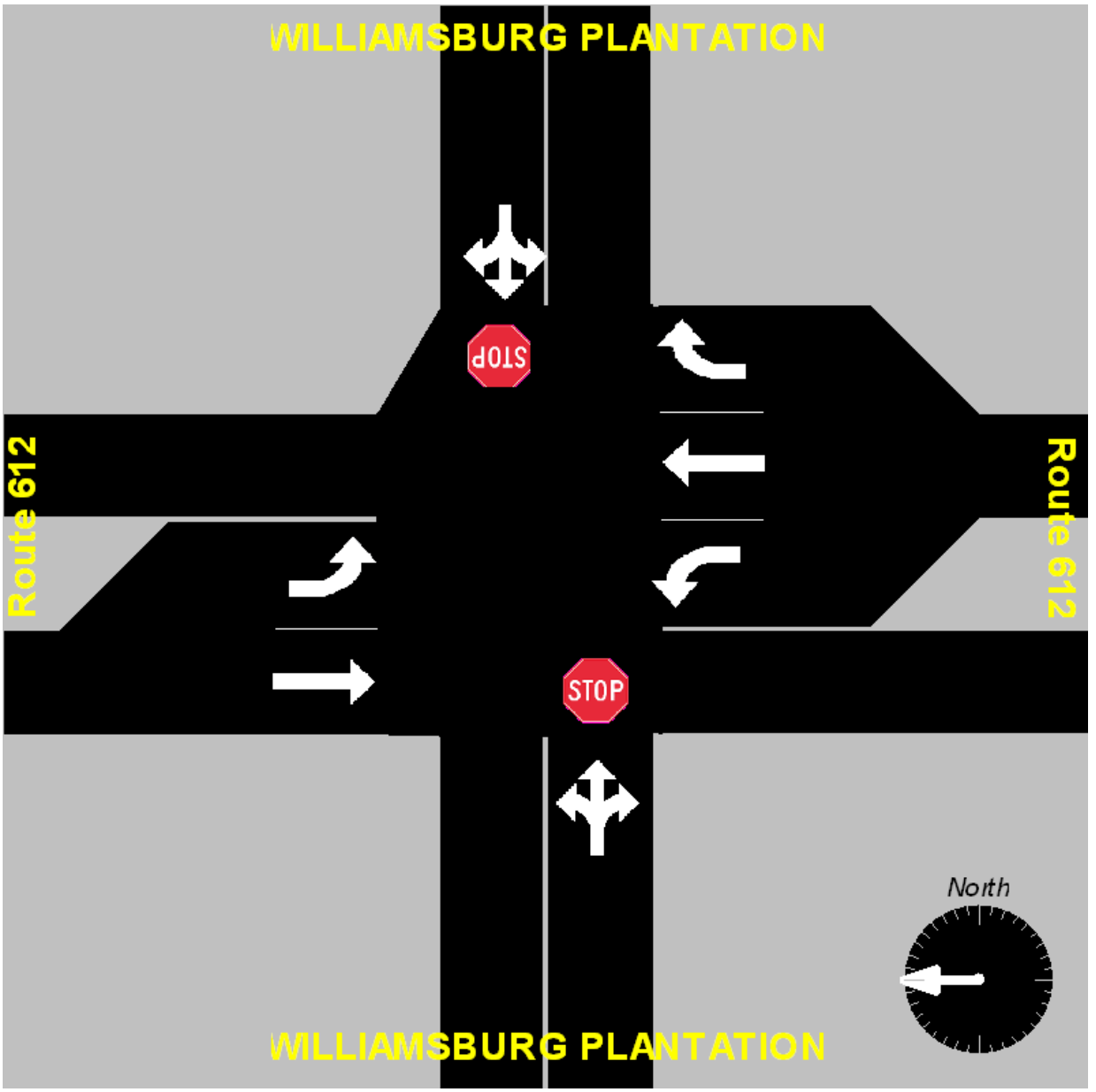
	WILLIAMSBURG PLANTATION From North			Route 612 From East			Route 612 From West				
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:45 PM											
04:45 PM	0	2	2	0	263	263	0	175	1	176	441
05:00 PM	**7**	3	10	2	268	270	**1**	**206**	1	**208**	**488**
05:15 PM	7	4	**11**	3	**273**	**276**	0	183	1	184	471
05:30 PM	4	**6**	10	**4**	238	242	0	189	**2**	191	443
Total Volume	18	15	33	9	1042	1051	1	753	5	759	1843
% App. Total	54.5	45.5		0.9	99.1		0.1	99.2	0.7		
PHF	.643	.625	.750	.563	.954	.952	.250	.914	.625	.912	.944
PC	18	15	33	9	1041	1050	1	750	5	756	1839
% PC	100	100	100	100	99.9	99.9	100	99.6	100	99.6	99.8
HV	0	0	0	0	1	1	0	3	0	3	4
% HV	0	0	0	0	0.1	0.1	0	0.4	0	0.4	0.2



VDOT
Eastern Region
Traffic Engineering

Route 612 (Longhill Road)
with Williamsburg Plantation
James City County
1.10 AADT Adjustment Applied

File Name : route 612 @ williamsburg plantation
Site Code : 612WLMPL
Start Date : 2/21/2013
Page No : 6



VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 1

Groups Printed- PC

	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	24	2	21	1	48	19	44	0	0	63	6	3	0	0	9	1	87	21	0	109	229
07:15 AM	19	0	18	0	37	12	49	2	0	63	9	0	1	0	10	0	123	35	0	158	268
07:30 AM	32	0	26	0	58	20	63	2	0	85	11	3	0	0	14	0	124	32	0	156	313
07:45 AM	25	0	33	0	58	36	63	3	0	102	14	2	6	0	22	3	131	34	0	168	350
Total	100	2	98	1	201	87	219	7	0	313	40	8	7	0	55	4	465	122	0	591	1160
08:00 AM	24	0	26	0	50	50	64	0	0	114	7	2	2	0	11	1	134	51	0	186	361
08:15 AM	34	1	44	0	79	38	66	2	0	106	8	3	0	0	11	0	150	36	0	186	382
08:30 AM	27	0	20	0	47	49	75	0	0	124	14	3	0	0	17	0	128	33	0	161	349
08:45 AM	42	2	55	0	99	53	116	9	0	178	16	5	2	0	23	0	146	46	0	192	492
Total	127	3	145	0	275	190	321	11	0	522	45	13	4	0	62	1	558	166	0	725	1584
09:00 AM	31	2	44	0	77	50	78	6	0	134	6	1	6	0	13	0	156	41	0	197	421
09:15 AM	31	0	44	0	75	40	76	7	0	123	17	3	1	0	21	2	136	54	0	192	411
09:30 AM	37	1	49	0	87	44	55	6	0	105	15	2	1	0	18	0	103	38	0	141	351
09:45 AM	41	1	42	0	84	71	61	1	0	133	8	0	0	0	8	5	131	35	0	171	396
Total	140	4	179	0	323	205	270	20	0	495	46	6	8	0	60	7	526	168	0	701	1579
10:00 AM	41	3	70	0	114	63	71	3	0	137	7	5	2	0	14	2	104	35	0	141	406
10:15 AM	28	3	50	0	81	41	75	2	0	118	3	6	0	0	9	0	111	38	0	149	357
10:30 AM	32	2	56	0	90	42	66	3	0	111	6	3	1	0	10	0	107	41	0	148	359
10:45 AM	24	2	47	0	73	55	84	8	0	147	8	7	2	0	17	2	105	41	0	148	385
Total	125	10	223	0	358	201	296	16	0	513	24	21	5	0	50	4	427	155	0	586	1507
11:00 AM	29	2	58	0	89	43	80	2	0	125	1	1	2	0	4	0	108	33	0	141	359
11:15 AM	23	3	67	0	93	31	81	5	1	118	7	3	1	0	11	0	87	33	0	120	342
11:30 AM	45	0	40	0	85	54	101	7	0	162	6	2	1	0	9	1	95	41	0	137	393
11:45 AM	43	1	58	0	102	51	113	6	0	170	7	2	0	0	9	0	99	41	0	140	421
Total	140	6	223	0	369	179	375	20	1	575	21	8	4	0	33	1	389	148	0	538	1515
12:00 PM	36	3	50	0	89	59	110	3	0	172	5	5	1	0	11	3	111	50	0	164	436
12:15 PM	34	2	59	0	95	42	85	11	0	138	9	6	0	0	15	0	93	40	0	133	381
12:30 PM	43	7	46	0	96	55	96	7	0	158	9	3	1	0	13	2	98	42	0	142	409
12:45 PM	40	7	64	0	111	50	88	6	0	144	14	5	1	0	20	0	102	43	0	145	420
Total	153	19	219	0	391	206	379	27	0	612	37	19	3	0	59	5	404	175	0	584	1646
01:00 PM	49	5	54	0	108	56	96	9	0	161	12	2	1	0	15	2	89	41	0	132	416
01:15 PM	49	6	66	0	121	61	88	7	0	156	11	3	0	0	14	0	93	46	0	139	430
01:30 PM	50	2	69	0	121	59	92	15	0	166	15	2	0	0	17	1	82	35	0	118	422
01:45 PM	47	3	58	0	108	67	104	2	0	173	5	2	2	0	9	0	116	42	0	158	448
Total	195	16	247	0	458	243	380	33	0	656	43	9	3	0	55	3	380	164	0	547	1716
02:00 PM	47	3	59	0	109	42	89	9	0	140	9	2	2	0	13	0	86	38	0	124	386
02:15 PM	67	3	62	0	132	40	111	8	0	159	6	2	1	0	9	1	93	31	0	125	425
02:30 PM	51	1	56	0	108	55	116	5	0	176	9	1	2	0	12	1	105	46	0	152	448
02:45 PM	44	3	53	0	100	60	116	6	0	182	8	1	1	0	10	0	88	43	0	131	423
Total	209	10	230	0	449	197	432	28	0	657	32	6	6	0	44	2	372	158	0	532	1682
03:00 PM	52	0	54	0	106	59	105	7	0	171	6	0	1	0	7	2	107	43	0	152	436
03:15 PM	45	2	62	0	109	52	95	9	0	156	2	2	2	0	6	2	94	40	0	136	407
03:30 PM	56	0	64	0	120	47	115	9	0	171	8	2	1	0	11	0	98	40	0	138	440
03:45 PM	50	2	63	0	115	37	132	14	0	183	7	2	1	0	10	1	93	55	0	149	457
Total	203	4	243	0	450	195	447	39	0	681	23	6	5	0	34	5	392	178	0	575	1740

VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 2

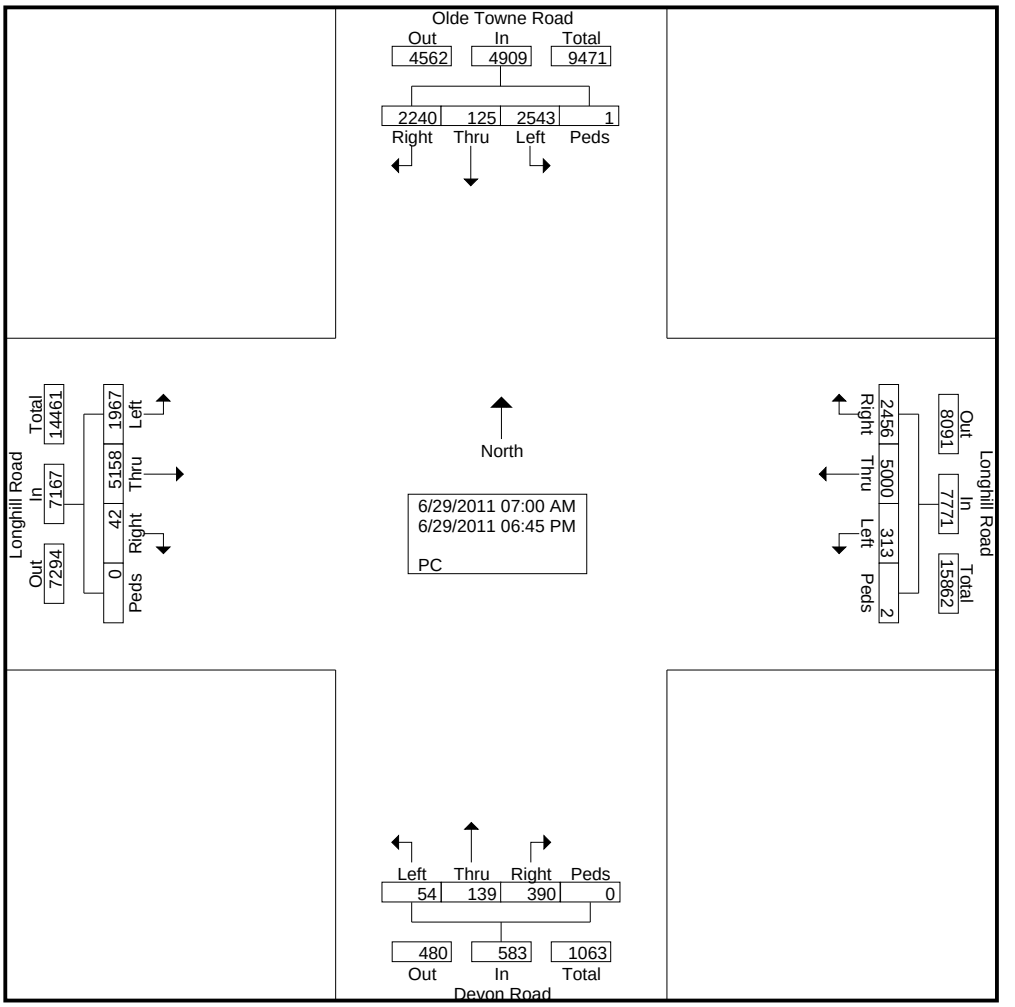
Groups Printed- PC

	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	58	3	51	0	112	59	147	9	0	215	6	5	0	0	11	1	88	38	0	127	465
04:15 PM	47	1	61	0	109	47	150	6	0	203	5	1	0	0	6	1	97	41	0	139	457
04:30 PM	63	5	71	0	139	56	148	8	0	212	9	5	1	0	15	0	96	36	0	132	498
04:45 PM	59	5	70	0	134	67	145	12	0	224	7	6	0	0	13	1	130	50	0	181	552
Total	227	14	253	0	494	229	590	35	0	854	27	17	1	0	45	3	411	165	0	579	1972
05:00 PM	94	3	96	0	193	50	199	5	0	254	3	5	2	0	10	0	113	50	0	163	620
05:15 PM	87	1	59	0	147	89	186	9	0	284	9	5	1	0	15	2	125	44	0	171	617
05:30 PM	106	3	55	0	164	63	190	15	0	268	5	1	1	0	7	2	113	42	0	157	596
05:45 PM	62	3	51	0	116	70	173	10	0	253	11	2	1	0	14	0	115	63	0	178	561
Total	349	10	261	0	620	272	748	39	0	1059	28	13	5	0	46	4	466	199	0	669	2394
06:00 PM	81	2	79	0	162	63	136	8	0	207	3	1	0	0	4	0	82	44	0	126	499
06:15 PM	69	9	49	0	127	75	165	12	0	252	7	5	1	0	13	1	99	33	0	133	525
06:30 PM	58	9	50	0	117	60	122	8	0	190	8	5	1	0	14	0	80	43	0	123	444
06:45 PM	64	7	44	0	115	54	120	10	1	185	6	2	1	0	9	2	107	49	0	158	467
Total	272	27	222	0	521	252	543	38	1	834	24	13	3	0	40	3	368	169	0	540	1935
Grand Total	2240	125	2543	1	4909	2456	5000	313	2	7771	390	139	54	0	583	42	5158	1967	0	7167	20430
Apprch %	45.6	2.5	51.8	0		31.6	64.3	4	0		66.9	23.8	9.3	0		0.6	72	27.4	0		
Total %	11	0.6	12.4	0	24	12	24.5	1.5	0	38	1.9	0.7	0.3	0	2.9	0.2	25.2	9.6	0	35.1	

VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 3

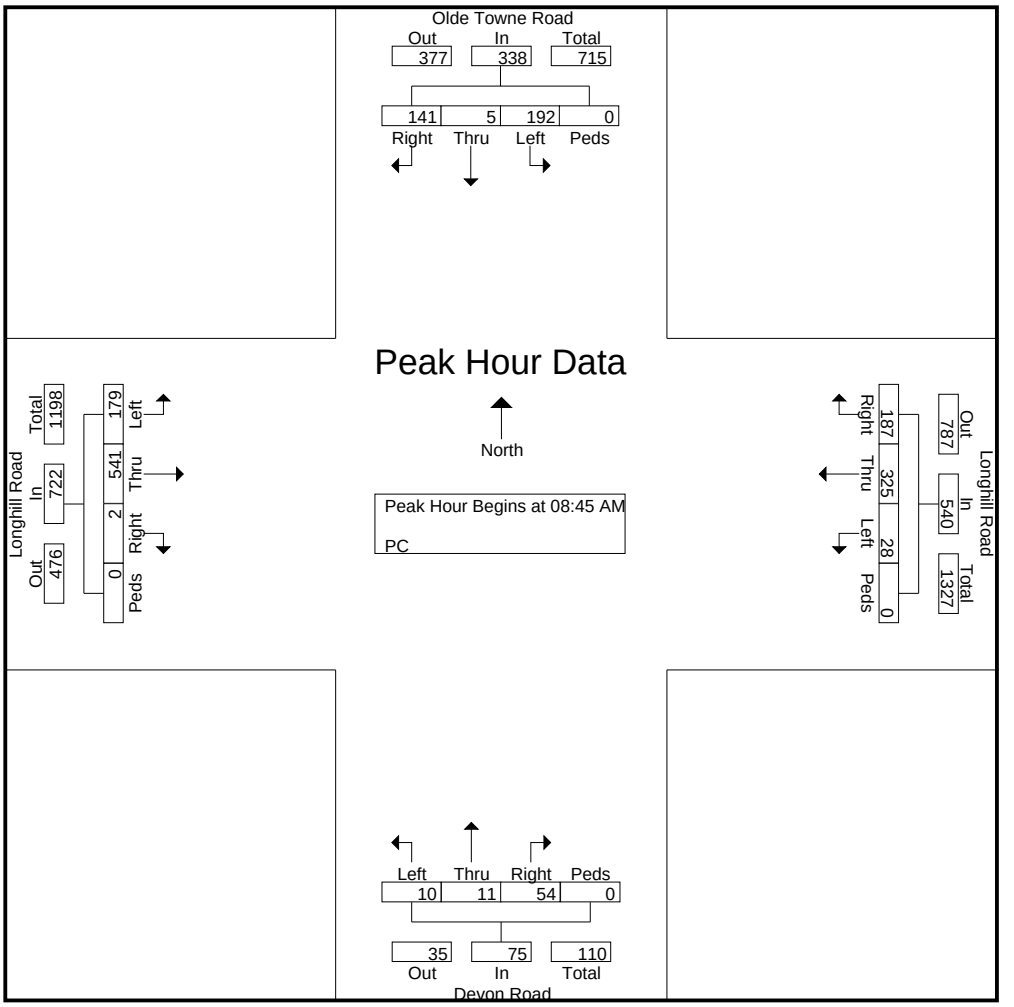


VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 4

	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:45 AM																					
08:45 AM	**42**	**2**	**55**	0	**99**	**53**	**116**	**9**	0	**178**	16	**5**	2	0	**23**	0	146	46	0	192	**492**
09:00 AM	31	2	44	0	77	50	78	6	0	134	6	1	**6**	0	13	0	**156**	41	0	**197**	421
09:15 AM	31	0	44	0	75	40	76	7	0	123	**17**	3	1	0	21	**2**	136	**54**	0	192	411
09:30 AM	37	1	49	0	87	44	55	6	0	105	15	2	1	0	18	0	103	38	0	141	351
Total Volume	141	5	192	0	338	187	325	28	0	540	54	11	10	0	75	2	541	179	0	722	1675
% App. Total	41.7	1.5	56.8	0		34.6	60.2	5.2	0		72	14.7	13.3	0		0.3	74.9	24.8	0		
PHF	.839	.625	.873	.000	.854	.882	.700	.778	.000	.758	.794	.550	.417	.000	.815	.250	.867	.829	.000	.916	.851

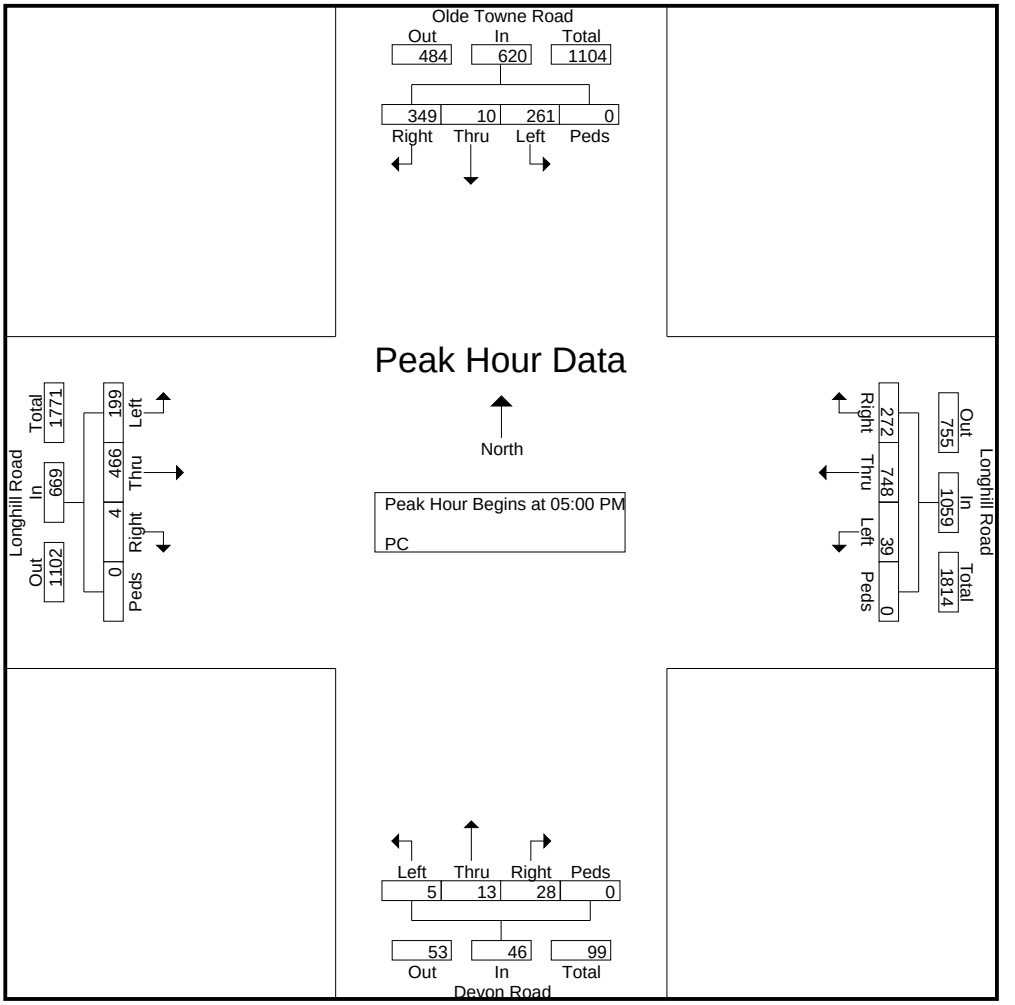


VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 5

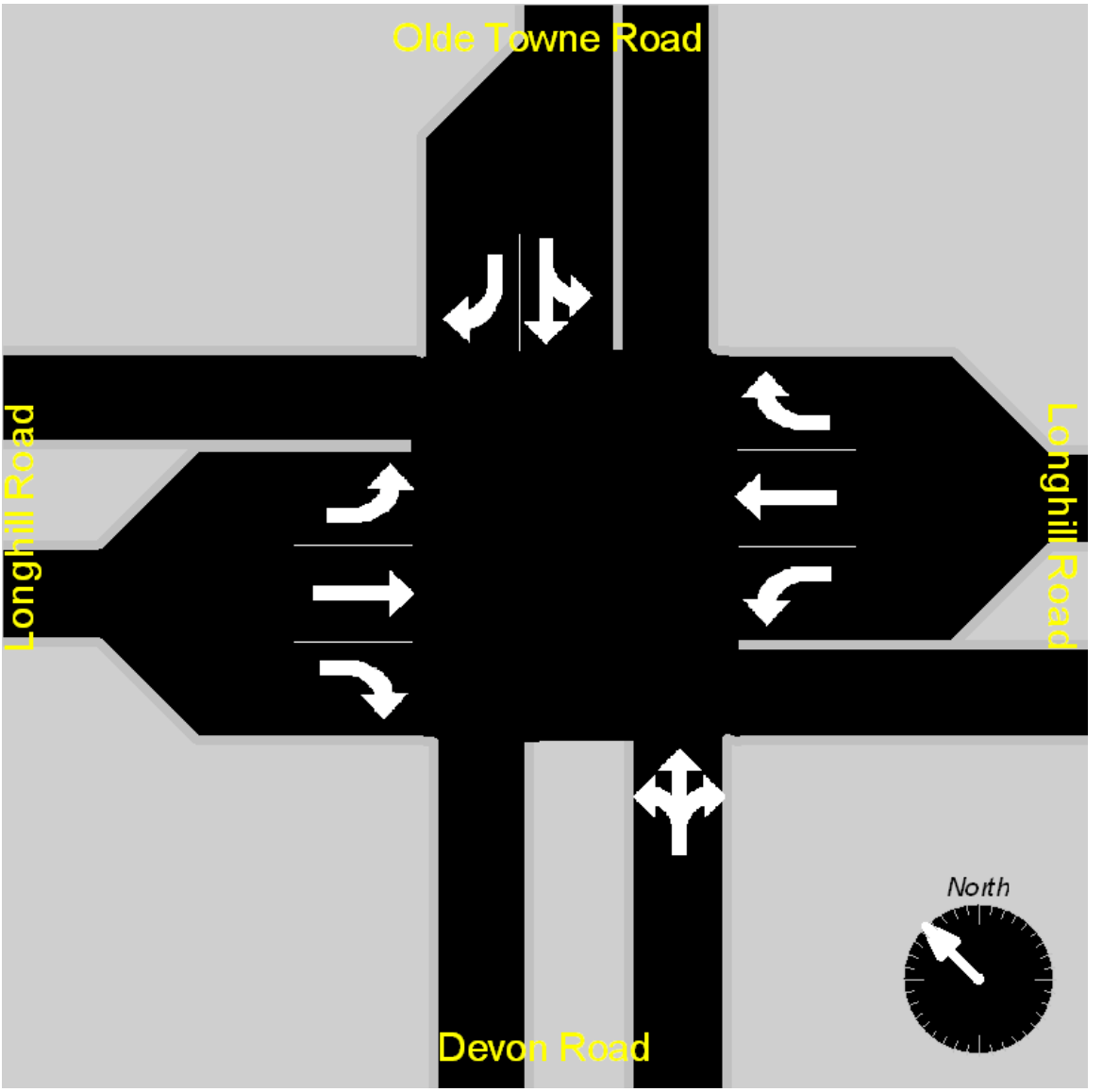
	Olde Towne Road From North					Longhill Road From East					Devon Road From South					Longhill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	94	**3**	**96**	0	**193**	50	**199**	5	0	254	3	**5**	**2**	0	10	0	113	50	0	163	**620**
05:15 PM	87	1	59	0	147	**89**	186	9	0	**284**	9	5	1	0	**15**	**2**	**125**	44	0	171	617
05:30 PM	**106**	3	55	0	164	63	190	**15**	0	268	5	1	1	0	7	2	113	42	0	157	596
05:45 PM	62	3	51	0	116	70	173	10	0	253	**11**	2	1	0	14	0	115	**63**	0	**178**	561
Total Volume	349	10	261	0	620	272	748	39	0	1059	28	13	5	0	46	4	466	199	0	669	2394
% App. Total	56.3	1.6	42.1	0		25.7	70.6	3.7	0		60.9	28.3	10.9	0		0.6	69.7	29.7	0		
PHF	.823	.833	.680	.000	.803	.764	.940	.650	.000	.932	.636	.650	.625	.000	.767	.500	.932	.790	.000	.940	.965



VDOT
Eastern Region
Traffic Engineering

Intersection of Route 612 (Longhill Road
with Route 658 (Olde Towne Road)
and Route 1517 (Devon Road)
1.13 AADT Adjustment Factor Applied

File Name : longhill&oldetown&devonrd
Site Code : 00000000
Start Date : 6/29/2011
Page No : 6



VDOT
Eastern Region
Traffic Engineering

Signal Warrants - Summary

Major Street Approaches

Northbound: **SR 612**
Number of Lanes: **2**
85% Speed > 40 MPH.
Total Approach Volume: **4,421**

Southbound: **SR 612**
Number of Lanes: **2**
85% Speed > 40 MPH.
Total Approach Volume: **5,207**

Minor Street Approaches

Eastbound: **SR 1530**
Number of Lanes: **1**

Total Approach Volume: **1,176**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Eight Hour Vehicular Volumes ..... **Satisfied**

Warrant 1A - Minimum Vehicular Volume .....**Not Satisfied**
Required volumes reached for 4 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic .....**Satisfied**
Required volumes reached for 10 hours, 8 are needed

Warrant 1 A&B - Combination of Warrants .....**Satisfied**
Required volumes reached for 8 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... **Satisfied**
Number of hours (9) volumes exceed minimum < minimum required (4).

Warrant 3 - Peak Hour ..... **Satisfied**

Warrant 3A - Peak Hour Delay .....**Satisfied**
Number of hours (13) volumes exceed minimum >= required (1). Delay data not evaluated.

Warrant 3B - Peak Hour Volumes .....**Satisfied**
Volumes exceed minimums for at least one hour.

Warrant 4 - Pedestrian Volumes ..... **Not Evaluated**

Warrant 5 - School Crossing ..... **Not Evaluated**

Warrant 6 - Coordinated Signal System ..... **Not Evaluated**

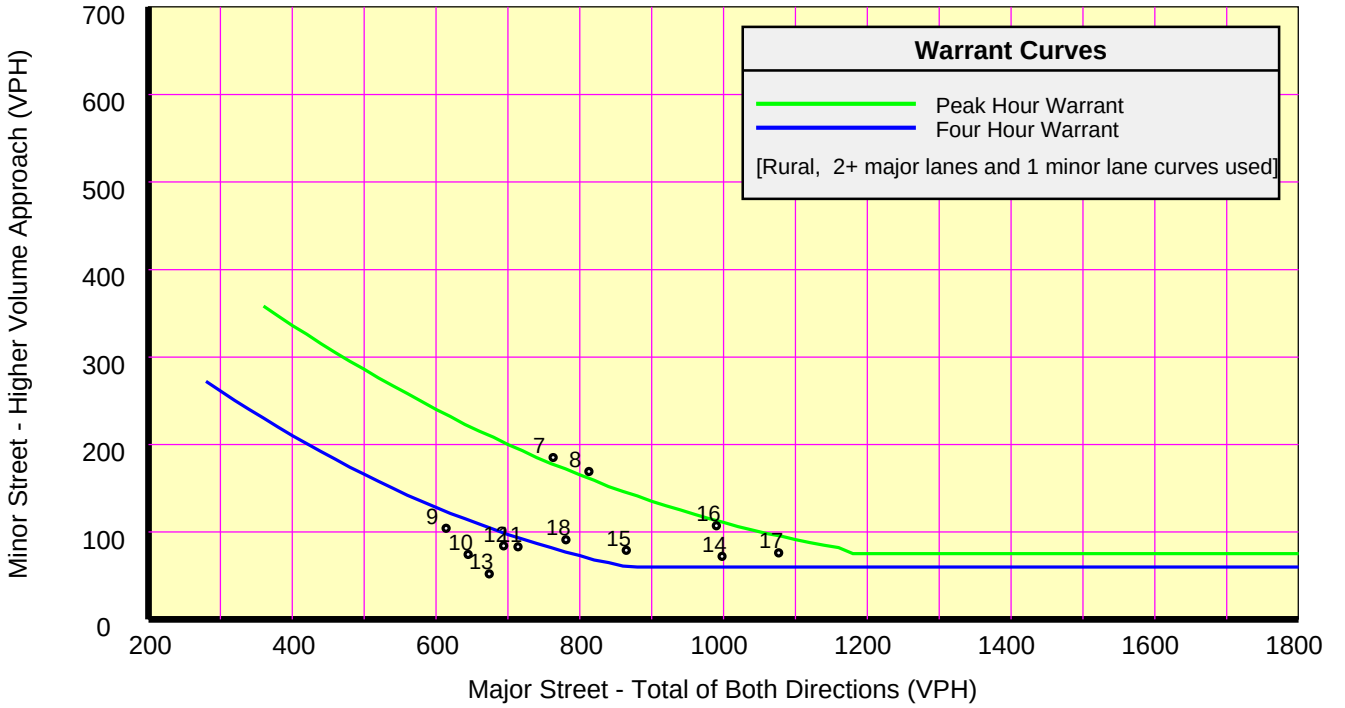
Warrant 7 - Crash Experience ..... **Not Satisfied**
Number of accidents (0) is less than minimum (5). Volume minimums are met.

Warrant 8 - Roadway Network ..... **Not Evaluated**

Warrant 9 - Intersection Near a Grade Crossing ..... **Not Evaluated**

VDOT
Eastern Region
Traffic Engineering

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

War 1A-Minimum Volume

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 420	Min 105
16:00	990	107	EB	Yes	Yes
07:45	785	177	EB	Yes	Yes
08:45	697	122	EB	Yes	Yes
06:45	581	136	EB	Yes	Yes
17:00	1,077	76	EB	Yes	No
14:15	1,038	83	EB	Yes	No
17:15	1,035	80	EB	Yes	No
14:00	998	72	EB	Yes	No
14:30	980	79	EB	Yes	No
15:45	943	102	EB	Yes	No
17:30	922	83	EB	Yes	No
15:30	916	95	EB	Yes	No
14:45	904	89	EB	Yes	No
15:15	877	81	EB	Yes	No
13:45	869	57	EB	Yes	No
15:00	865	79	EB	Yes	No
17:45	858	91	EB	Yes	No
18:00	781	91	EB	Yes	No
13:30	757	51	EB	Yes	No
11:30	741	88	EB	Yes	No
11:15	741	84	EB	Yes	No
11:45	723	87	EB	Yes	No
12:45	720	60	EB	Yes	No
12:15	720	84	EB	Yes	No

War 1B-Interruption of Traffic

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 630	Min 53
16:45	1,097	75	EB	Yes	Yes
15:45	943	102	EB	Yes	Yes
14:45	904	89	EB	Yes	Yes
13:45	869	57	EB	Yes	Yes
17:45	858	91	EB	Yes	Yes
08:00	813	169	EB	Yes	Yes
07:00	763	185	EB	Yes	Yes
11:00	714	83	EB	Yes	Yes
12:00	694	84	EB	Yes	Yes
10:00	645	74	EB	Yes	Yes
13:30	757	51	EB	Yes	No
13:00	674	52	EB	Yes	No
13:15	662	46	EB	Yes	No
09:30	621	82	EB	No	Yes
09:00	614	104	EB	No	Yes
09:15	602	86	EB	No	Yes
09:45	598	75	EB	No	Yes
06:45	581	136	EB	No	Yes
06:30	408	79	EB	No	Yes
06:15	252	37	EB	No	No
18:45	156	24	EB	No	No
22:45	0	0	W	No	No
22:30	0	0	W	No	No
22:15	0	0	W	No	No

War 1C-Combination of Warrants

Hour Begin	Major Total	Minor Vol	Minor Dir	Maj 504	Min 84
15:45	943	102	EB	Yes	Yes
14:45	904	89	EB	Yes	Yes
17:45	858	91	EB	Yes	Yes
07:45	785	177	EB	Yes	Yes
11:15	741	84	EB	Yes	Yes
12:15	720	84	EB	Yes	Yes
08:45	697	122	EB	Yes	Yes
06:45	581	136	EB	Yes	Yes
16:45	1,097	75	EB	Yes	No
17:00	1,077	76	EB	Yes	No
14:15	1,038	83	EB	Yes	No
17:15	1,035	80	EB	Yes	No
14:00	998	72	EB	Yes	No
14:30	980	79	EB	Yes	No
17:30	922	83	EB	Yes	No
13:45	869	57	EB	Yes	No
13:30	757	51	EB	Yes	No
11:00	714	83	EB	Yes	No
10:45	697	81	EB	Yes	No
10:30	665	74	EB	Yes	No
13:15	662	46	EB	Yes	No
10:00	645	74	EB	Yes	No
10:15	638	75	EB	Yes	No
09:45	598	75	EB	Yes	No

VDOT
Eastern Region
Traffic Engineering

File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 1

Groups Printed- PC - HV

	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	1	4	0	5	6	19	0	25	25	2	0	27	57
06:15 AM	3	0	0	3	11	34	0	45	33	1	0	34	82
06:30 AM	1	3	0	4	30	34	0	64	37	5	0	42	110
06:45 AM	11	13	0	24	119	63	0	182	80	40	0	120	326
Total	16	20	0	36	166	150	0	316	175	48	0	223	575
07:00 AM	19	59	0	78	122	55	0	177	74	58	0	132	387
07:15 AM	13	26	0	39	15	66	0	81	74	5	0	79	199
07:30 AM	2	4	0	6	7	77	0	84	100	4	0	104	194
07:45 AM	1	5	0	6	6	91	0	97	123	2	0	125	228
Total	35	94	0	129	150	289	0	439	371	69	0	440	1008
08:00 AM	1	4	0	5	5	92	0	97	98	4	0	102	204
08:15 AM	2	4	0	6	9	97	0	106	92	3	0	95	207
08:30 AM	3	4	0	7	8	103	0	111	129	4	0	133	251
08:45 AM	3	13	0	16	11	97	0	108	136	3	0	139	263
Total	9	25	0	34	33	389	0	422	455	14	0	469	925
09:00 AM	2	5	0	7	5	67	0	72	85	5	0	90	169
09:15 AM	3	7	0	10	6	78	0	84	84	5	0	89	183
09:30 AM	5	10	0	15	3	61	0	64	88	2	0	90	169
09:45 AM	0	4	0	4	5	78	0	83	69	2	0	71	158
Total	10	26	0	36	19	284	0	303	326	14	0	340	679
10:00 AM	1	9	0	10	8	63	0	71	74	2	0	76	157
10:15 AM	6	10	0	16	9	75	0	84	68	2	0	70	170
10:30 AM	3	5	0	8	9	63	0	72	59	1	0	60	140
10:45 AM	3	5	0	8	16	65	0	81	71	6	0	77	166
Total	13	29	0	42	42	266	0	308	272	11	0	283	633
11:00 AM	1	8	0	9	9	67	0	76	73	3	0	76	161
11:15 AM	2	4	0	6	8	70	0	78	73	5	0	78	162
11:30 AM	1	7	0	8	2	92	0	94	84	0	0	84	186
11:45 AM	0	1	0	1	3	67	0	70	72	0	0	72	143
Total	4	20	0	24	22	296	0	318	302	8	0	310	652
12:00 PM	1	2	0	3	5	87	0	92	104	1	0	105	200
12:15 PM	2	8	0	10	2	83	0	85	77	1	0	78	173
12:30 PM	0	2	0	2	9	57	0	66	82	1	0	83	151
12:45 PM	8	12	0	20	11	77	0	88	72	4	0	76	184
Total	11	24	0	35	27	304	0	331	335	7	0	342	708
01:00 PM	1	8	0	9	5	61	0	66	81	2	0	83	158
01:15 PM	4	7	0	11	5	77	0	82	68	1	0	69	162
01:30 PM	2	6	0	8	7	75	0	82	69	3	0	72	162
01:45 PM	4	7	0	11	12	75	0	87	73	4	0	77	175
Total	11	28	0	39	29	288	0	317	291	10	0	301	657
02:00 PM	14	26	0	40	20	70	0	90	61	8	0	69	199
02:15 PM	15	55	0	70	30	89	0	119	81	10	0	91	280
02:30 PM	29	81	0	110	13	89	0	102	74	3	0	77	289
02:45 PM	5	21	0	26	12	116	0	128	87	3	0	90	244
Total	63	183	0	246	75	364	0	439	303	24	0	327	1012

VDOT
Eastern Region
Traffic Engineering

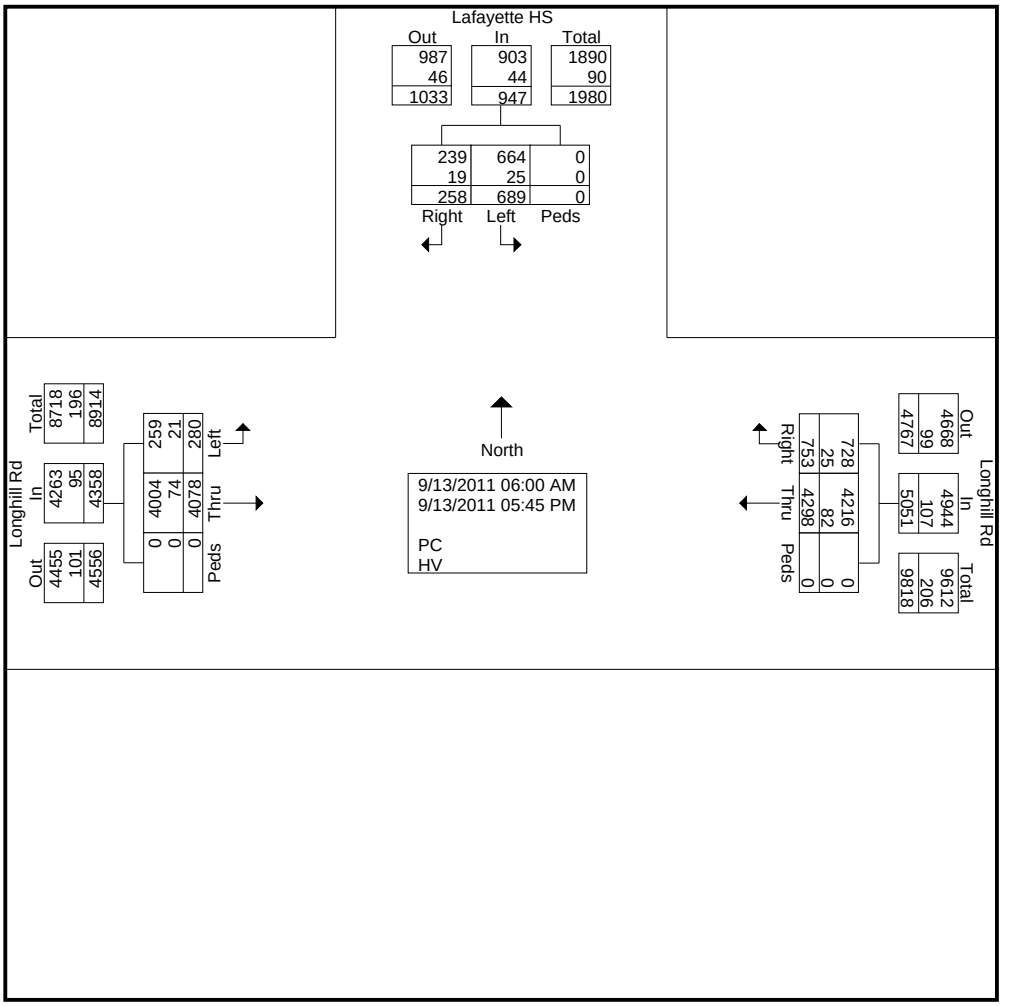
File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 2

Groups Printed- PC - HV

	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	6	20	0	26	11	111	0	122	92	6	0	98	246
03:15 PM	4	11	0	15	5	86	0	91	96	4	0	100	206
03:30 PM	5	15	0	20	10	114	0	124	101	3	0	104	248
03:45 PM	6	18	0	24	13	134	0	147	77	4	0	81	252
Total	21	64	0	85	39	445	0	484	366	17	0	383	952
04:00 PM	4	10	0	14	18	102	0	120	111	7	0	118	252
04:15 PM	12	43	0	55	20	122	0	142	124	7	0	131	328
04:30 PM	12	31	0	43	29	131	0	160	98	9	0	107	310
04:45 PM	13	41	0	54	26	142	0	168	91	9	0	100	322
Total	41	125	0	166	93	497	0	590	424	32	0	456	1212
05:00 PM	11	34	0	45	19	206	0	225	106	7	0	113	383
05:15 PM	2	8	0	10	11	198	0	209	113	13	0	126	345
05:30 PM	6	3	0	9	13	172	0	185	124	4	0	128	322
05:45 PM	5	6	0	11	15	150	0	165	115	2	0	117	293
Total	24	51	0	75	58	726	0	784	458	26	0	484	1343
Grand Total	258	689	0	947	753	4298	0	5051	4078	280	0	4358	10356
Apprch %	27.2	72.8	0		14.9	85.1	0		93.6	6.4	0		
Total %	2.5	6.7	0	9.1	7.3	41.5	0	48.8	39.4	2.7	0	42.1	
PC	239	664	0	903	728	4216	0	4944	4004	259	0	4263	10110
% PC	92.6	96.4	0	95.4	96.7	98.1	0	97.9	98.2	92.5	0	97.8	97.6
HV	19	25	0	44	25	82	0	107	74	21	0	95	246
% HV	7.4	3.6	0	4.6	3.3	1.9	0	2.1	1.8	7.5	0	2.2	2.4

VDOT
Eastern Region
Traffic Engineering

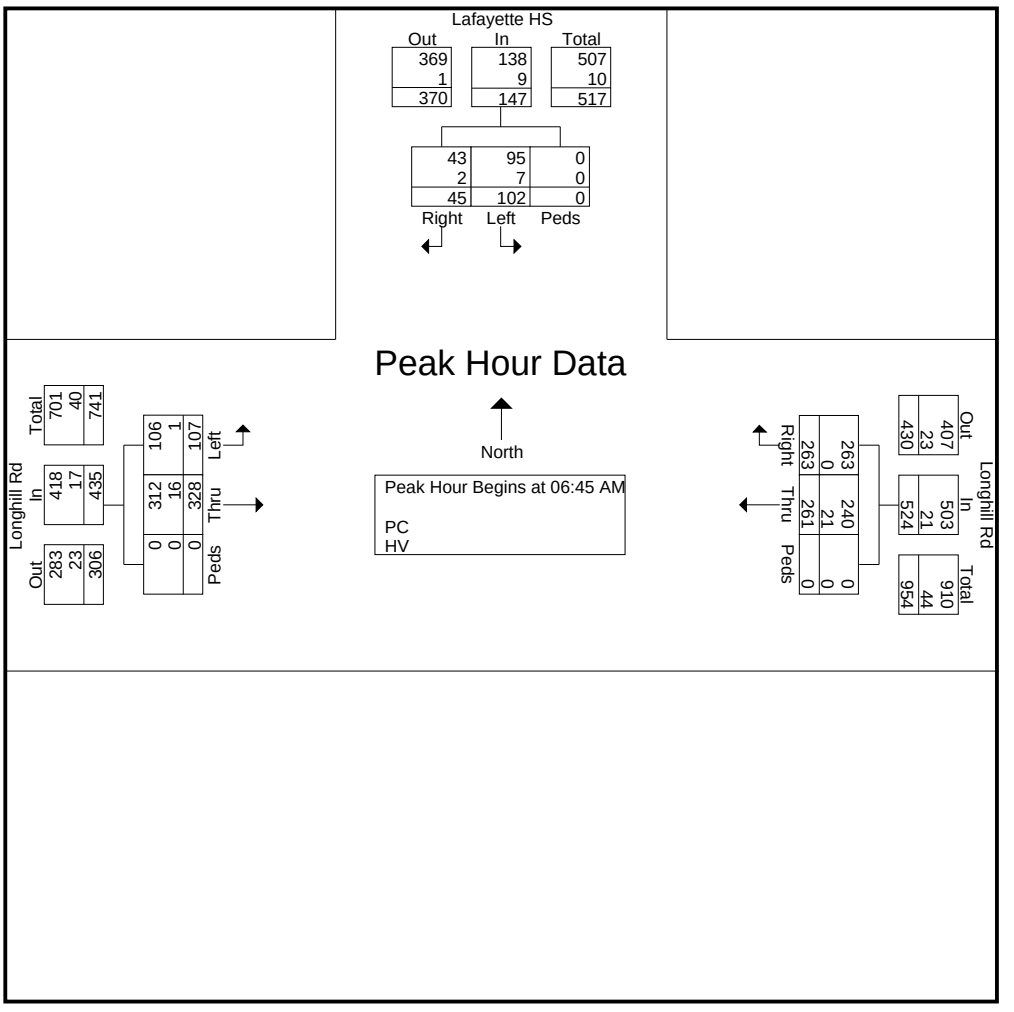
File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 3



VDOT
Eastern Region
Traffic Engineering

File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 4

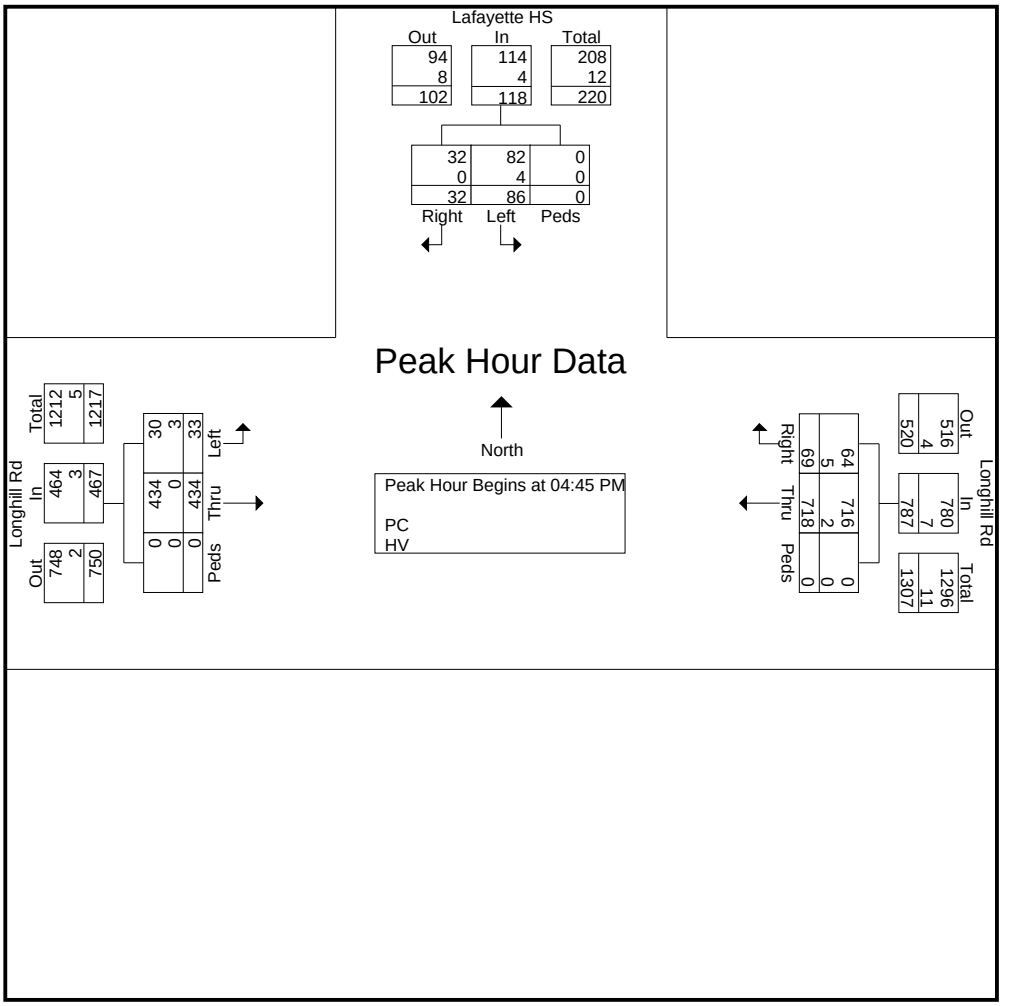
	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:00 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 06:45 AM													
06:45 AM	11	13	0	24	119	63	0	**182**	80	40	0	120	326
07:00 AM	**19**	**59**	0	**78**	**122**	55	0	177	74	**58**	0	**132**	**387**
07:15 AM	13	26	0	39	15	66	0	81	74	5	0	79	199
07:30 AM	2	4	0	6	7	**77**	0	84	**100**	4	0	104	194
Total Volume	45	102	0	147	263	261	0	524	328	107	0	435	1106
% App. Total	30.6	69.4	0		50.2	49.8	0		75.4	24.6	0		
PHF	.592	.432	.000	.471	.539	.847	.000	.720	.820	.461	.000	.824	.714
PC	43	95	0	138	263	240	0	503	312	106	0	418	1059
% PC	95.6	93.1	0	93.9	100	92.0	0	96.0	95.1	99.1	0	96.1	95.8
HV	2	7	0	9	0	21	0	21	16	1	0	17	47
% HV	4.4	6.9	0	6.1	0	8.0	0	4.0	4.9	0.9	0	3.9	4.2



VDOT
Eastern Region
Traffic Engineering

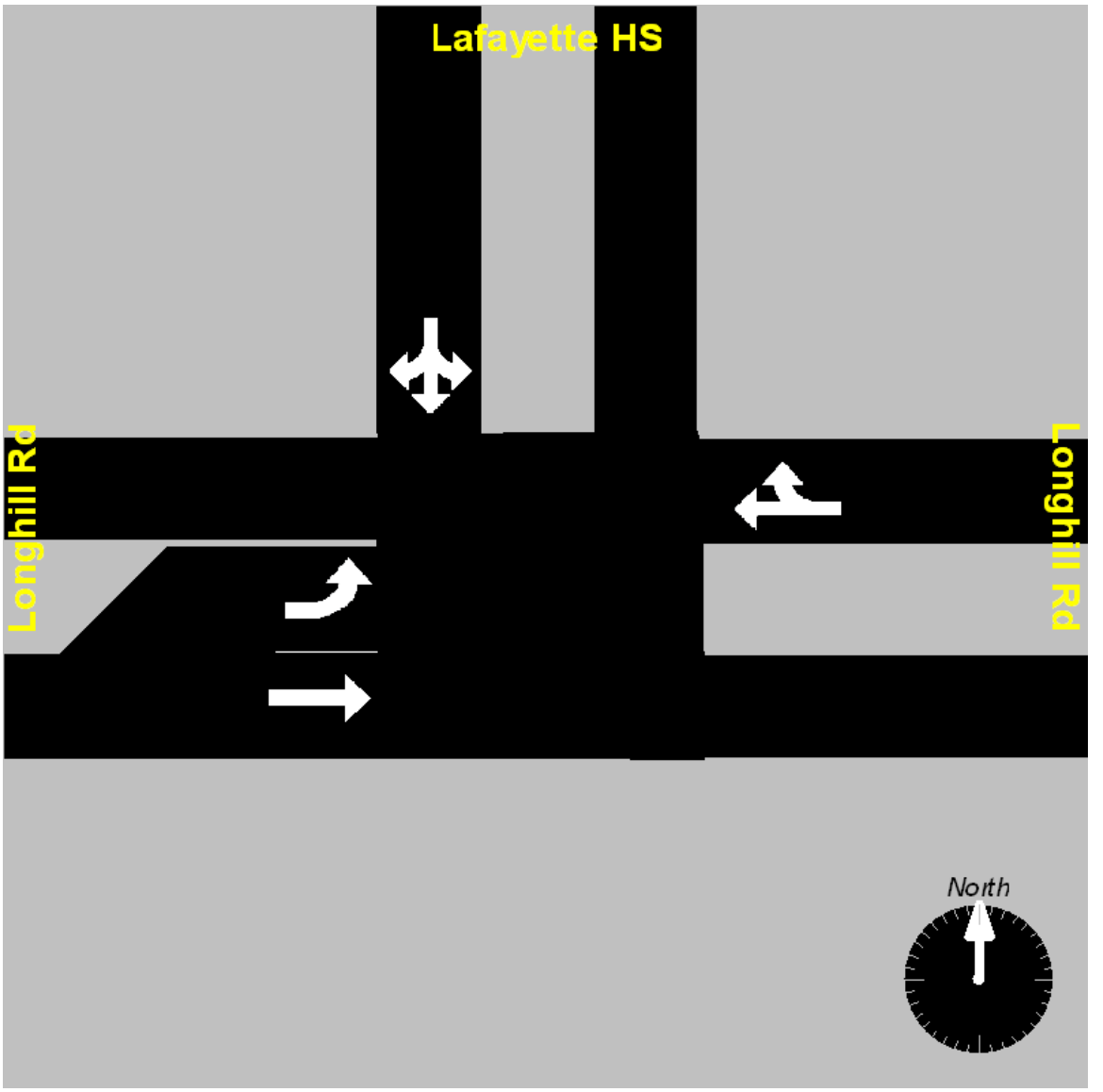
File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 5

	Lafayette HS From North				Longhill Rd From East				Longhill Rd From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:15 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	**13**	**41**	0	**54**	**26**	142	0	168	91	9	0	100	322
05:00 PM	11	34	0	45	19	**206**	0	**225**	106	7	0	113	**383**
05:15 PM	2	8	0	10	11	198	0	209	113	**13**	0	126	345
05:30 PM	6	3	0	9	13	172	0	185	**124**	4	0	**128**	322
Total Volume	32	86	0	118	69	718	0	787	434	33	0	467	1372
% App. Total	27.1	72.9	0		8.8	91.2	0		92.9	7.1	0		
PHF	.615	.524	.000	.546	.663	.871	.000	.874	.875	.635	.000	.912	.896
PC	32	82	0	114	64	716	0	780	434	30	0	464	1358
% PC	100	95.3	0	96.6	92.8	99.7	0	99.1	100	90.9	0	99.4	99.0
HV	0	4	0	4	5	2	0	7	0	3	0	3	14
% HV	0	4.7	0	3.4	7.2	0.3	0	0.9	0	9.1	0	0.6	1.0



VDOT
Eastern Region
Traffic Engineering

File Name : LayfetteHS&612
Site Code : 00712000
Start Date : 9/13/2011
Page No : 6



VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 1

Groups Printed- PC - HV

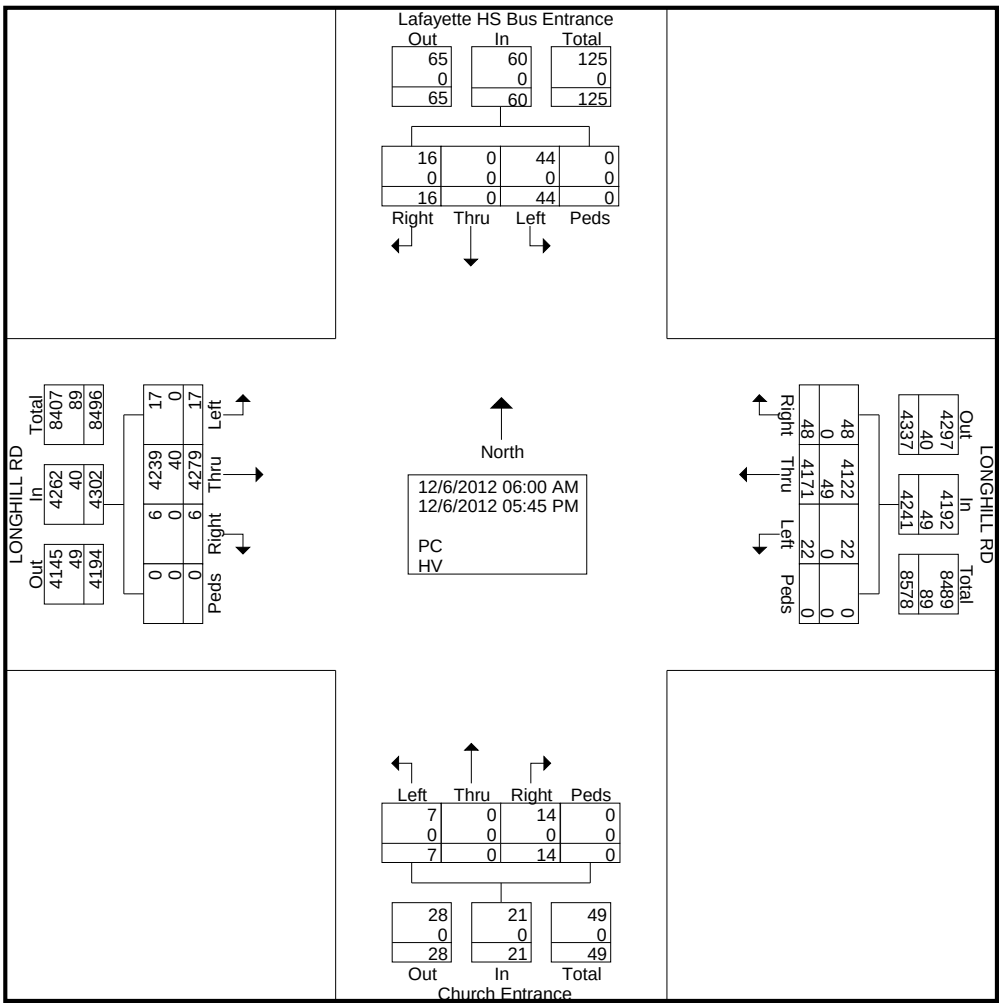
	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	25	0	0	25	43
06:15 AM	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	34	0	0	34	55
06:30 AM	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	55	0	0	55	90
06:45 AM	0	0	0	0	0	16	56	0	0	72	0	0	0	0	0	0	75	1	0	76	148
Total	0	0	0	0	0	16	130	0	0	146	0	0	0	0	0	0	189	1	0	190	336
07:00 AM	6	0	17	0	23	3	58	2	0	63	2	0	0	0	2	0	122	3	0	125	213
07:15 AM	2	0	0	0	2	1	82	0	0	83	0	0	0	0	0	0	78	1	0	79	164
07:30 AM	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	0	103	0	0	103	179
07:45 AM	0	0	0	0	0	0	101	0	0	101	0	0	0	0	0	0	112	0	0	112	213
Total	8	0	17	0	25	4	317	2	0	323	2	0	0	0	2	0	415	4	0	419	769
08:00 AM	0	0	0	0	0	0	77	0	0	77	0	0	0	0	0	0	110	0	0	110	187
08:15 AM	0	0	0	0	0	0	86	2	0	88	0	0	0	0	0	0	80	0	0	80	168
08:30 AM	0	0	0	0	0	0	104	1	0	105	0	0	0	0	0	0	114	0	0	114	219
08:45 AM	0	0	0	0	0	1	83	0	0	84	0	0	0	0	0	0	108	0	0	108	192
Total	0	0	0	0	0	1	350	3	0	354	0	0	0	0	0	0	412	0	0	412	766
09:00 AM	1	0	0	0	1	0	88	0	0	88	1	0	0	0	1	1	90	0	0	91	181
09:15 AM	0	0	0	0	0	0	77	1	0	78	0	0	0	0	0	0	116	0	0	116	194
09:30 AM	0	0	0	0	0	0	69	1	0	70	0	0	0	0	0	0	81	0	0	81	151
09:45 AM	0	0	1	0	1	1	68	0	0	69	0	0	0	0	0	1	89	1	0	91	161
Total	1	0	1	0	2	1	302	2	0	305	1	0	0	0	1	2	376	1	0	379	687
10:00 AM	0	0	0	0	0	1	80	1	0	82	0	0	0	0	0	0	90	0	0	90	172
10:15 AM	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	0	82	0	0	82	158
10:30 AM	0	0	0	0	0	0	73	0	0	73	0	0	1	0	1	1	63	0	0	64	138
10:45 AM	0	0	1	0	1	1	61	1	0	63	0	0	0	0	0	0	77	0	0	77	141
Total	0	0	1	0	1	2	290	2	0	294	0	0	1	0	1	1	312	0	0	313	609
11:00 AM	0	0	1	0	1	1	68	0	0	69	0	0	0	0	0	0	90	0	0	90	160
11:15 AM	0	0	0	0	0	0	72	1	0	73	0	0	0	0	0	0	92	0	0	92	165
11:30 AM	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	0	59	0	0	59	135
11:45 AM	0	0	0	0	0	1	84	0	0	85	0	0	0	0	0	0	84	0	0	84	169
Total	0	0	1	0	1	2	300	1	0	303	0	0	0	0	0	0	325	0	0	325	629
12:00 PM	1	0	1	0	2	0	91	0	0	91	1	0	0	0	1	0	87	1	0	88	182
12:15 PM	0	0	0	0	0	0	73	0	0	73	0	0	0	0	0	0	78	0	0	78	151
12:30 PM	0	0	0	0	0	0	72	0	0	72	0	0	0	0	0	0	60	0	0	60	132
12:45 PM	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	0	84	0	0	84	144
Total	1	0	1	0	2	0	296	0	0	296	1	0	0	0	1	0	309	1	0	310	609
01:00 PM	0	0	1	0	1	0	72	0	0	72	0	0	0	0	0	0	73	0	0	73	146
01:15 PM	0	0	0	0	0	0	77	1	0	78	0	0	0	0	0	0	82	0	0	82	160
01:30 PM	0	0	0	0	0	4	76	1	0	81	1	0	0	0	1	1	101	1	0	103	185
01:45 PM	0	0	2	0	2	1	68	0	0	69	1	0	0	0	1	0	61	1	0	62	134
Total	0	0	3	0	3	5	293	2	0	300	2	0	0	0	2	1	317	2	0	320	625
02:00 PM	0	0	0	0	0	12	95	0	0	107	0	0	0	0	0	0	93	6	0	99	206
02:15 PM	4	0	19	0	23	1	96	7	0	104	1	0	1	0	2	0	88	0	0	88	217
02:30 PM	0	0	0	0	0	2	95	0	0	97	1	0	1	0	2	0	88	0	0	88	187
02:45 PM	0	0	0	0	0	0	107	0	0	107	0	0	0	0	0	0	97	0	0	97	204
Total	4	0	19	0	23	15	393	7	0	415	2	0	2	0	4	0	366	6	0	372	814
03:00 PM	0	0	1	0	1	1	114	0	0	115	2	0	0	0	2	1	87	0	0	88	206
03:15 PM	1	0	0	0	1	0	103	0	0	103	0	0	0	0	0	0	104	0	0	104	208
03:30 PM	1	0	0	0	1	0	132	0	0	132	0	0	1	0	1	0	88	1	0	89	223
03:45 PM	0	0	0	0	0	0	134	0	0	134	1	0	1	0	2	0	106	0	0	106	242
Total	2	0	1	0	3	1	483	0	0	484	3	0	2	0	5	1	385	1	0	387	879

VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 2

Groups Printed- PC - HV

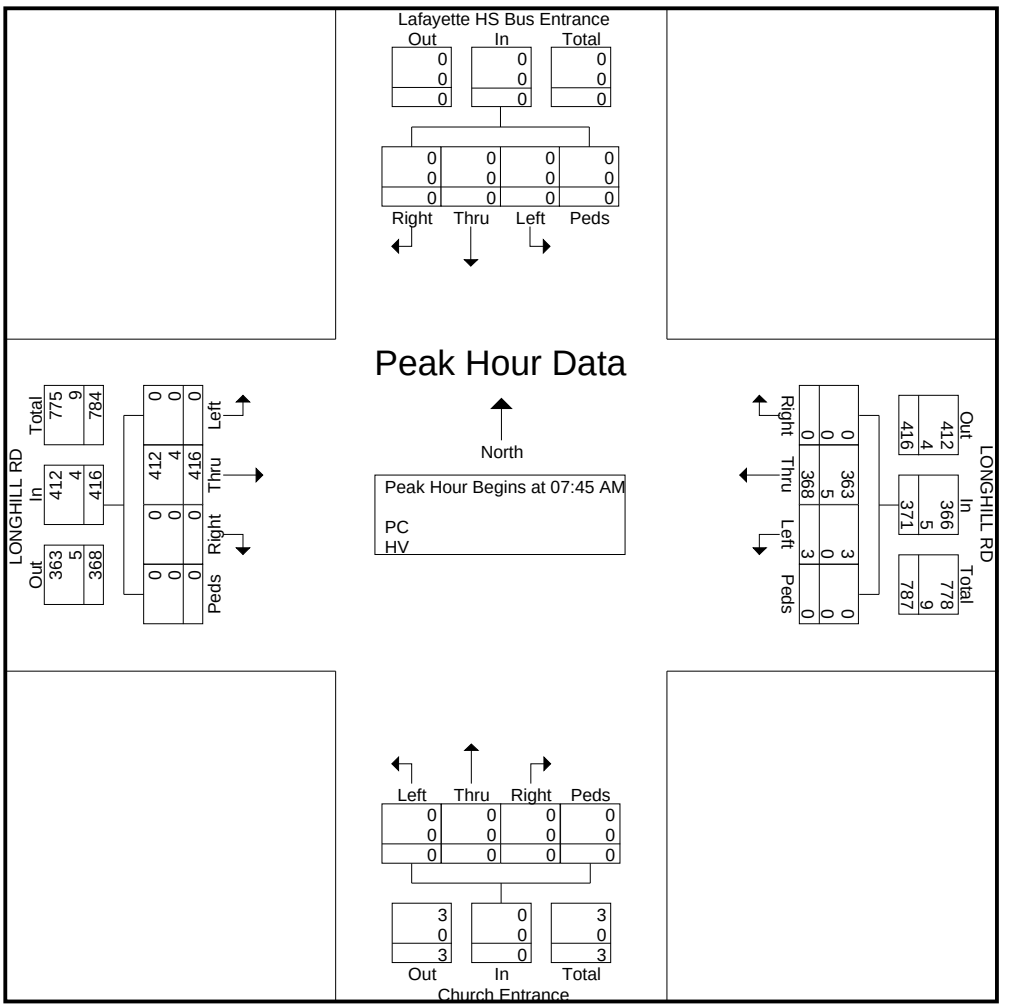
	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	96	0	0	96	0	0	0	0	0	0	105	0	0	105	201
04:15 PM	0	0	0	0	0	1	150	1	0	152	3	0	0	0	3	0	92	0	0	92	247
04:30 PM	0	0	0	0	0	0	112	0	0	112	0	0	1	0	1	0	99	0	0	99	212
04:45 PM	0	0	0	0	0	0	118	1	0	119	0	0	1	0	1	0	138	0	0	138	258
Total	0	0	0	0	0	1	476	2	0	479	3	0	2	0	5	0	434	0	0	434	918
05:00 PM	0	0	0	0	0	0	132	0	0	132	0	0	0	0	0	0	104	0	0	104	236
05:15 PM	0	0	0	0	0	0	147	1	0	148	0	0	0	0	0	1	125	0	0	126	274
05:30 PM	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	0	120	1	0	121	254
05:45 PM	0	0	0	0	0	0	129	0	0	129	0	0	0	0	0	0	90	0	0	90	219
Total	0	0	0	0	0	0	541	1	0	542	0	0	0	0	0	1	439	1	0	441	983
Grand Total	16	0	44	0	60	48	4171	22	0	4241	14	0	7	0	21	6	4279	17	0	4302	8624
Apprch %	26.7	0	73.3	0		1.1	98.3	0.5	0		66.7	0	33.3	0		0.1	99.5	0.4	0		
Total %	0.2	0	0.5	0	0.7	0.6	48.4	0.3	0	49.2	0.2	0	0.1	0	0.2	0.1	49.6	0.2	0	49.9	
PC	16	0	44	0	60	48	4122	22	0	4192	14	0	7	0	21	6	4239	17	0	4262	8535
% PC	100	0	100	0	100	100	98.8	100	0	98.8	100	0	100	0	100	100	99.1	100	0	99.1	99
HV	0	0	0	0	0	0	49	0	0	49	0	0	0	0	0	0	40	0	0	40	89
% HV	0	0	0	0	0	0	1.2	0	0	1.2	0	0	0	0	0	0	0.9	0	0	0.9	1



VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 3

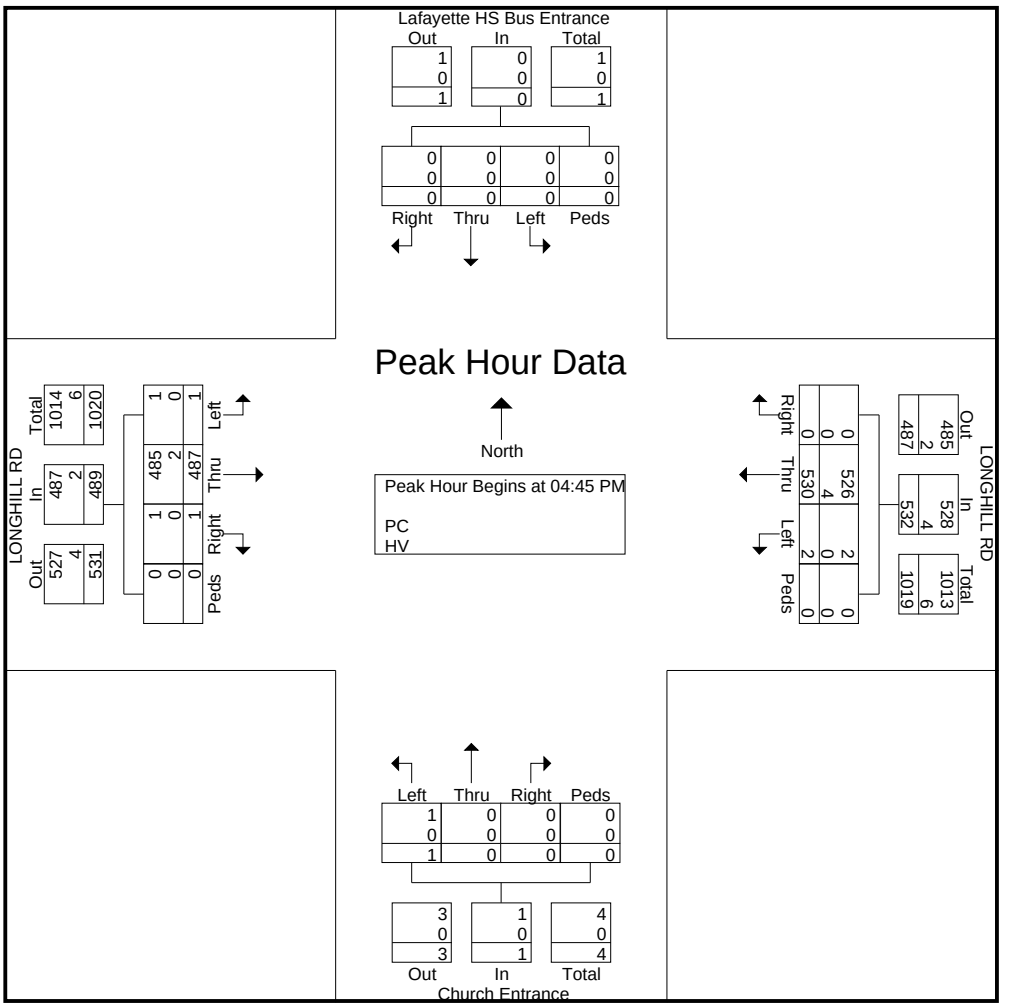
	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	101	0	0	101	0	0	0	0	0	0	112	0	0	112	213
08:00 AM	0	0	0	0	0	0	77	0	0	77	0	0	0	0	0	0	110	0	0	110	187
08:15 AM	0	0	0	0	0	0	86	**2**	0	88	0	0	0	0	0	0	80	0	0	80	168
08:30 AM	0	0	0	0	0	0	**104**	1	0	**105**	0	0	0	0	0	0	**114**	0	0	**114**	**219**
Total Volume	0	0	0	0	0	0	368	3	0	371	0	0	0	0	0	0	416	0	0	416	787
% App. Total	0	0	0	0		0	99.2	0.8	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.885	.375	.000	.883	.000	.000	.000	.000	.000	.000	.912	.000	.000	.912	.898
PC	0	0	0	0	0	0	363	3	0	366	0	0	0	0	0	0	412	0	0	412	778
% PC	0	0	0	0	0	0	98.6	100	0	98.7	0	0	0	0	0	0	99.0	0	0	99.0	98.9
HV	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	9
% HV	0	0	0	0	0	0	1.4	0	0	1.3	0	0	0	0	0	0	1.0	0	0	1.0	1.1



VDOT
Eastern Region
Traffic Engineering

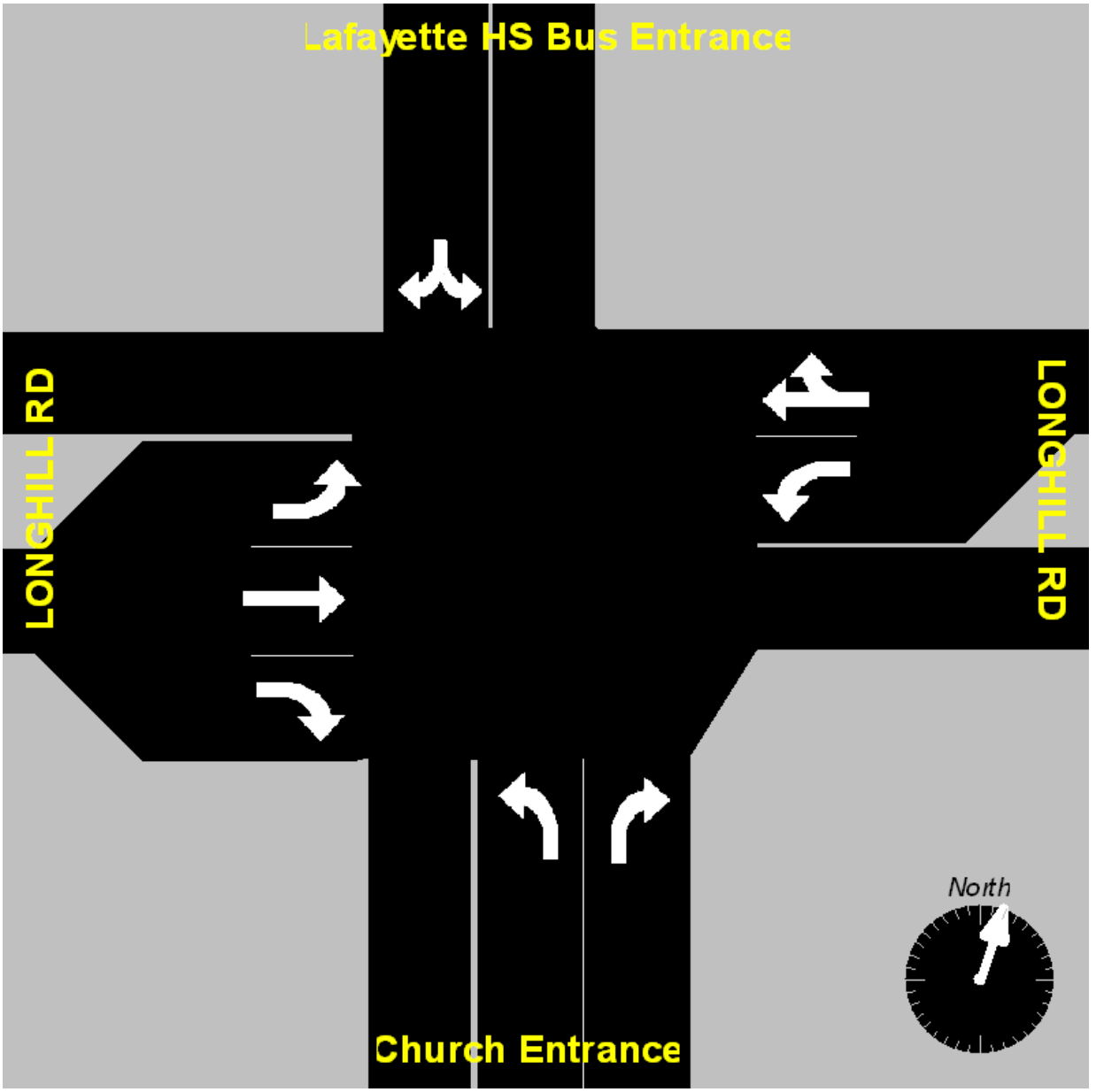
File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 4

	Lafayette HS Bus Entrance From North					LONGHILL RD From East					Church Entrance From South					LONGHILL RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	118	**1**	0	119	0	0	**1**	0	**1**	0	**138**	0	0	**138**	258
05:00 PM	0	0	0	0	0	0	132	0	0	132	0	0	0	0	0	0	104	0	0	104	236
05:15 PM	0	0	0	0	0	0	**147**	1	0	**148**	0	0	0	0	0	**1**	125	0	0	126	**274**
05:30 PM	0	0	0	0	0	0	133	0	0	133	0	0	0	0	0	0	120	**1**	0	121	254
Total Volume	0	0	0	0	0	0	530	2	0	532	0	0	1	0	1	1	487	1	0	489	1022
% App. Total	0	0	0	0		0	99.6	0.4	0		0	0	100	0		0.2	99.6	0.2	0		
PHF	.000	.000	.000	.000	.000	.000	.901	.500	.000	.899	.000	.000	.250	.000	.250	.250	.882	.250	.000	.886	.932
PC	0	0	0	0	0	0	526	2	0	528	0	0	1	0	1	1	485	1	0	487	1016
% PC	0	0	0	0	0	0	99.2	100	0	99.2	0	0	100	0	100	100	99.6	100	0	99.6	99.4
HV	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
% HV	0	0	0	0	0	0	0.8	0	0	0.8	0	0	0	0	0	0	0.4	0	0	0.4	0.6



VDOT
Eastern Region
Traffic Engineering

File Name : 612&busentco952012
Site Code : 00000000
Start Date : 12/6/2012
Page No : 5



VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 1

Groups Printed- PC - HV

	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	1	0	3	0	82	3	0	85	6	0	17	0	23	7	54	1	0	62	173
07:15 AM	1	0	1	0	2	0	58	9	0	67	2	0	13	0	15	5	68	0	0	73	157
07:30 AM	7	3	3	0	13	1	68	9	0	78	5	0	15	0	20	15	53	1	0	69	180
07:45 AM	10	0	2	0	12	0	77	10	0	87	10	0	23	0	33	15	91	0	0	106	238
Total	20	3	7	0	30	1	285	31	0	317	23	0	68	0	91	42	266	2	0	310	748
08:00 AM	3	1	1	0	5	2	82	8	0	92	6	0	16	0	22	10	60	1	0	71	190
08:15 AM	5	1	2	0	8	0	55	3	0	58	2	1	14	0	17	9	79	0	0	88	171
08:30 AM	6	0	0	0	6	2	108	6	0	116	2	0	15	0	17	15	72	0	0	87	226
08:45 AM	5	0	0	0	5	0	110	8	0	118	6	0	12	0	18	17	69	3	0	89	230
Total	19	2	3	0	24	4	355	25	0	384	16	1	57	0	74	51	280	4	0	335	817
09:00 AM	2	0	0	0	2	0	81	4	0	85	7	0	11	0	18	9	74	0	0	83	188
09:15 AM	4	0	2	0	6	0	74	7	0	81	4	0	7	0	11	9	56	0	0	65	163
09:30 AM	9	0	1	0	10	2	55	3	0	60	3	0	6	0	9	11	54	1	0	66	145
09:45 AM	7	1	4	0	12	0	82	2	0	84	2	0	8	0	10	9	70	3	0	82	188
Total	22	1	7	0	30	2	292	16	0	310	16	0	32	0	48	38	254	4	0	296	684
10:00 AM	4	0	0	0	4	1	58	1	0	60	5	2	8	0	15	11	43	2	0	56	135
10:15 AM	6	0	2	0	8	1	53	3	0	57	2	0	9	0	11	7	52	3	0	62	138
10:30 AM	3	1	2	0	6	1	69	4	0	74	2	1	6	0	9	14	41	1	0	56	145
10:45 AM	3	0	2	0	5	0	60	0	0	60	4	0	7	0	11	6	46	4	0	56	132
Total	16	1	6	0	23	3	240	8	0	251	13	3	30	0	46	38	182	10	0	230	550
11:00 AM	1	0	1	0	2	0	51	1	0	52	2	0	5	0	7	12	50	6	0	68	129
11:15 AM	2	0	0	0	2	0	53	5	0	58	7	0	16	0	23	8	55	3	0	66	149
11:30 AM	4	0	1	0	5	1	66	0	0	67	5	0	11	0	16	6	42	2	0	50	138
11:45 AM	2	0	2	0	4	1	62	2	0	65	2	0	6	0	8	12	82	7	0	101	178
Total	9	0	4	0	13	2	232	8	0	242	16	0	38	0	54	38	229	18	0	285	594
12:00 PM	4	0	0	0	4	2	59	2	0	63	1	1	9	0	11	6	59	4	0	69	147
12:15 PM	2	1	0	0	3	5	64	3	0	72	2	0	11	0	13	7	75	1	0	83	171
12:30 PM	5	0	2	0	7	2	69	3	0	74	2	0	8	0	10	7	48	4	0	59	150
12:45 PM	9	0	0	0	9	1	68	0	0	69	0	0	8	0	8	3	74	1	0	78	164
Total	20	1	2	0	23	10	260	8	0	278	5	1	36	0	42	23	256	10	0	289	632
01:00 PM	7	0	0	0	7	0	58	0	0	58	1	0	3	0	4	7	54	6	0	67	136
01:15 PM	2	0	0	0	2	2	63	3	0	68	1	0	5	0	6	9	71	4	0	84	160
01:30 PM	4	0	1	0	5	2	71	4	0	77	8	0	6	0	14	2	65	9	0	76	172
01:45 PM	4	0	1	0	5	0	82	0	0	82	3	0	4	0	7	5	66	2	0	73	167
Total	17	0	2	0	19	4	274	7	0	285	13	0	18	0	31	23	256	21	0	300	635
02:00 PM	5	0	1	0	6	2	78	3	0	83	1	0	8	0	9	3	69	4	0	76	174
02:15 PM	2	0	3	0	5	3	76	0	0	79	7	0	9	0	16	10	95	7	0	112	212
02:30 PM	0	1	1	0	2	1	62	2	0	65	4	0	9	0	13	22	83	5	0	110	190
02:45 PM	4	0	0	0	4	2	76	7	0	85	5	0	9	0	14	12	100	1	0	113	216
Total	11	1	5	0	17	8	292	12	0	312	17	0	35	0	52	47	347	17	0	411	792
03:00 PM	5	0	1	0	6	2	87	9	0	98	4	0	8	0	12	16	92	4	0	112	228
03:15 PM	2	1	2	0	5	4	91	11	0	106	5	1	7	0	13	23	80	5	0	108	232
03:30 PM	3	0	0	0	3	2	81	5	0	88	8	0	5	0	13	22	98	8	0	128	232
03:45 PM	3	0	1	0	4	2	77	5	0	84	9	0	7	0	16	18	108	4	0	130	234
Total	13	1	4	0	18	10	336	30	0	376	26	1	27	0	54	79	378	21	0	478	926
04:00 PM	0	0	0	0	0	1	85	20	0	106	6	0	19	0	25	22	100	6	0	128	259
04:15 PM	4	0	2	0	6	1	71	13	0	85	14	1	17	0	32	27	104	3	0	134	257

VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013

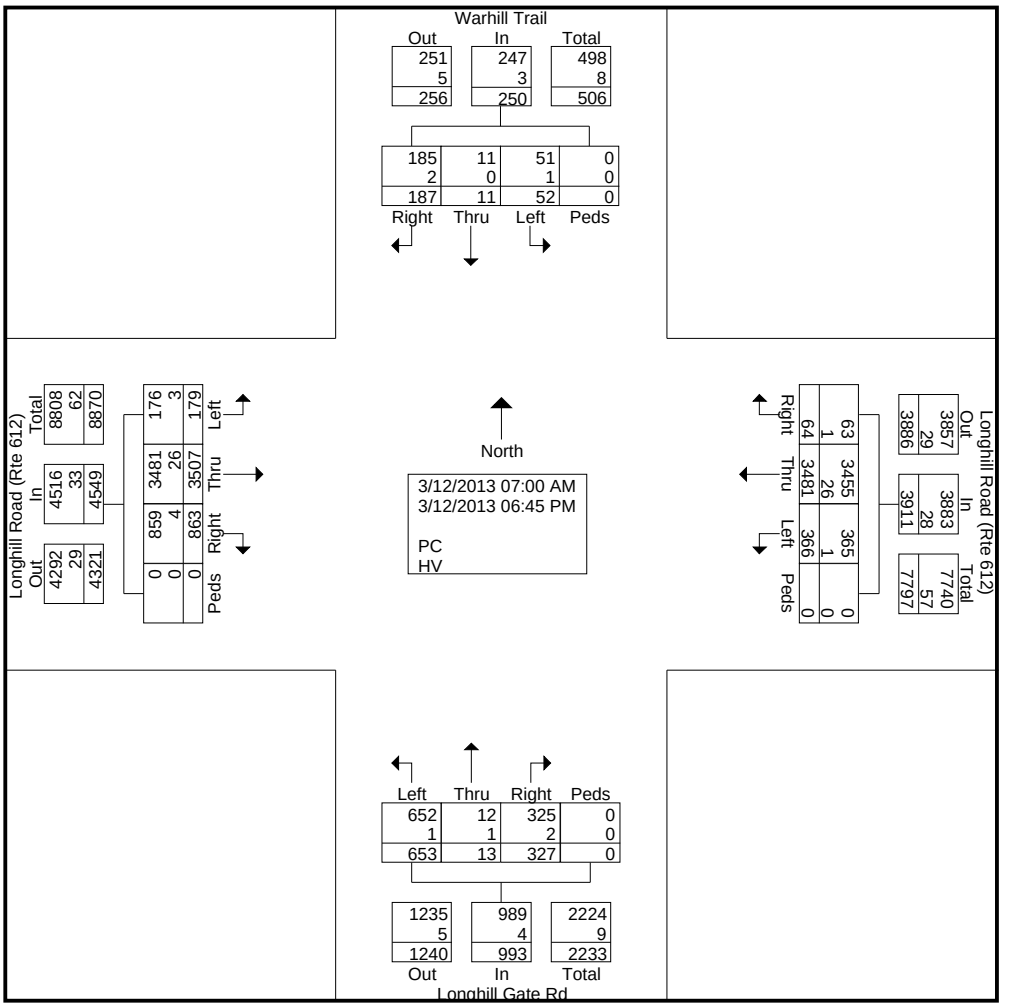
Groups Printed- PC - HV

	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:30 PM	5	0	2	0	7	0	86	5	0	91	11	0	21	0	32	20	87	5	0	112	242
04:45 PM	4	0	0	0	4	5	93	9	0	107	15	1	18	0	34	27	105	9	0	141	286
Total	13	0	4	0	17	7	335	47	0	389	46	2	75	0	123	96	396	23	0	515	1044
05:00 PM	4	0	2	0	6	3	59	19	0	81	17	0	20	0	37	52	99	8	0	159	283
05:15 PM	2	0	1	0	3	1	90	53	0	144	20	1	28	0	49	68	99	8	0	175	371
05:30 PM	4	0	1	0	5	1	89	20	0	110	14	1	45	0	60	54	95	7	0	156	331
05:45 PM	5	0	1	0	6	3	84	17	0	104	17	1	37	0	55	45	78	6	0	129	294
Total	15	0	5	0	20	8	322	109	0	439	68	3	130	0	201	219	371	29	0	619	1279
06:00 PM	2	0	1	0	3	2	65	13	0	80	21	0	26	0	47	30	76	5	0	111	241
06:15 PM	3	0	1	0	4	1	61	23	0	85	10	0	12	0	22	42	73	5	0	120	231
06:30 PM	0	1	1	0	2	1	67	13	0	81	15	2	25	0	42	53	64	2	0	119	244
06:45 PM	7	0	0	0	7	1	65	16	0	82	22	0	44	0	66	44	79	8	0	131	286
Total	12	1	3	0	16	5	258	65	0	328	68	2	107	0	177	169	292	20	0	481	1002
Grand Total	187	11	52	0	250	64	3481	366	0	3911	327	13	653	0	993	863	3507	179	0	4549	9703
Apprch %	74.8	4.4	20.8	0		1.6	89	9.4	0		32.9	1.3	65.8	0		19	77.1	3.9	0		
Total %	1.9	0.1	0.5	0	2.6	0.7	35.9	3.8	0	40.3	3.4	0.1	6.7	0	10.2	8.9	36.1	1.8	0	46.9	
PC	185	11	51	0	247	63	3455	365	0	3883	325	12	652	0	989	859	3481	176	0	4516	9635
% PC	98.9	100	98.1	0	98.8	98.4	99.3	99.7	0	99.3	99.4	92.3	99.8	0	99.6	99.5	99.3	98.3	0	99.3	99.3
HV	2	0	1	0	3	1	26	1	0	28	2	1	1	0	4	4	26	3	0	33	68
% HV	1.1	0	1.9	0	1.2	1.6	0.7	0.3	0	0.7	0.6	7.7	0.2	0	0.4	0.5	0.7	1.7	0	0.7	0.7

VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 3

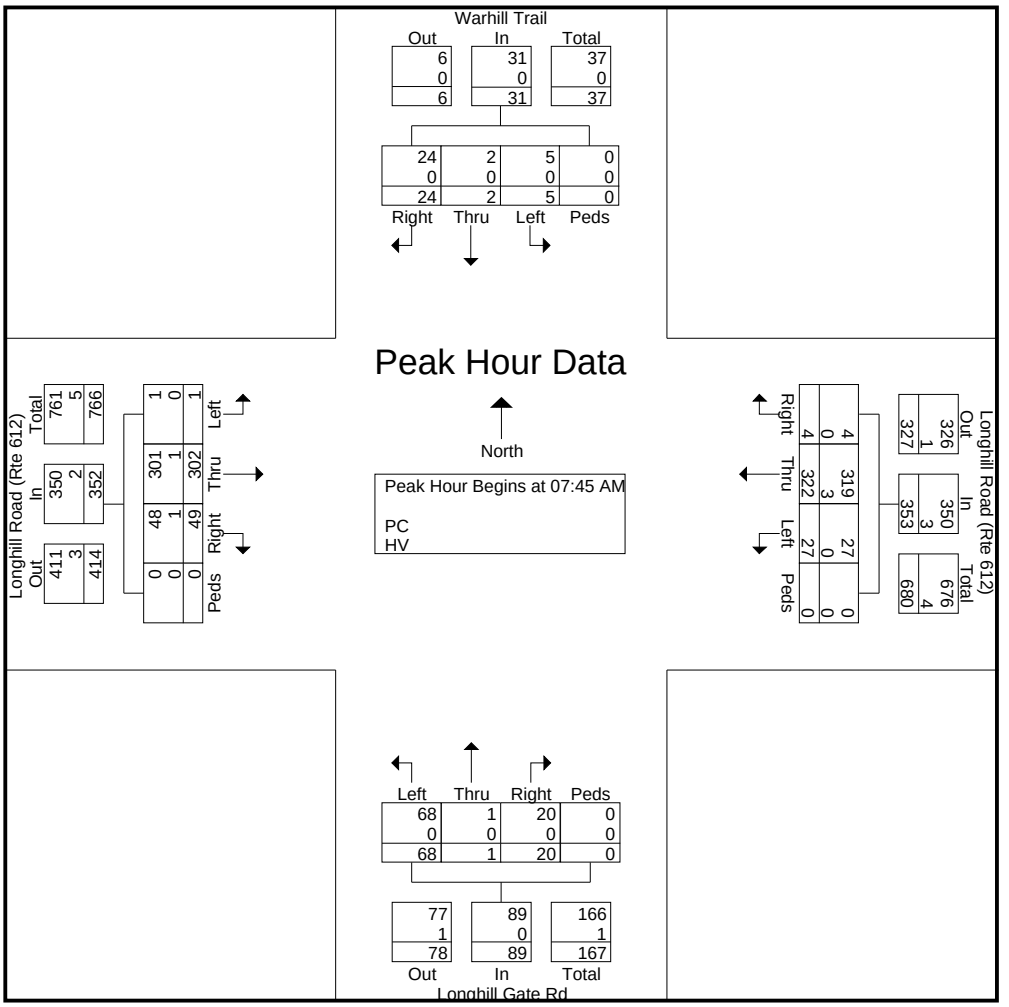


VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 4

	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**10**	0	**2**	0	**12**	0	77	**10**	0	87	**10**	0	**23**	0	**33**	**15**	**91**	0	0	**106**	**238**
08:00 AM	3	**1**	1	0	5	**2**	82	8	0	92	6	0	16	0	22	10	60	**1**	0	71	190
08:15 AM	5	1	2	0	8	0	55	3	0	58	2	**1**	14	0	17	9	79	0	0	88	171
08:30 AM	6	0	0	0	6	2	**108**	6	0	**116**	2	0	15	0	17	15	72	0	0	87	226
Total Volume	24	2	5	0	31	4	322	27	0	353	20	1	68	0	89	49	302	1	0	352	825
% App. Total	77.4	6.5	16.1	0		1.1	91.2	7.6	0		22.5	1.1	76.4	0		13.9	85.8	0.3	0		
PHF	.600	.500	.625	.000	.646	.500	.745	.675	.000	.761	.500	.250	.739	.000	.674	.817	.830	.250	.000	.830	.867
PC	24	2	5	0	31	4	319	27	0	350	20	1	68	0	89	48	301	1	0	350	820
% PC	100	100	100	0	100	100	99.1	100	0	99.2	100	100	100	0	100	98.0	99.7	100	0	99.4	99.4
HV	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	5
% HV	0	0	0	0	0	0	0.9	0	0	0.8	0	0	0	0	0	2.0	0.3	0	0	0.6	0.6

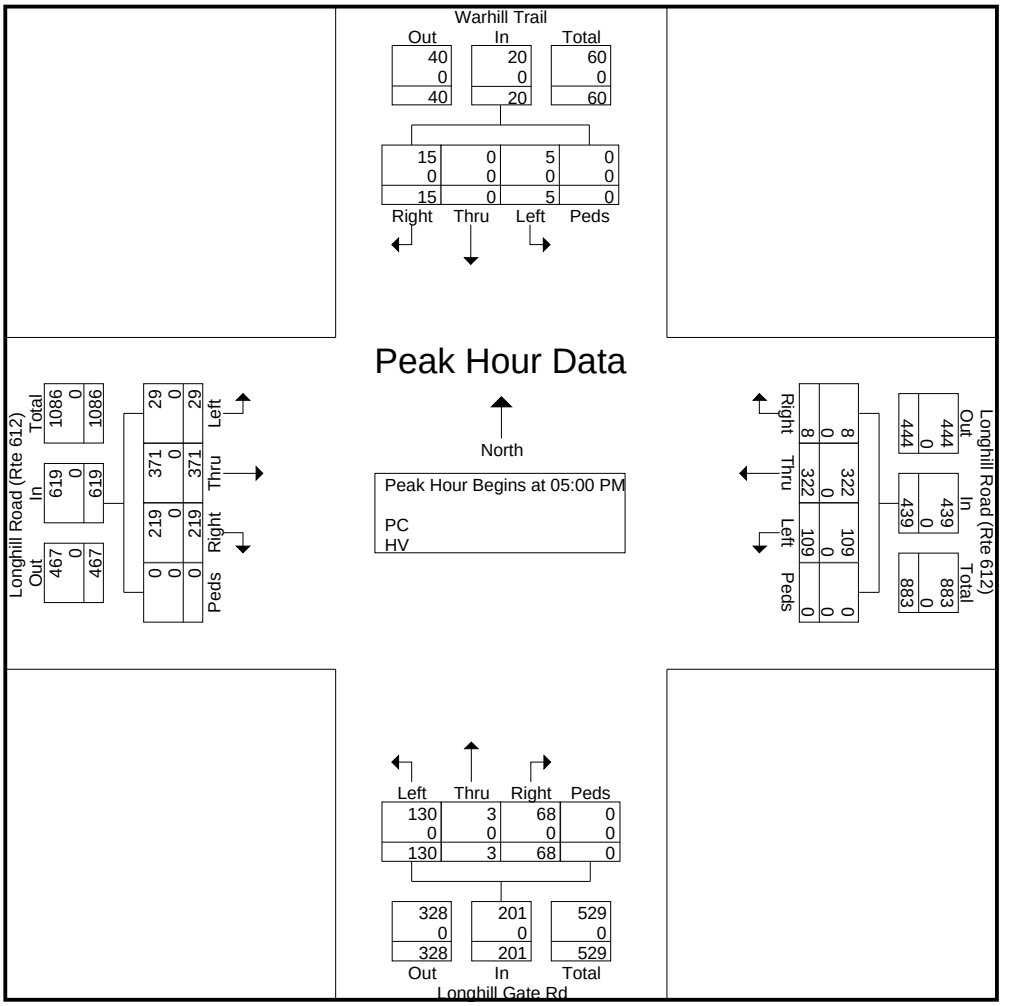


VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013
Page No : 5

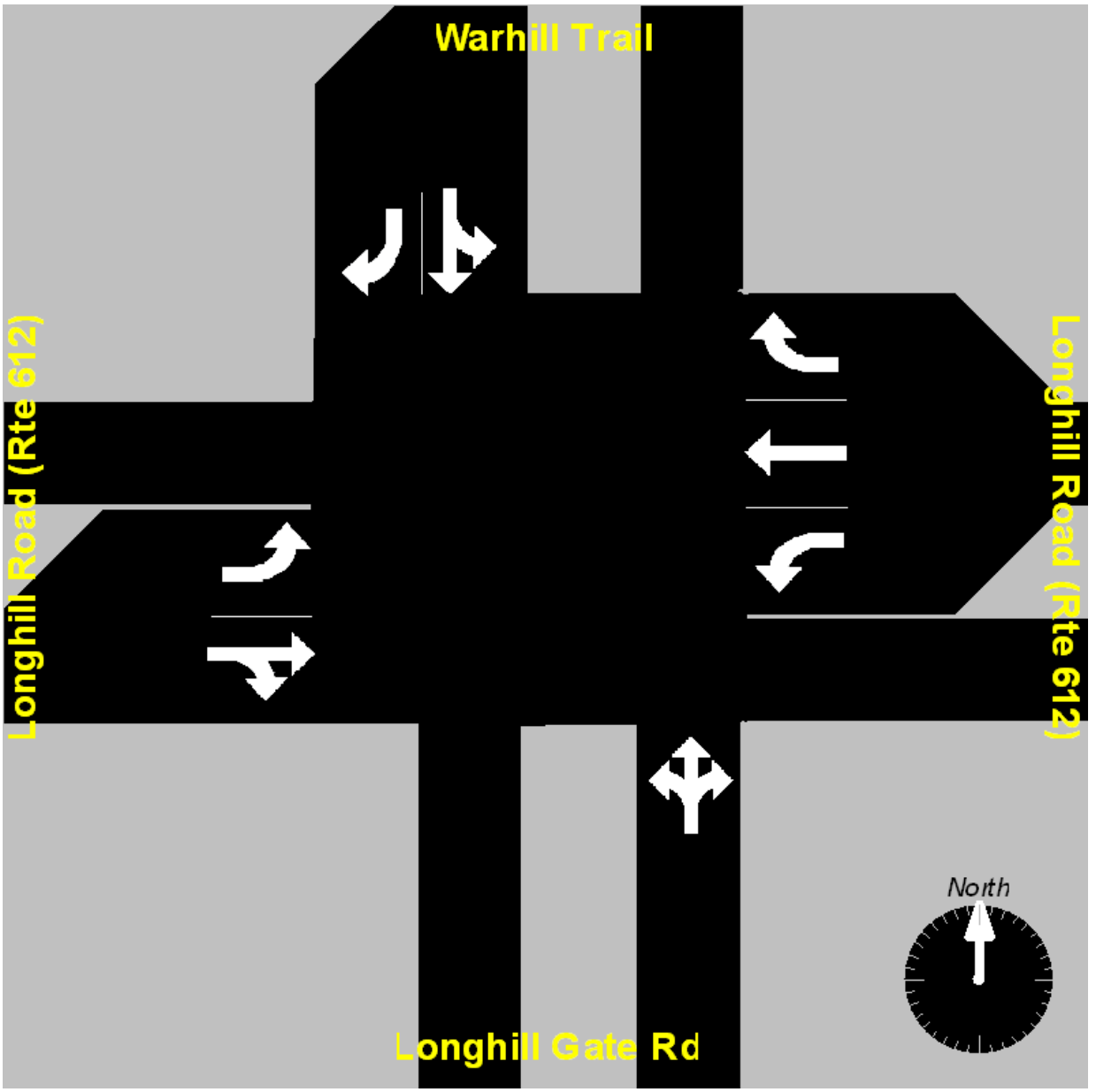
	Warhill Trail From North					Longhill Road (Rte 612) From East					Longhill Gate Rd From South					Longhill Road (Rte 612) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	4	0	**2**	0	**6**	**3**	59	19	0	81	17	0	20	0	37	52	**99**	**8**	0	159	283
05:15 PM	2	0	1	0	3	1	**90**	**53**	0	**144**	**20**	**1**	28	0	49	**68**	99	8	0	**175**	**371**
05:30 PM	4	0	1	0	5	1	89	20	0	110	14	1	**45**	0	**60**	54	95	7	0	156	331
05:45 PM	**5**	0	1	0	6	3	84	17	0	104	17	1	37	0	55	45	78	6	0	129	294
Total Volume	15	0	5	0	20	8	322	109	0	439	68	3	130	0	201	219	371	29	0	619	1279
% App. Total	75	0	25	0		1.8	73.3	24.8	0		33.8	1.5	64.7	0		35.4	59.9	4.7	0		
PHF	.750	.000	.625	.000	.833	.667	.894	.514	.000	.762	.850	.750	.722	.000	.838	.805	.937	.906	.000	.884	.862
PC	15	0	5	0	20	8	322	109	0	439	68	3	130	0	201	219	371	29	0	619	1279
% PC	100	0	100	0	100	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	100
HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% HV	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



VDOT
Eastern Region
Traffic Engineering

VDOT
Eastern Region
Traffic Engineering

File Name : Longhill Road & Warhill Trail 12Mar13
Site Code : 06120830
Start Date : 3/12/2013





Imagery: ESRI Basemap

\# Crash Location and Number

Longhill Road Corridor 2010 - 2012 Crash Locations

Williamsburg Area Transit Authority

PURPLE LINE 1 / LINEA VIOLETA 1

Oxford, New Town to Williamsburg Outlet Mall

Oxford, New Town	Legacy Hall	JCC Courthouse	JCC Community Center	Human Services Center/OTMC	Lafayette High School	Forest Glen	Williamsburg Outlet Mall
6:00	6:01	6:03	6:08	6:13	6:16	6:20	6:26
7:00	7:01	7:03	7:08	7:13	7:16	7:20	7:26
8:00	8:01	8:03	8:08	8:13	8:16	8:20	8:26
9:00	9:01	9:03	9:08	9:13	9:16	9:20	9:26
10:00	10:01	10:03	10:08	10:13	10:16	10:20	10:26
11:00	11:01	11:03	11:08	11:13	11:16	11:20	11:26
12:00	12:01	12:03	12:08	12:13	12:16	12:20	12:26
1:00	1:01	1:03	1:08	1:13	1:16	1:20	1:26
2:00	2:01	2:03	2:08	2:13	2:16	2:20	2:26
3:00	3:01	3:03	3:08	3:13	3:16	3:20	3:26
4:00	4:01	4:03	4:08	4:13	4:16	4:20	4:26
5:00	5:01	5:03	5:08	5:13	5:16	5:20	5:26
6:00	6:01	6:03	6:08	6:13	6:16	6:20	6:26
7:00	7:01	7:03	7:08	7:13	7:16	7:20	7:26
8:00	8:01	8:03	8:08	8:13	8:16	8:20	8:26
9:00	9:01	9:03	9:08	9:13	9:16	9:20	9:26

Sunday Schedule

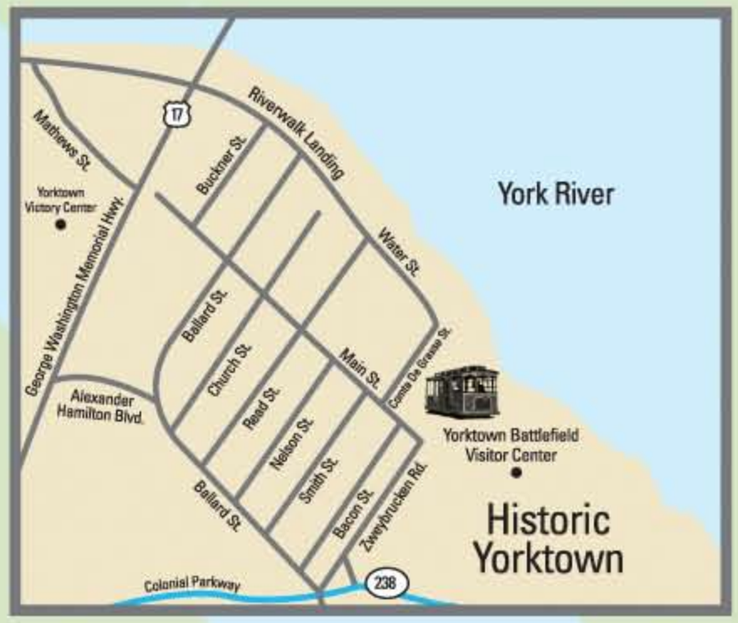
Summer Only July 1 to Labor Day

Williamsburg Outlet Mall to Oxford, New Town

Williamsburg Outlet Mall	TNCC/Warhill High School	Forest Glen	Lafayette High School	JCC Community Center	Oxford, New Town
6:33	6:35	6:40	6:43	6:52	6:59
7:33	7:35	7:40	7:43	7:52	7:59
8:33	8:35	8:40	8:43	8:52	8:59
9:33	9:35	9:40	9:43	9:52	9:59
10:33	10:35	10:40	10:43	10:52	10:59
11:33	11:35	11:40	11:43	11:52	11:59
12:33	12:35	12:40	12:43	12:52	12:59
1:33	1:35	1:40	1:43	1:52	1:59
2:33	2:35	2:40	2:43	2:52	2:59
3:33	3:35	3:40	3:43	3:52	3:59
4:33	4:35	4:40	4:43	4:52	4:59
5:33	5:35	5:40	5:43	5:52	5:59
6:33	6:35	6:40	6:43	6:52	6:59
7:33	7:35	7:40	7:43	7:52	7:59
8:33	8:35	8:40	8:43	8:52	8:59
9:33	9:35	9:40	9:43	9:52	9:59

FY13- WATA Purple Line Ridership

Routes	12-Jul	12-Aug	12-Sep	12-Oct	12-Nov	12-Dec	13-Jan	13-Feb	13-Mar	13-Apr	13-May	13-Jun	FY 2013
Purple I	6,580	6,759	5,868	6,188	5,602	5,384	5,950	5,427	6,055	7,012	7,031	5,902	73,758
Purple II	5,529	5,493	5,313	5,210	4,768	4,601	4,643	4,643	4,802	4,488	4,649	4,652	58,791







KEY

Transport Lines

- Blue Line
- Gray Line
- Green Line
- Orange Line
- Purple Line
- Red Line
- Yellow Line
- Tan Line
- Roads
- Transfer Points

* Please note that transportation service is only available to the Points of Interest that are located on established routes.

Longhill Road Corridor Study
Project Advisory Committee (PAC) Kickoff Meeting

James City County Human Services Building Multi-Purpose Room

6:00 pm to 8:00 pm

June 17, 2013

Meeting Agenda

I. Introductions
- Project Team Members
- PAC Members
  - Organization/Community they represent

II. Project History

III. Project Schedule
- 18 months
- Review Proposed Sequence of Events and Project Meetings

IV. Role/Function of the PAC
- Input is valued
- Community/Organization representatives – Eyes and Ears
- Communicate back to their groups
- Encourage involvement by their group members in the process
- Help develop Guiding Principles – Subsequent Meeting

V. Public Involvement
- Project Website Development
- Public Workshops
- Project Survey
- Project Advisory Committee and Stakeholder Interviews

VI. Issues and Concerns Exercise
- Safety Concerns
- Transportation Operations/Mobility Concerns
- Environmental Concerns
- What is the most important element of this project to you?

VII. Guiding Principles
- Community Values
- Vision Statement
- Project Objectives

VIII. Next Steps

Notes and Materials

Issues and Concerns Exercise

1) Breakout groups of the PAC members. With 20 to 24 participating members at the meeting let's plan to have 4 groups of 5 to 6 people. Each group at a separate table.
2) 15 to 20 minutes for each group to discuss/document the items listed below:
    a. Safety Concerns
    b. Transportation Operations/Mobility Concerns
    c. Environmental Concerns
    d. What is the most important part of this project to you?
3) Small group leader will report back to the PAC Group their findings
4) KHA will document feedback at the meeting
5) KHA will roll up the comments/input and then circulate to the group for confirmation that we captured all of their thoughts.

Materials

1) Four maps of the corridor 34" x 44"
2) Colored dots to highlight issue/concern areas by type
    a. Safety – Red
    b. Transportation/Mobility – Blue
    c. Environmental – Green
3) 3"x5" sticky notes for "Most Important to You" question
4) Two 25" x 30" Easel Pad sticky note pads to document group feedback
5) Markers
6) Easels
7) Projector and Screen
8) Extension Cord



Kimley-Horn
and Associates, Inc.

Data Source: 2011 Virginia BaseMap Program (VBMP)

0 625 1,250 2,500 Feet

Longhill Road Corridor Study

James City County VIRGINIA Jamestown 1607



Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Project History

- 2026 Comprehensive Plan had Longhill Road on the “watch list” based on projected volumes
- Comprehensive Plan Update effort proposed a comprehensive evaluation of the Corridor
  - Capacity, safety, and multi-modal (bike, ped, transit)
- Corridor Study makes it into the VDOT Six Year Improvement Program
- County hires consultant to conduct Comprehensive Study of Longhill Road Corridor

Project History

- Continued evaluation/implementation of operational and safety improvements
  - Possible traffic signal/roundabout at the Warhill Trail intersection
  - Possible traffic signal at the entrance to Season's Trace or entrance to LHS
  - Widening from Route 199 to Olde Towne Road
  - Widening north/west of Olde Towne Road
  - Safety improvements at the Olde Towne Road intersection
  - Signal timing modifications to help with traffic progression between Olde Towne Road and Route 199

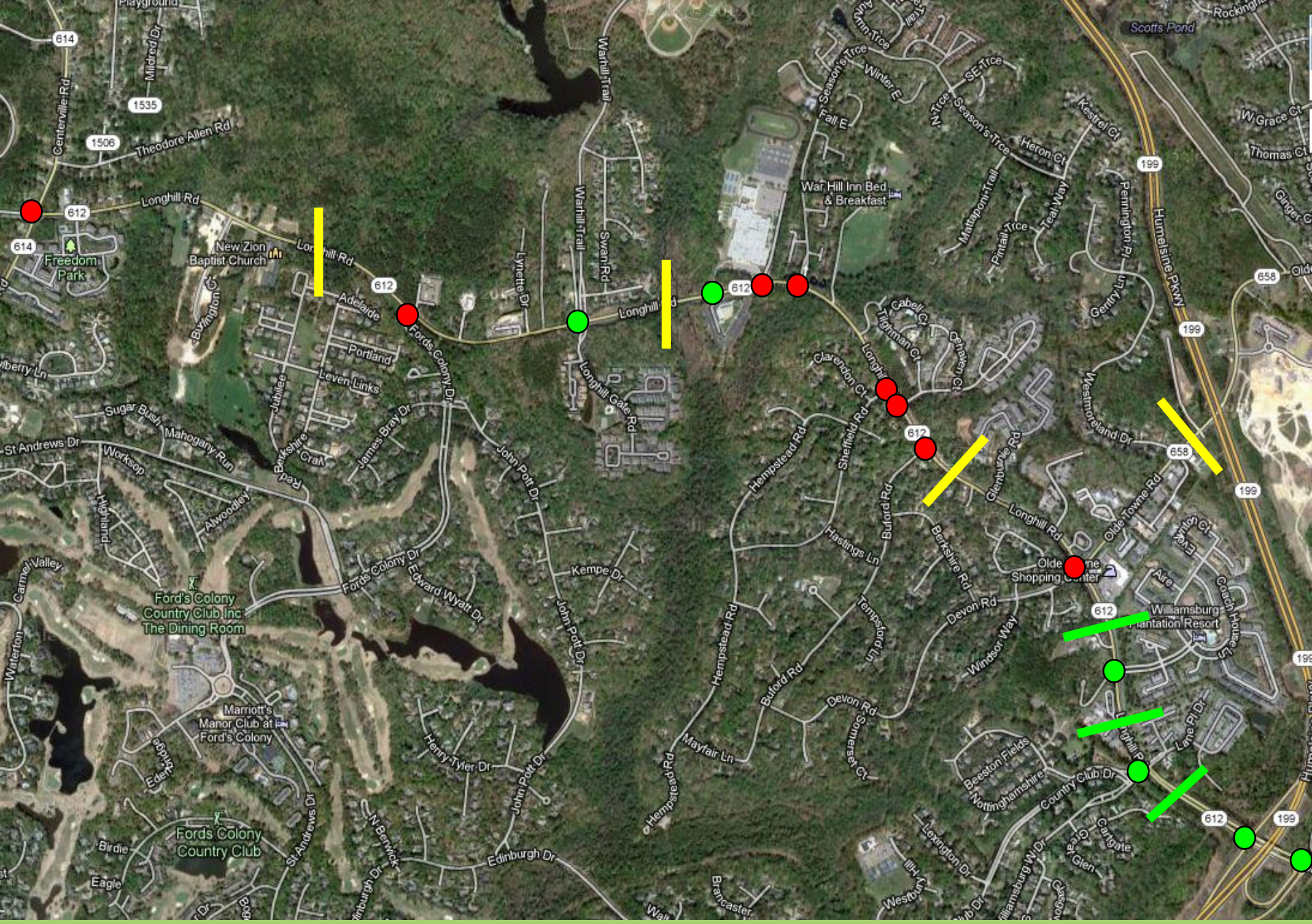
Study Area

- Longhill Road Corridor
- Approximately 3.0 miles
  - Route 199 interchange in the east to the intersection of Centerville Road in the west
- 14 Study Area Intersections
  - 5 Signalized
  - 9 Unsignalized
- Powhatan Creek Natural Area
- Powhatan Creek Watershed Plan



Longhill Road Corridor Study *James City County*

Kimley-Horn and Associates, Inc.

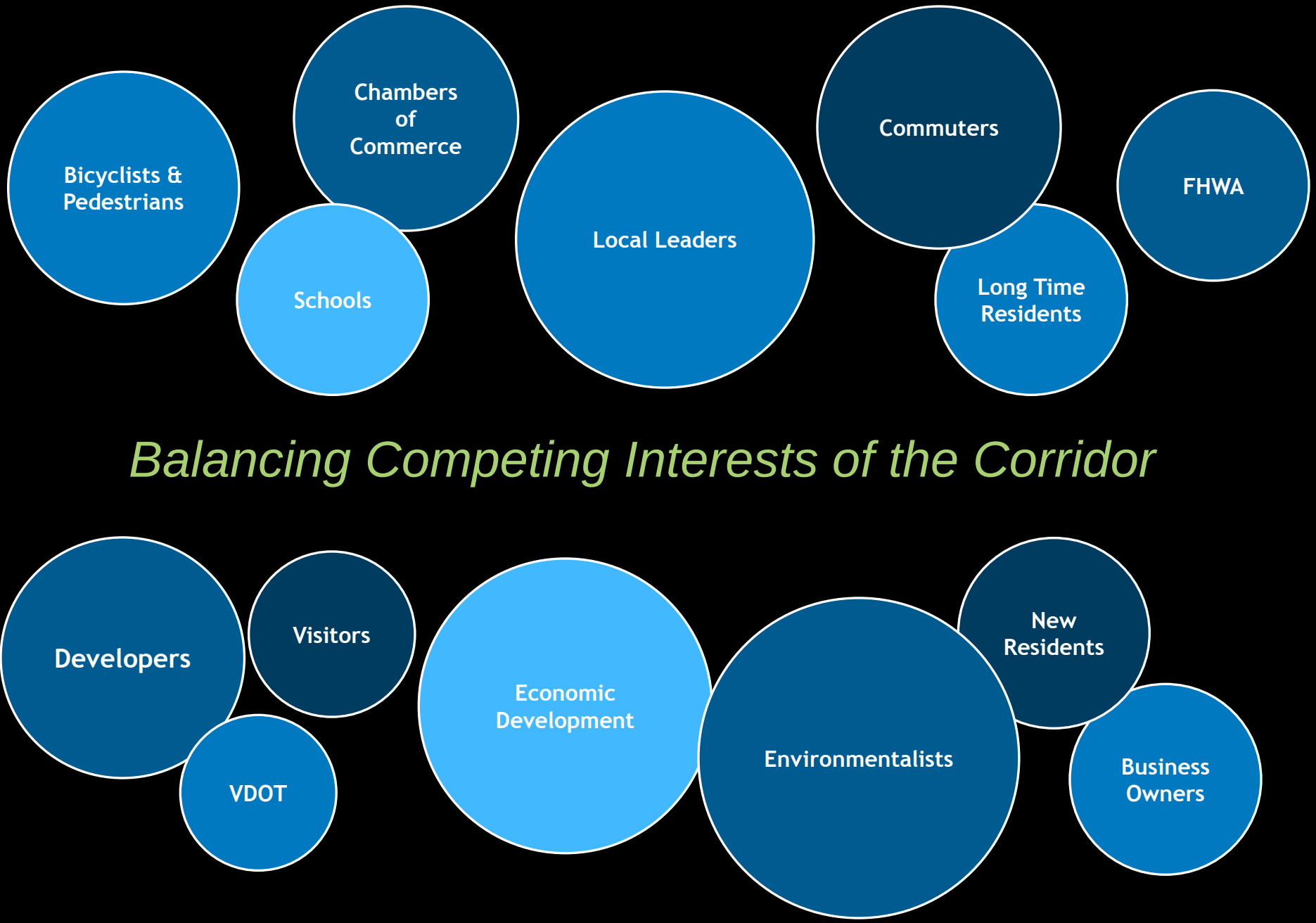

Longhill Road Corridor Study
James City County
Kimley-Horn and Associates, Inc.

Public Involvement

- Core Team Meetings
- Project Advisory Committee
- Stakeholder interviews
- Leadership symposiums
- Questionnaire / Surveys
- Workshops/Design Charrette
- Project Website







Balancing Competing Interests of the Corridor

Project Advisory Committee

- Thank You!
- Input is Valued
- Community/Organization Representatives
- Communication line to/from your groups
- Encourage group involvement in the process:
  - Upcoming Public Workshops
  - On-line Surveys
  - Stakeholder Interviews
- Help develop Guiding Principles

Issues and Concerns Exercise

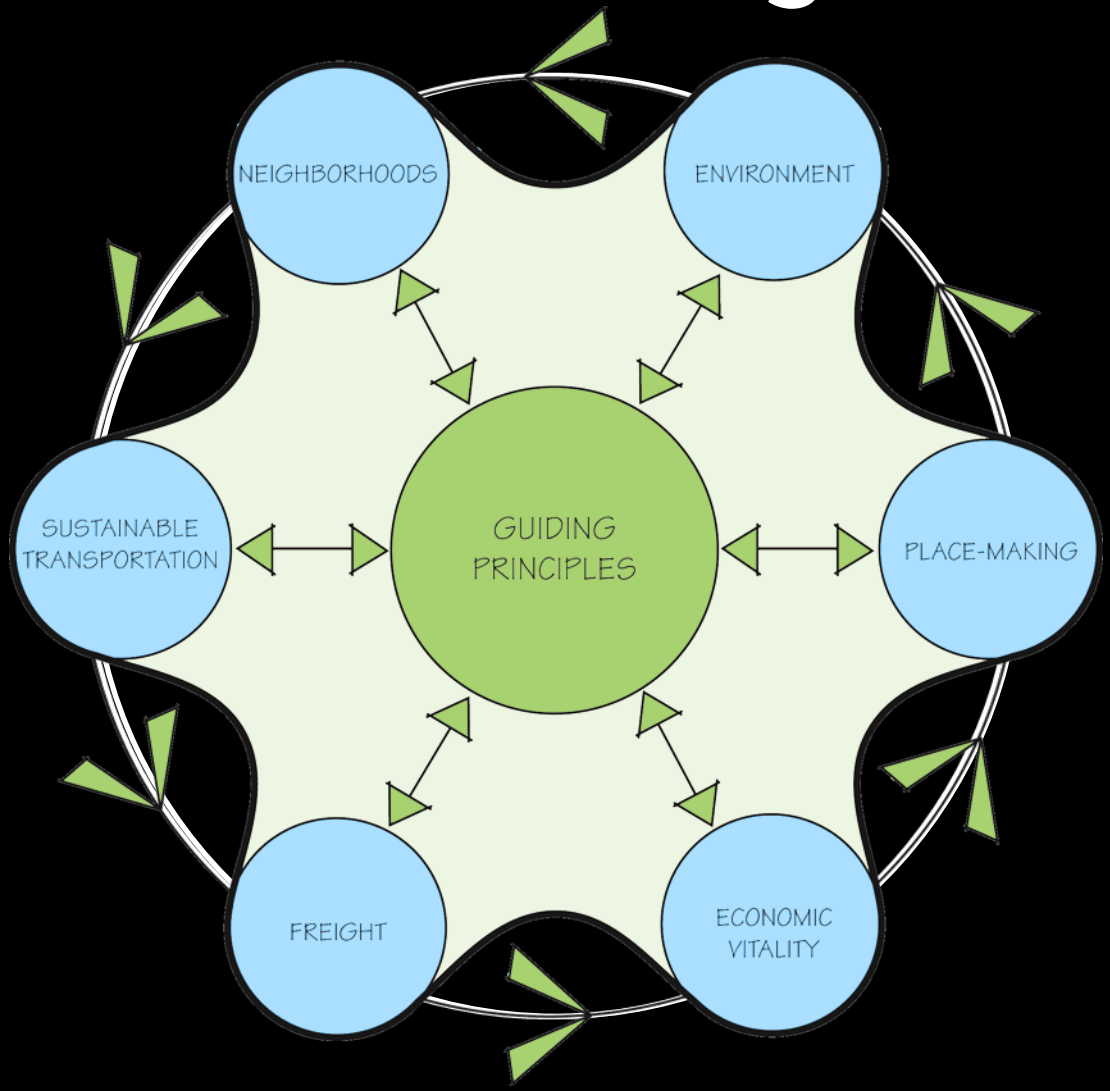
- Safety Concerns - Red
- Traffic Operations/Mobility Concerns - Blue
- Environmental Concerns - Green
- What is the most important element of this project to you?



Longhill Road Corridor Study *James City County*

Kimley-Horn and Associates, Inc.

Guiding Principles



- Three Tiers
  - Community Values
  - Vision Statement
  - Project Objectives
- Influenced by Advisory Committee, Interviews, Survey Results, Public Input
- Project Symposium

Next Steps

- Existing Conditions Analysis and Findings
  - Traffic Operations
  - Bike, Ped, and Transit Mobility
  - Environmental Screening/Overview
  - Market Analysis – Economic Vitality
- Public Involvement
  - Stakeholder Interviews
  - Project Website Developed
  - Workshop 1 – Project Symposium

Longhill Road Corridor Project Advisory Committee (PAC) Meeting
Group Exercise - Map Comments

Group 1

Red Dots

1. No shoulder from Warhill Trail to Centerville Road – bad for cyclists and peds given the trees and low visibility on this particular stretch. Multi use trail particularly needed here.
2. Speed limit is 45 which is too fast for cars to pull out into traffic from Warhill, Lafayette High School, Season's Trace or Windsor Forest. Olde Towne Road to Warhill could be 35 mph.
3. No deceleration lane when turning right into Ford's Colony coming from Centerville Road, traveling eastbound toward 199.
4. Warhill Trail to Season's Trace, maybe to Windsor Forest – mini corridor of greatest importance

Blue Dots

1. Signal timing coordination from 199 – Olde Towne Road is poor leading to stacking and queuing
2. Bottleneck area where 5 lane section reduces to 2 lanes
3. Transit stops with no pull off area leave buses stopping in the traffic lane or pulled to the side of a traffic lane, which makes it confusing and dangerous for the buses and the other traffic
4. Access points identified by these need immediate assistance. Traffic lights? Can traffic lights be flashing yellow most of the time and operational at specific times?
5. Access into the 7-Eleven is complicated. Cars try to turn left into the parking lot after going straight through the Olde Towne intersection headed toward 199.

Green Dots

None – our group decided the regs/procedures would require environmental issues to be considered.

Group 2

Red Dots

1. No sidewalk from Warhill to Centerville Road
2. Congestion at school entrance
3. No crosswalk at intersection from bus stop to 7-Eleven
4. Parking and cemetery for church

Blue Dots

1. No sidewalk Warhill Trail to Centerville Road
2. Not a good place for bus stop
3. Lack of crosswalk into FRP Park
4. Drop in lanes – traffic into apartments to avoid backup
5. Parking and cemetery for church

Green Dots

1. Low area prone to flooding/freezing
2. Continue to keep protected

Group 3

Red Dots

1. Bike lane from top of hill needs to go through the intersection
2. Bicycle thru lanes in each direction at Olde Towne/Longhill intersection
3. Pedestrian lights and crosswalks needed
4. Adequate shoulders or off road bike lanes (for kids) along entire length
5. Each intersection: proper striping for cyclists
6. Warning light approaching Ford's Colony going west
7. Ford's Colony exit and entrance – dangerous for all vehicles
8. King of Glory church entrance
9. Need pedestrian/bicycle ability to cross Longhill – needed at all traffic lights

Blue Dots

1. Deficient sight distance for King of Glory and Wellspring
2. Difficulty exiting Season's Trace – sight line/Lafayette High School
3. Ford's Colony difficulty exiting, entering
4. 7-Eleven at Centerville – eventual access/exit difficulty
5. Traffic control at Lafayette High School
6. Need turn lane at King of Glory church

Green Dots

1. Bicycling/pedestrian access will do wonders for environment by cutting down on auto generated pollution

Longhill Road Corridor Project Advisory Committee (PAC) Meeting
Collective Comments/Preliminary Findings

Safety

1. Consideration should be given to lowering the posted speed limit from 45 mph to 35 mph for a portion of the corridor (e.g., Route 199 to Warhill Trail)
2. Need to improve overall bicycle and pedestrian safety along the corridor.
    a. Off-road or multi-use path along the entire corridor.
3. Need to improve/provide sidewalks/multi-use path for pedestrian traffic along the corridor
4. Need to properly stripe and install crosswalks and/or pedestrian signal (ped button/ped display) equipment at signalized intersections to assist pedestrians with safely crossing Longhill Road
5. Need to construct adequate roadway shoulders from Warhill Trail to Centerville Road.
    a. Safety problem for cyclist as they are forced to ride in the travel lane with little to no space to correct for error or get out of the way of vehicle traffic
6. Inclusion and proper pavement demarcation of bike lanes along the roadway and through intersections.
7. Need to consider the construction/installation of adequate deceleration/turn-lanes along the corridor:
    a. Ford's Colony Drive (eastbound/toward 199 exclusive right-turn/deceleration lane)
    b. King of Glory Church (eastbound/toward 199 exclusive right-turn/deceleration lane)
    c. Montessori School Entrance Driveway (exclusive right-turn/deceleration lane, exclusive left-turn/deceleration lane)
    d. Lafayette High School Bus Entrance (westbound/toward Centerville exclusive right-turn/deceleration lane)

   e. Lafayette High School Main Entrance (westbound/toward Centerville exclusive right-turn/deceleration lane)
8. Improve sight distance at select side street approaches to Longhill Road. Some are the result of roadway geometry (horizontal or vertical curvature) some existing vegetation.
   a. Sight distance issues at the Ford's Colony intersection
   b. Sight distance issues at the Season's Trace intersection
   c. Sight distance issues King of Glory and Wellspring Churches
9. Address traffic congestion at the Lafeyette High School entrance
10. Construct/install safe/formal bus turnout/bus bays to pick-up/drop-off riders (WATA Purple Route)
   a. LHS Entrance – Eastbound or westbound Longhill Road

Traffic Ops/Mobility

1. Improve traffic signal coordination between Olde Towne Road and Route 199 to address significant peak hour congestion
2. Traffic congestion associated with roadway quickly transitioning from a 5-lane typical section to a 2 lane typical section when traveling from 199 toward Olde Towne
3. Improve transit stops – unsafe – often impede mainline traffic flow/operations
4. Due to traffic volumes and speeds along Longhill Road several side street driveways at unsignalized intersections experience excessive delays during peak periods (e.g., Season's Trace, Warhill Trail, Ford's Colony).
5. Access to 7-Eleven from eastbound Longhill Road (i.e., east of the Olde Towne Road intersections) should be prohibited.
6. Improve traffic control at one or all of the following site driveway intersections: LHS Entrance, Warhill Trail, Season's Trace.
7. Bike and pedestrian improvements should encourage/promote alternative transportation mobility or walking and biking to/from destinations/locations that are naturally linked (schools and neighborhoods, neighborhoods and parks, businesses, etc.).

General

1. Corridor within a corridor– Warhill to Season's Trace
2. Bottlenecks and safety
3. Speed

Environmental

1. Continue/maintain designation of conservation area west of Warhill Sports Complex
2. Between Ford's Colony and church area prone to flooding and freezing
3. Natural area at Powhatan Creek
4. Improve bike, ped, transit mobility can translate into improved air quality
5. Minimal environmental concerns at this time. More may come to light as corridor improvement alternatives are considered.

Longhill Road Corridor Study
Project Advisory Committee (PAC) Kickoff Meeting

James City County Human Services Building Multi-Purpose Room

6:00 pm to 8:00 pm

August 21, 2013

Meeting Agenda

I. Stakeholder Interviews
- Summary
- General themes

II. Project Website
- Preparing to go live
- LonghillRoadCorridorStudy.com
- Post summary of Stakeholder interview comments
- Post upcoming Project Symposium Meeting Date/Time/Location

III. Traffic – Existing Conditions Analysis
- AM and PM Intersection/Corridor LOS Conditions
- Operational Constraints
- Crash History
- Safety

IV. Environmental – Existing Conditions Screening
- Streams and Wetlands
- Threatened & Endangered Species
- Cultural Resources
- Hazardous Materials

V. Guiding Principles
- DRAFT Vision Statement
- DRAFT Project Objectives

VI. Next Steps
- Project Symposium – September (Need to determine) Date/Time/Location
- Project Survey – Post on website for community feedback/input
- Market Analysis

Longhill Road Corridor Study
Project Advisory Committee (PAC) Kickoff Meeting

James City County Human Services Building Multi-Purpose Room

6:30 pm to 8:30 pm

November 7, 2013

Meeting Agenda

I. Public Involvement Results
- Summary of Stakeholder Interviews
- Summary of Project Symposium Meeting
  - Symposium Survey comments/results available on project website
  - *http://www.jamescitycountyva.gov/longhillcorridorstudy.com*
  - Thought Wall comments
  - Priority Decision Tree results
  - Build-A-Street results

II. Existing Conditions Findings
- Operational Constraints
- Bike and Pedestrian Conditions
- Transit Operations
- Crash History Updated

III. Recent Presentations
- Policy Committee Presentation – October 10th
- Board of Supervisors Presentation – October 22nd

IV. Guiding Principles
- DRAFT Corridor Vision Statement – Kimley-Horn to provide prior to meeting for review.
- DRAFT Project Objectives

V. Market Analysis
- Findings
- Trends

VI. Next Steps
- Public Workshop - November 21, 2013, 7:00 to 9:00 PM, King of Glory Church
- Future Traffic Volume Projections
- Future Conditions Analysis

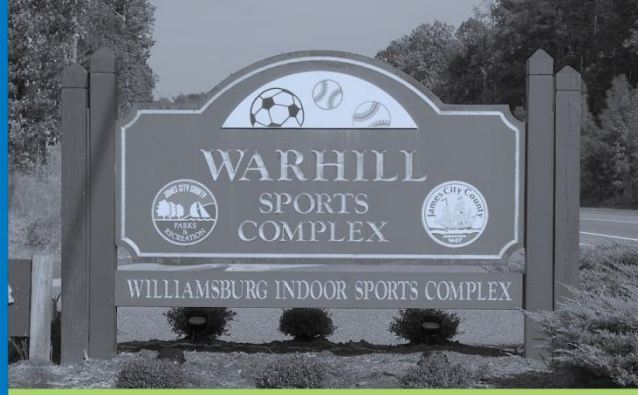


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Presentation Outline

- **Existing Conditions**
  - Traffic
  - Pedestrian
  - Bike
  - Transit
  - Environmental
- **Project Symposium Activities and Results**
- **Next Steps**
- **Guiding Principles**

Existing Conditions - Traffic

Average daily traffic (ADT) volumes along the corridor today range from:

- 21,000 vehicles per day (vpd) - Route 199 to Lane Pl
- 16,500 vpd - Williamsburg Plantation to Olde Towne Rd
- 18,000 vpd - Glenburnie Rd to Buford Rd
- 13,000 vpd - Lafayette High School to Warhill Trail
- 8,700 vpd - west of Ford's Colony entrance
- 9,600 vpd - Olde Towne Rd northeast of Longhill Rd

Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	37.6	A	31.9	B
Williamsburg W. Drive/Lane Place Drive	8.8	F	9.6	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	23.2	C	22.8	C
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.8	E	11.6	F
Overall	**22.1**	**C**	**20.9**	**D**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	29.0	B	25.7	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	22.1	C	20.3	D
Williamsburg W. Drive/Lane Place Drive	19.5	D	2.5	F
Olde Towne Road	13.4	E	6.0	F
Centerville Road	33.0	B	32.7	B
Overall	**25.7**	**C**	**12.4**	**F**

LOS A









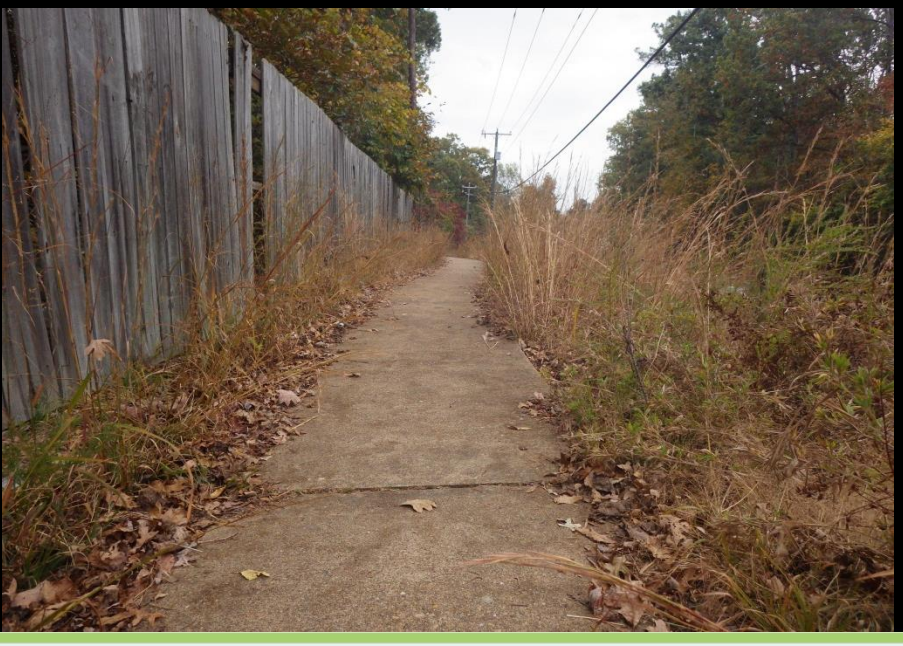
LOS F


LEFT TURN
YIELD
ON GREEN

Pedestrians

- **Pedestrian Facilities**
  - Gaps in network
  - Conditions of some segments need maintenance







Pedestrians

- **Pedestrian Facilities**
  - Lack of crosswalks at signalized/unsignalized intersections
  - Lack of pedestrian push buttons and displays at signalized intersections
  - Inconsistent ADA compliance



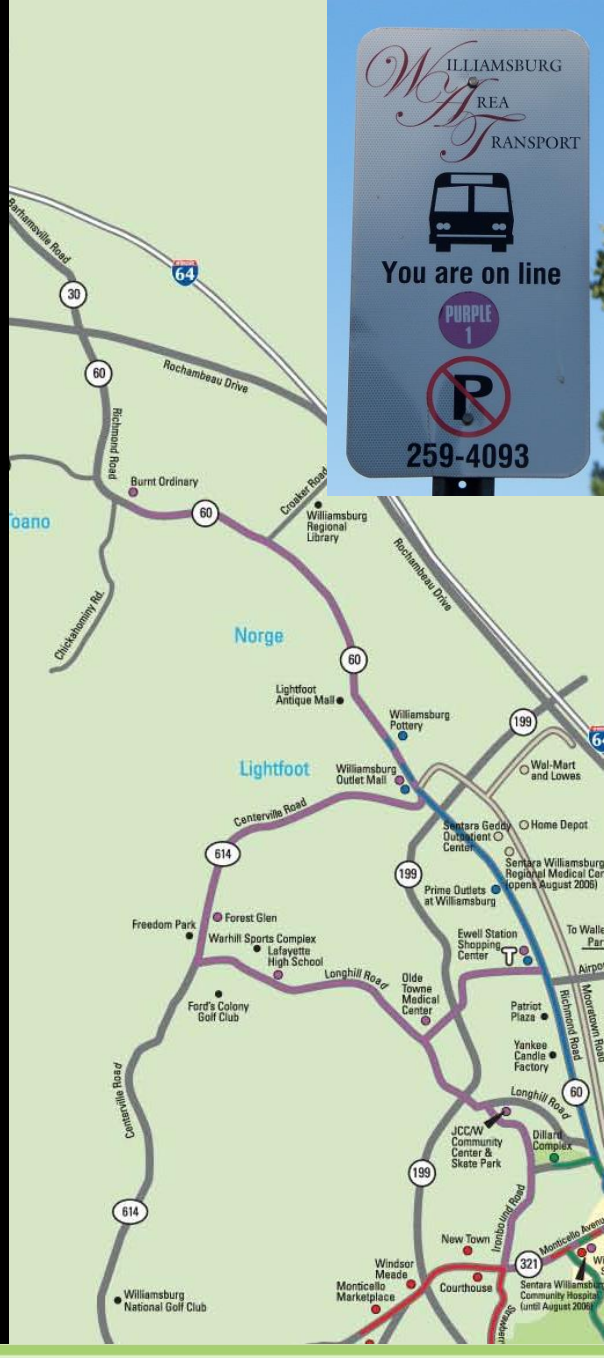




Transit

- **Transit Service**
  - Williamsburg Area Transit Authority – Purple Line
  - Ridership along Purple 1 Route was approximately 6,000 per month or 73,000 in FY13

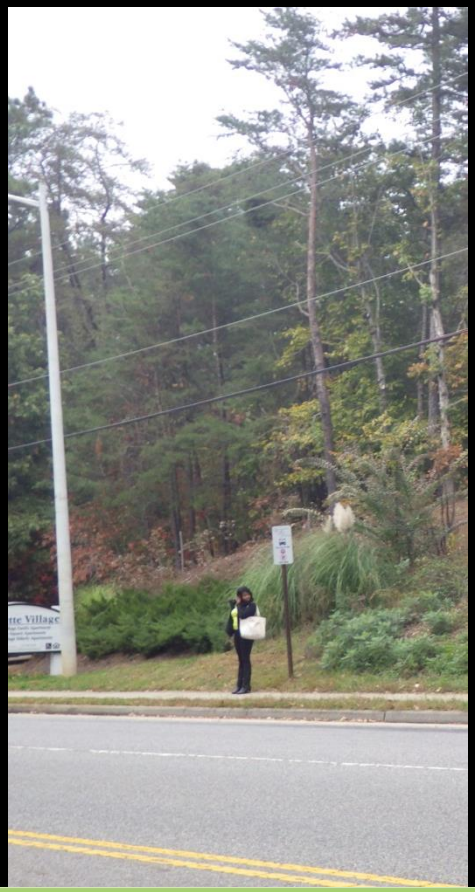




Transit

- **Transit Service**
  - Most stops lack basic shelters
  - One stop with a shelter
  - ADA non-compliance







Bike

- **Bicycle Facilities**
  - Lack of accommodations presents safety issues for cyclists





Bike

- **Bicycle Facilities**
  - Inconsistent facilities and network gaps








WILLIAMSBURG
AREA
TRANSPORT
You are on line
PURPLE
259-4093

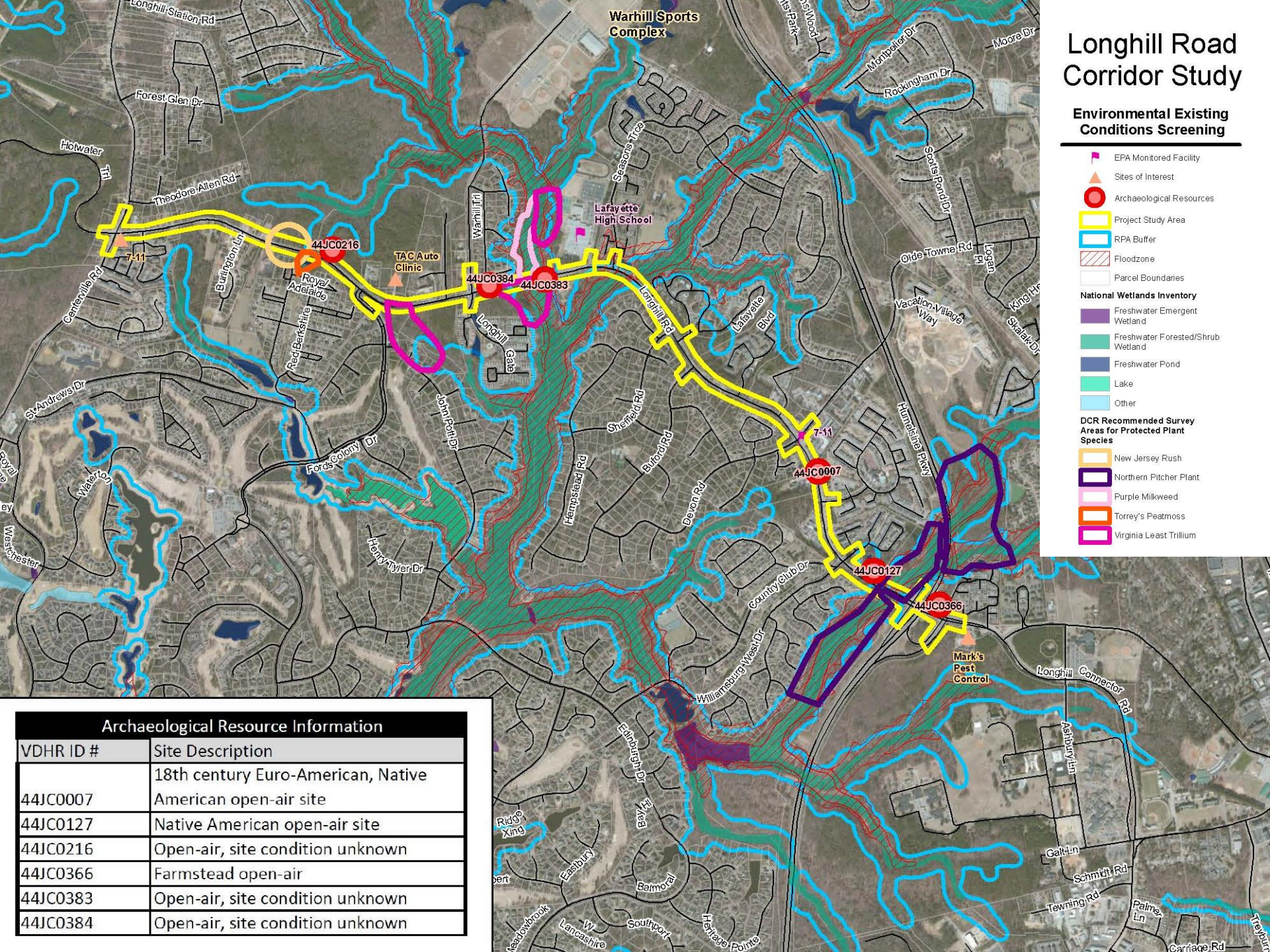
Environmental



- **Wetlands and Surface Waters**
  - Resource protection areas
  - Powhatan Creek Watershed Plan
- **Floodplain**
- **Threatened and Endangered Species**

Cultural Resources

DHR ID #	Description	Status
047-0072	ca 1800 cemetery excavated in May 1971	Recommended Not Eligible
047-5302	House at 3931 Longhill Road; constructed in 1959	Recommended Not Eligible
44JC0007	Open-air site with colonial and prehistoric material	Surveyed in 1964
44JC0127	0.78 acre open-air site with Native American materials	Reconnaissance survey in 1979 Phase I investigation in 1995 Phase II evaluation in 1996
44JC0216	Domestic open-air site of unknown condition	Depicted on historical maps dated 1863 and 1864
44JC0366	Open-air site; Native American camp or farmstead	Phase I survey in 1985 Phase II evaluation in 1987 Phase III data recovery in 1988 Additional Phase I shovel testing in 1995
44JC0383	Open-air site; Native American temporary camp	Phase I survey in 1985
44JC0384	Open-air site; Native American temporary camp	Phase I survey in 1985



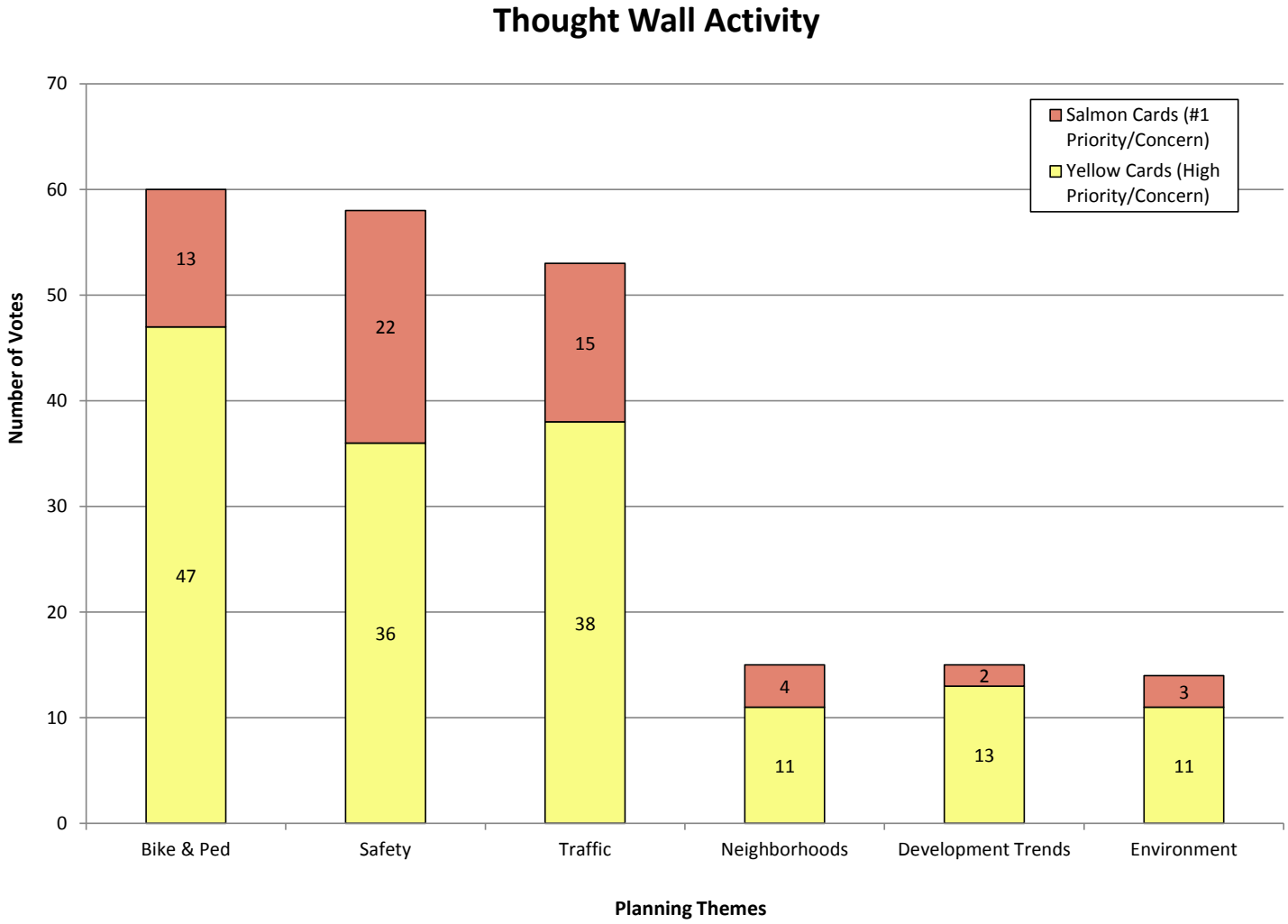
Archaeological Resource Information	
VDHR ID #	Site Description
44JC0007	18th century Euro-American, Native American open-air site
44JC0127	Native American open-air site
44JC0216	Open-air, site condition unknown
44JC0366	Farmstead open-air
44JC0383	Open-air, site condition unknown
44JC0384	Open-air, site condition unknown

Project Symposium

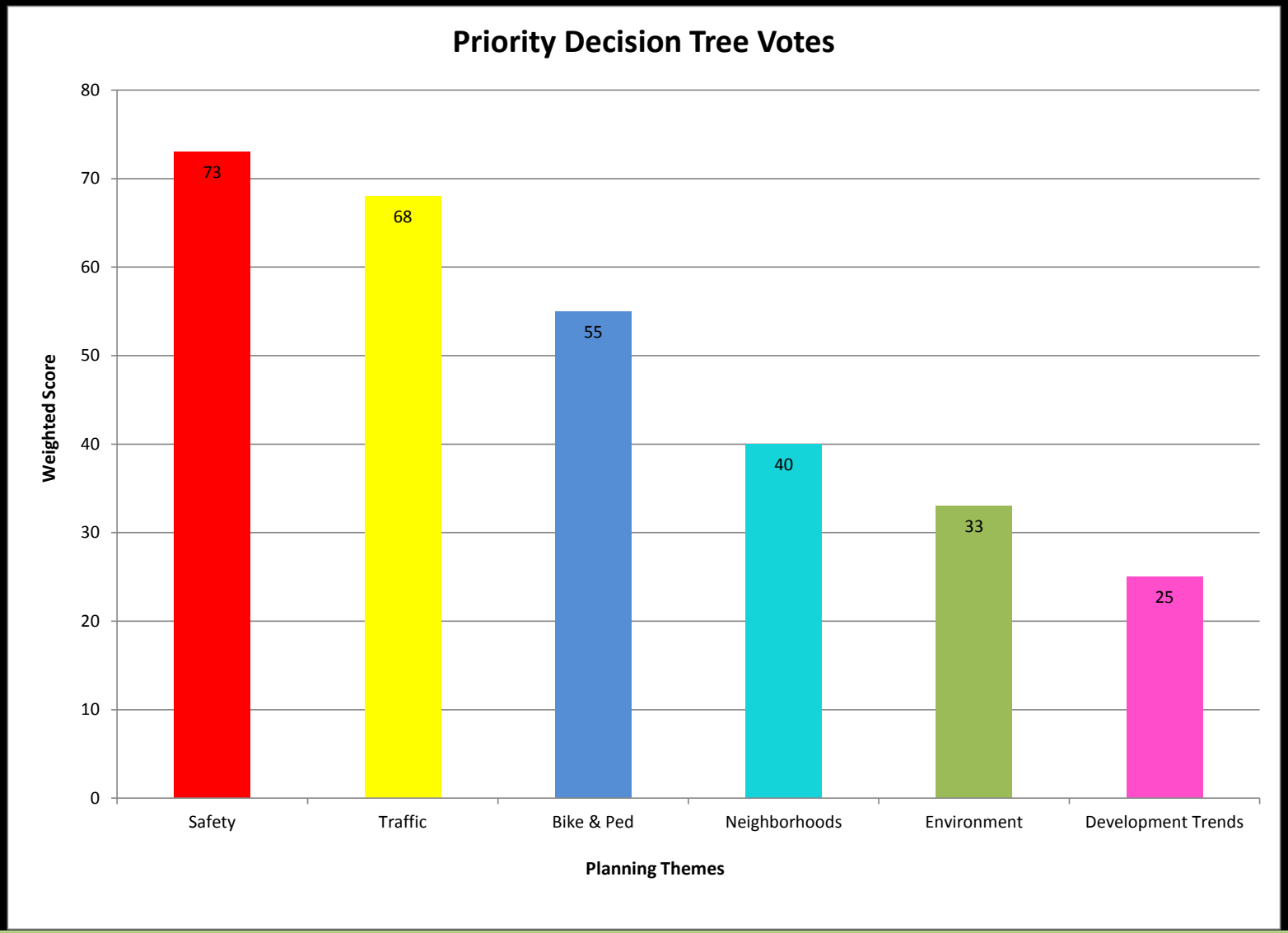
- October 3, 2013
- 70+ Attendees
- Thought Wall Exercise and Comments
- Priority Decision Tree Exercise
- Build-A-Street Exercise



Thought Wall Results



Priority Decision Tree Votes



Priority Decision Tree – Thought Wall Themes

- Safety
- Traffic Operations/Mobility
- Bike and Pedestrian Accommodations
- Environment/Neighborhoods



Build-A-Street

Table	# of Lanes	Left Turn Lane(s)	Median	Bike Lane(s)	Street Tree(s)	Planting Strip(s)	Shoulder	Multiuse Path(s)	Sidewalk(s)	Wild Card
1	4	X - 2	X - depressed with trees	-	X - 1	X - 1	-	X - 1	X - 1	-
2	4	X - 2way	-	X - 2	-	-	X - 2	X - 1	-	-
3	4	X - 2way where necessary	X - 1 where necessary	-	-	X - 1	X - 1	X - 1	-	-
4	4	X - 2way	-	X - 2 wide outside lanes	-	-	X - 2	-	-	-
5	4	X - 1 where necessary	-	-	-	-	X - 2 with street lights at intersections	X - 1	-	-
6	2	-	-	X - 1	X - 2	X - 1	-	X - 1	-	Stoplight at WISC/ Longhill Gate x-section & benches along path
7	2	X - 2way	-	X - 1	-	-	X - 2	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
8	2	X - 1 where necessary	X - planted median with curb & gutter	X - 2	X - 2	-	-	X - 1	-	Bus stop pull-offs with shelters
9	2	X - 1 where necessary	X - 1 where necessary	X - 1	X - 2 without curb & gutter	-	X - 1	X - 1	-	-
10	2	X - 2way	-	X - 2	X - 2	-	X - 2	-	X - 1	-
11	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-
12	2	X - 2way	-	-	X - 2	-	-	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
13 - 199 to Olde Towne	4	-	X - depressed	-	-	X - 1	-	X - 1	-	-
13 - Olde Towne to Centerville	2	X - 1 where necessary	X - 1 where necessary	X - 1	-	-	X - 2	-	X - 1	-
14 - 199 to Olde Towne	4	X - 1 where necessary	X - 1 where necessary	-	-	X - 1	-	X - 1	-	-
14 - Olde Towne to Centerville	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-

Build-A-Street Highlights

- Laneage – Split (2 lanes and 4 lanes)
  - 2 tables made the distinction:
    - 199 to Olde Towne Road – 4 lanes
    - Olde Towne Road to Centerville Road – 2 lanes
- Left-turn Lanes:
  - 9 for Two-Way Left-Turn Lanes
  - 5 for left-turn lanes where necessary
- Multi-Use Path:
  - almost unanimous 12 out of 14 tables were for path on 1 side of roadway
- Wildcard:
  - Bus stop pull-offs with shelters, and traffic signal at Warhill Sports Complex

Next Steps

- **Workshops and Meetings**
  - ***Public Workshop – November 21, 2013***
    - Existing Conditions Analysis Findings
  - ***Public Workshop – February 2014***
    - Corridor Improvement Design Concepts
  - ***Public Workshop – May 2014***
    - Corridor Recommendations and Action Plan
  - Multiple PAC and TAT meetings planned between now and submittal of DRAFT FINAL and FINAL report.
  - Additional project update presentations are planned for both Policy Committee and Board of Supervisors

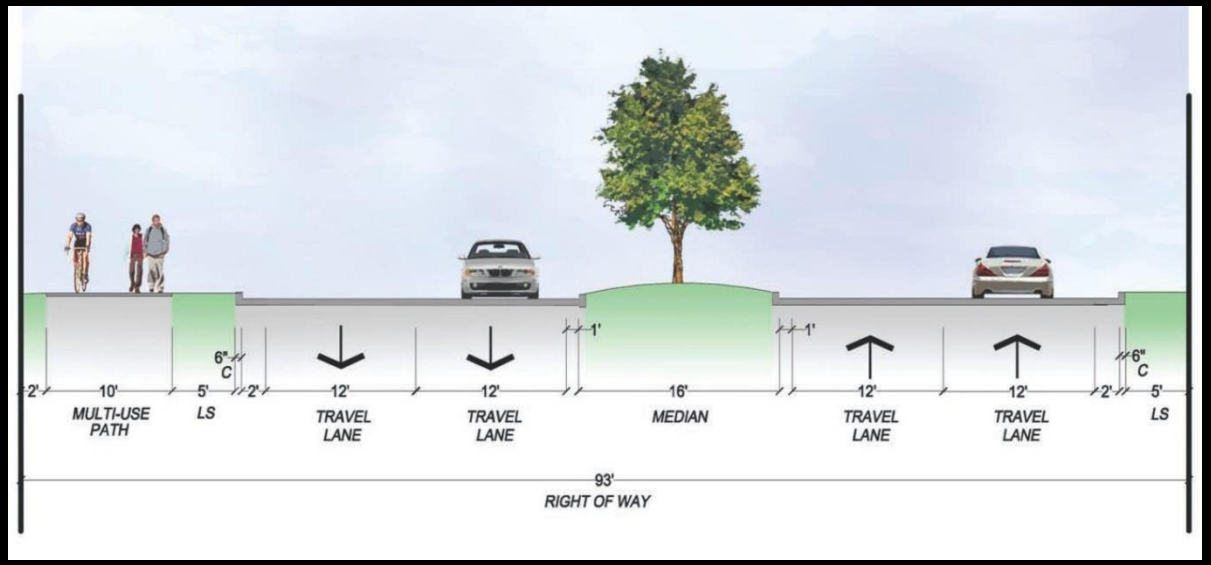
Next Steps

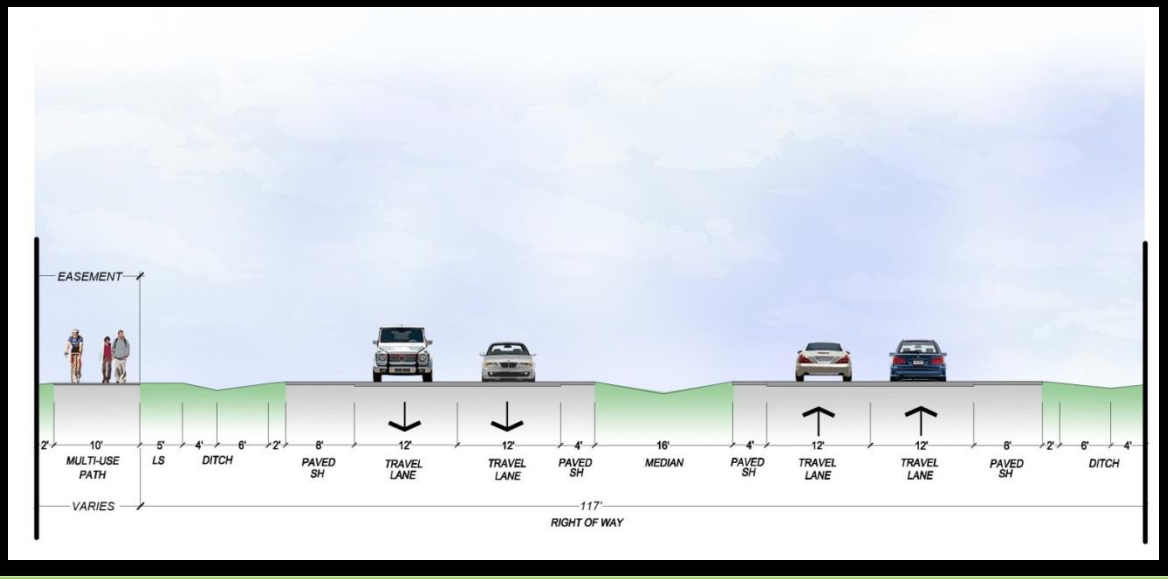
- Market Assessment - Growth and Economic Vitality
- Future Traffic Volume Projections
- Future Conditions Analysis
- Corridor Improvement Design Concepts Development

Future Traffic Volume Projections

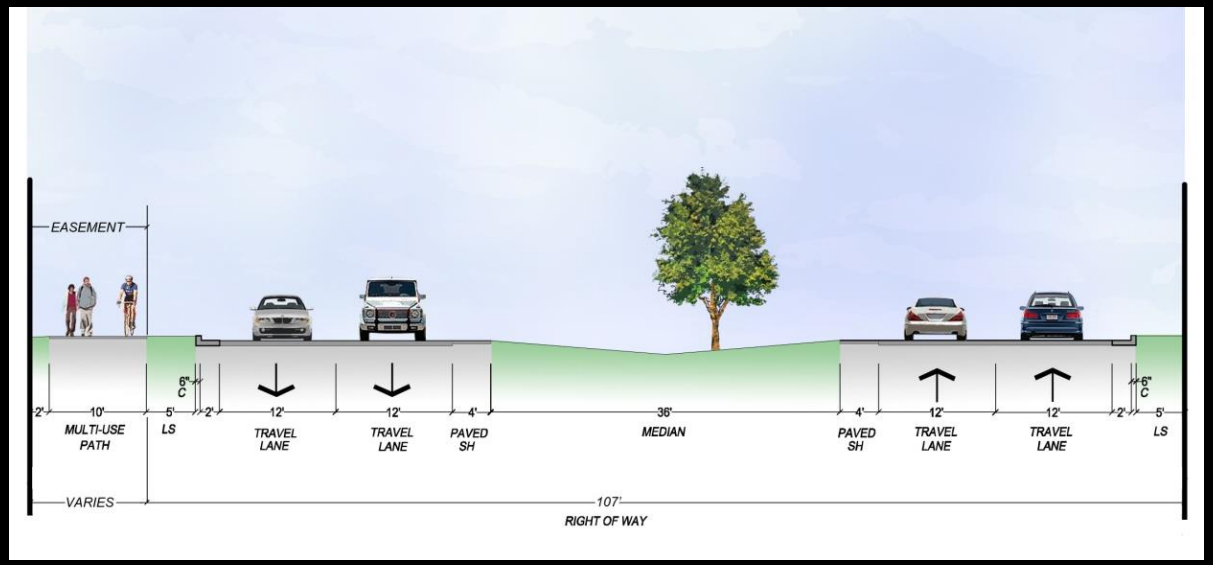
- HRTPO Regional Travel Demand Model
- 2034 Socio-Economic Data
- 2034 Traffic Assignments
- Develop annualized growth rates
- Current Zoning and allowable future development
- Existing business or institutions expansion
- Approved but unbuilt developments
- Undeveloped properties
- Historical Traffic Volume Trends

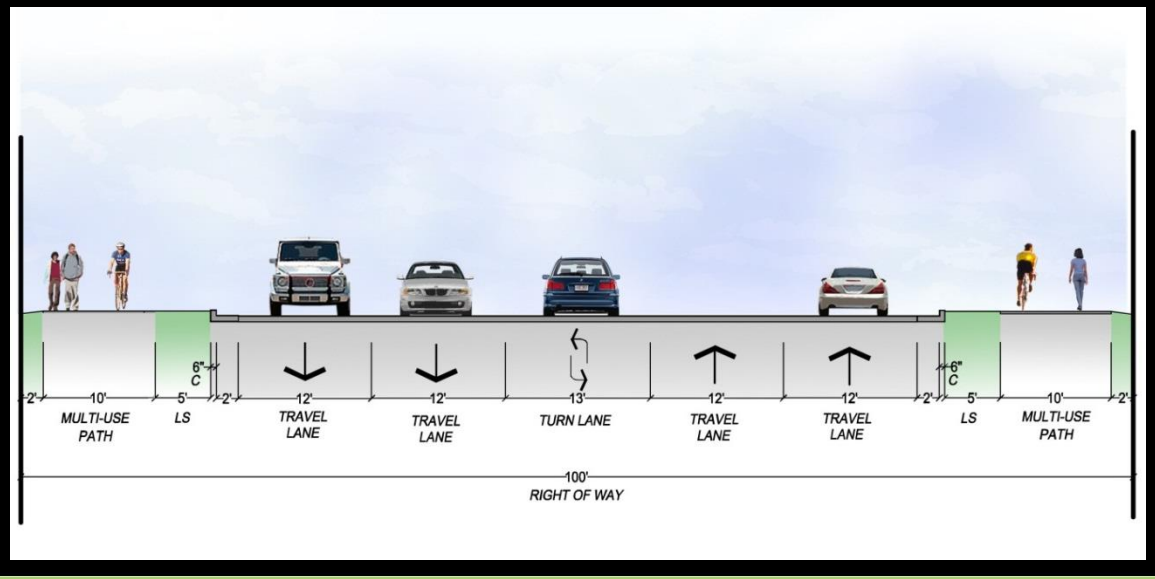
Typical Section Options



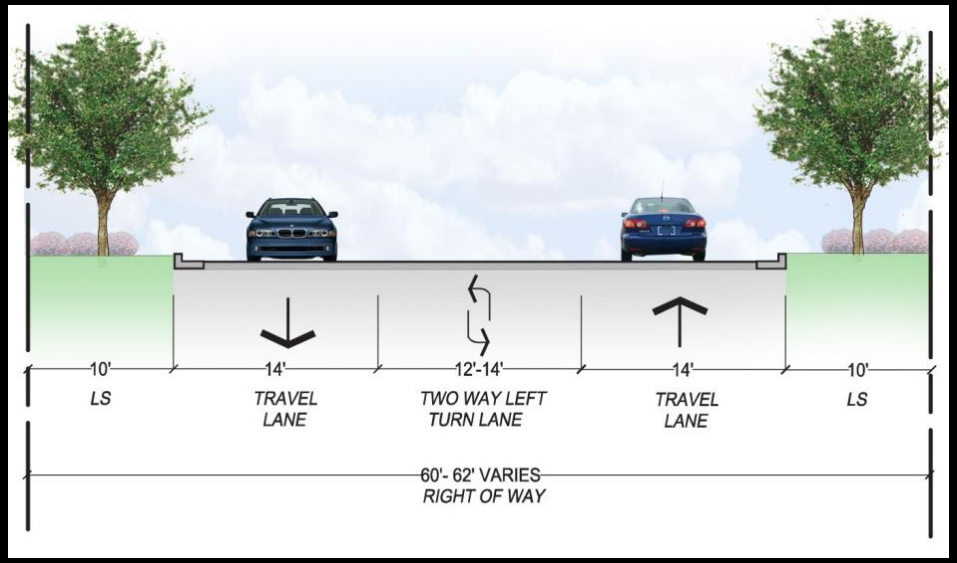


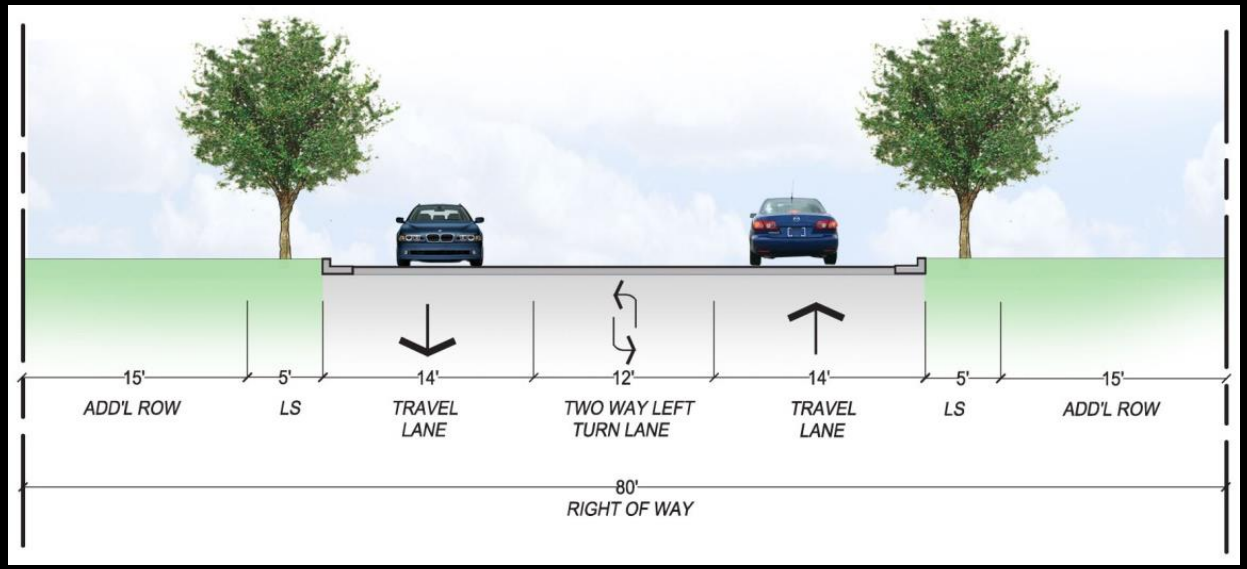
Typical Section Options





Typical Section Options





Guiding Principles

Longhill Road is an important corridor that connects people with significant places in our community; therefore, design improvements to the corridor should:

- Respect the context of the area,
- Safely accommodate all users,
- Respond to existing and projected traffic volumes,
- Be visually appealing, and
- Minimize impact to the natural and built environments.

The resulting improvements will integrate with existing neighborhoods, offer consistence with the comprehensive plan, and promote quality growth and economic vitality.


Questions?

Longhill Road Corridor Study
Project Advisory Committee (PAC) Meeting

James City County Human Services Building Multi-Purpose Room

6:00 pm to 8:00 pm

January 30, 2014

Meeting Agenda

I. Recent Presentations
- Public Workshop – November 21, 2013
- Technical Advisory Team – January 14, 2014

II. Public Involvement Results
- Visual Preference Survey
  - *http://www.jamescitycountyva.gov/longhillcorridorstudy*

III. Traffic Volume Projections
- Data resources
- Methodology
- Results
  - 2034 AM and PM peak hour traffic volume projections
  - 2034 Average Weekday Daily traffic volume projections

IV. Corridor Improvement Design Concepts Development
- Technical Piece - Traffic
  - Corridor Operations
  - Capacity, Traffic Volume Thresholds
  - Access Management
- Bike and Pedestrian Facilities
- Transit Accommodations
- Public Preferences
- Is it consistent with Guiding Principles

V. Next Steps
- Public Workshop – February 19th and 20th, 7:00 to 9:00 PM, Lafayette HS
- Finalize Future Conditions Analysis
- Typical Section Options
- Corridor Improvement Design Concept Alternatives Evaluation
- Identification of Preferred Corridor Improvement Design Concept

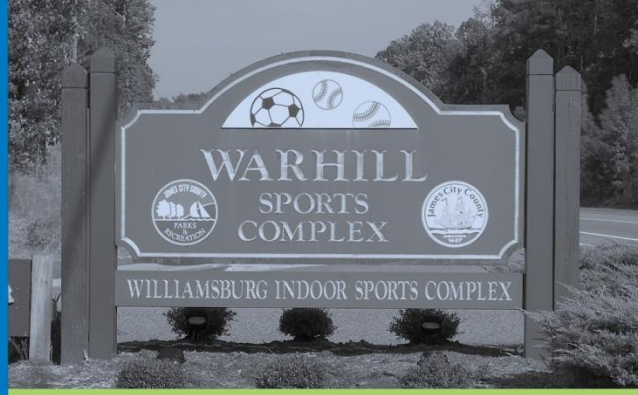


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Presentation Outline

- Recent Presentations
- Visual Preference Survey Results
- Traffic Volume Projections
  - Methodology
  - Peak Hour (AM and PM) Volumes
  - Arterial Traffic Volumes
  - Arterial Levels of Service
- Design Concept Examples
- Guiding Principles
- Next Steps

Next Steps

- **Workshops and Meetings**
  - ***Public Workshop – November 21, 2013***
    - Existing Conditions Analysis Findings
  - ***Public Workshop – February 2014***
    - Corridor Improvement Design Concepts
  - ***Public Workshop – May 2014***
    - Corridor Recommendations and Action Plan
  - Multiple PAC and TAT meetings planned between now and submittal of DRAFT FINAL and FINAL report.
  - Additional project update presentations are planned for both Policy Committee and Board of Supervisors

Existing Conditions - Traffic

Average daily traffic (ADT) volumes along the corridor today range from:

- 21,000 vehicles per day (vpd) - Route 199 to Lane Pl
- 16,500 vpd - Williamsburg Plantation to Olde Towne Rd
- 18,000 vpd - Glenburnie Rd to Buford Rd
- 13,000 vpd - Lafayette High School to Warhill Trail
- 8,700 vpd - west of Ford's Colony entrance
- 9,600 vpd - Olde Towne Rd northeast of Longhill Rd

Existing Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	37.6	A	31.9	B
Williamsburg W. Drive/Lane Place Drive	8.8	F	9.6	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	23.2	C	22.8	C
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.8	E	11.6	F
Overall	**22.1**	**C**	**20.9**	**D**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	29.0	B	25.7	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	22.1	C	20.3	D
Williamsburg W. Drive/Lane Place Drive	19.5	D	2.5	F
Olde Towne Road	13.4	E	6.0	F
Centerville Road	33.0	B	32.7	B
Overall	**25.7**	**C**	**12.4**	**F**

LOS A









LOS F


WILLIAMSBURG
AREA
TRANSPORT
You are on line
PURPLE
259-4093

Future Traffic Volume Projections

- HRTPO Regional Travel Demand Model
- 2034 Socio-Economic Data
- 2034 Traffic Assignments
- Develop annualized growth rates
- Current Zoning and allowable future development
- Existing business or institutions expansion
- Approved but unbuilt developments
- Undeveloped properties
- Historical Traffic Volume Trends

Future Conditions - Traffic

Average daily traffic (ADT) volumes anticipated along the corridor in the future range from:

- 28,500 vehicles per day (vpd) - Route 199 to Lane Pl
- 20,600 vpd - Williamsburg Plantation to Olde Towne Rd
- 22,500 vpd - Glenburnie Rd to Buford Rd
- 16,500 vpd - Lafayette High School to Warhill Trail
- 13,500 vpd - west of Ford's Colony entrance
- 12,000 vpd - Olde Towne Rd northeast of Longhill Rd

Guiding Principles

Longhill Road is an important corridor that connects people with significant places in our community; therefore, design improvements to the corridor should:

- Respect the context of the area,
- Safely accommodate all users,
- Respond to existing and projected traffic volumes,
- Be visually appealing, and
- Minimize impact to the natural and built environments.

The resulting improvements will integrate with existing neighborhoods, offer consistence with the comprehensive plan, and promote quality growth and economic vitality.

Future Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	38.3	A	26.4	C
Williamsburg W. Drive/Lane Place Drive	6.6	F	4.8	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	21.9	D	21.7	D
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.3	E	11.2	F
Overall	**19.2**	**D**	**14.2**	**E**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	28.8	B	25.8	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	21.7	D	17.7	D
Williamsburg W. Drive/Lane Place Drive	18.4	D	1.5	F
Olde Towne Road	19.2	D	3.4	F
Centerville Road	32.9	B	32.1	B
Overall	**27.6**	**C**	**8.2**	**F**

LOS A



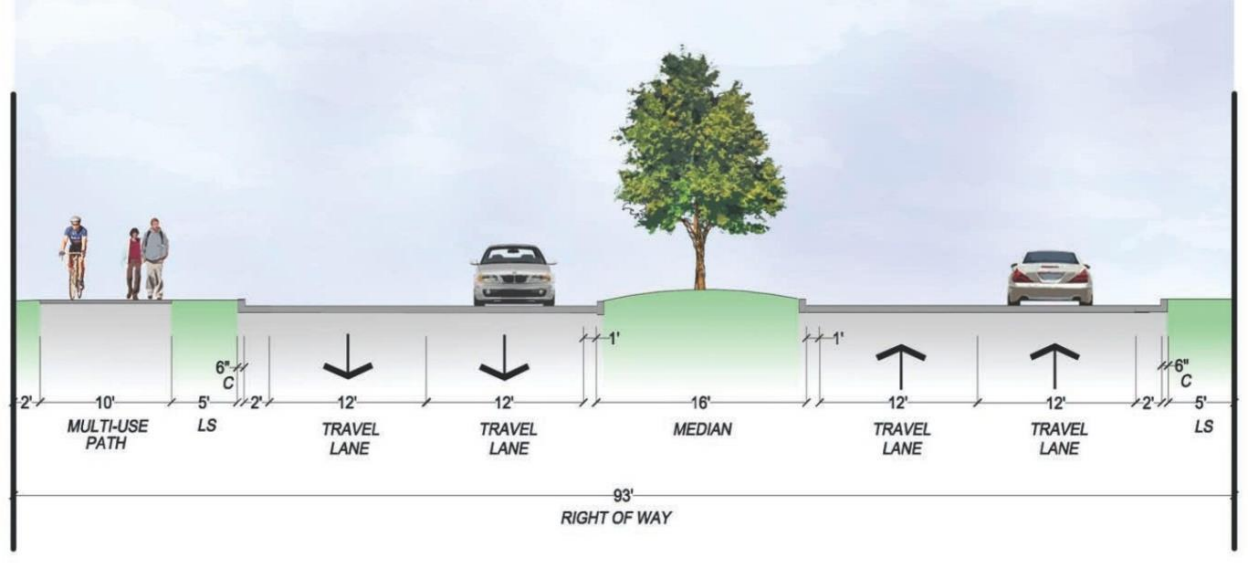






LOS F

Typical Section Options



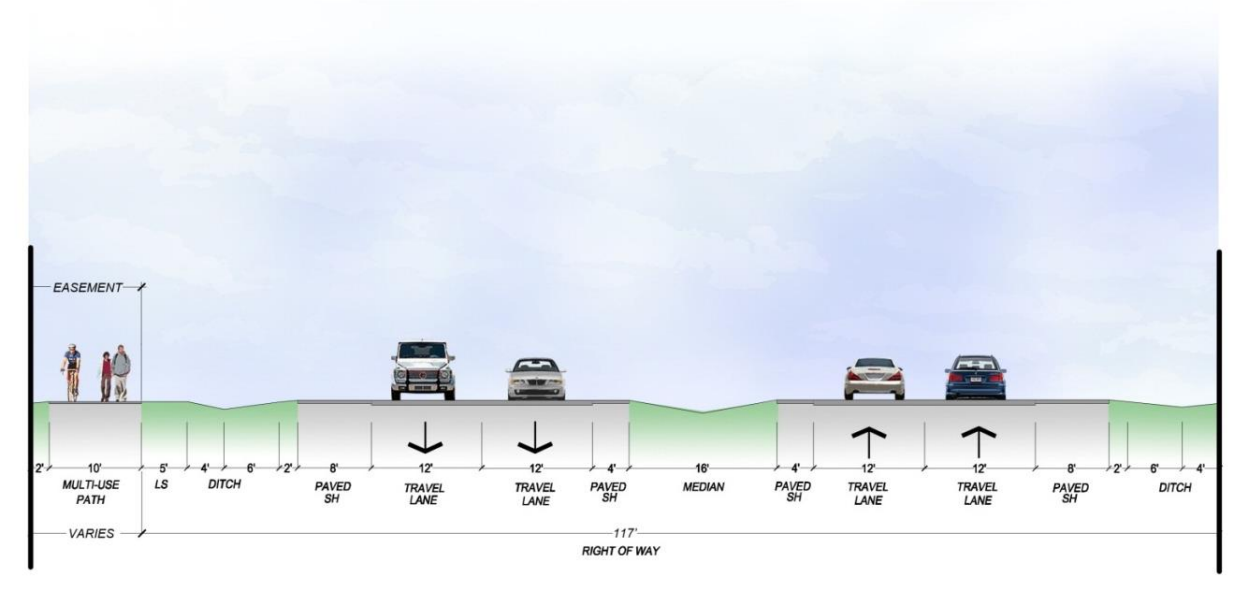
Pros

- 16'-20' median width intended to accommodate exclusive left-turn lanes and still maintain physical separation between opposing travel lanes
- Improves capacity of the roadway in comparison to existing roadway capacity
- Multi-use path provided to enhance pedestrian/bicyclist safety and connectivity
- Maintains existing suburban/urban roadway characteristics

Cons

- Requires acquisition of additional right-of-way (93' versus existing variable 50' to 100')
- Open drainage structure standards require significantly more area than curb and gutter drainage areas

Typical Section Options



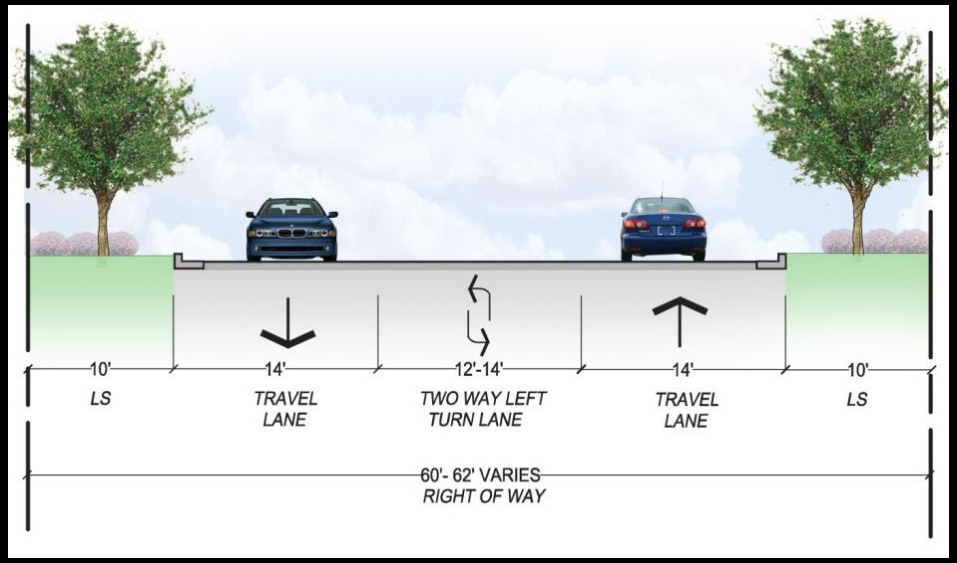
Pros

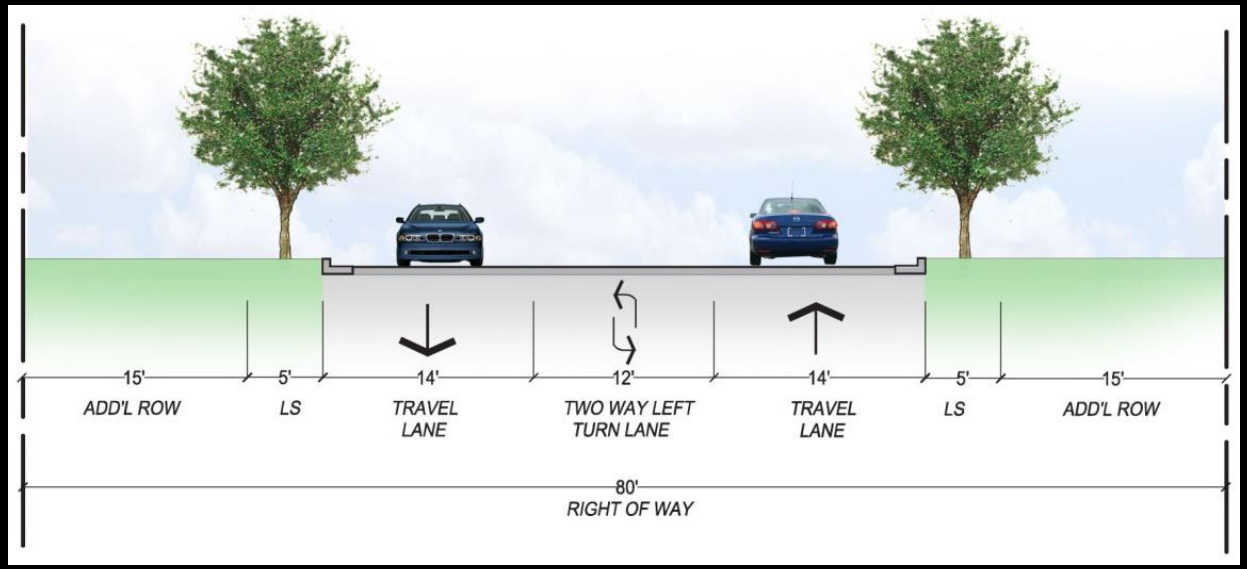
- 16'-20' median width intended to accommodate exclusive left-turn lanes and still maintain physical separation between opposing travel lanes
- Improves capacity of the roadway in comparison to existing roadway capacity
- Multi-use path provided to enhance pedestrian/bicyclist safety and connectivity

Cons

- Requires acquisition of additional right-of-way (117' versus 93')
- Open drainage structure standards require significantly more area than curb and gutter drainage areas
- Would require wider median if trees are under consideration within the median
- Creates/suggests more of a rural roadway character

Typical Section Options

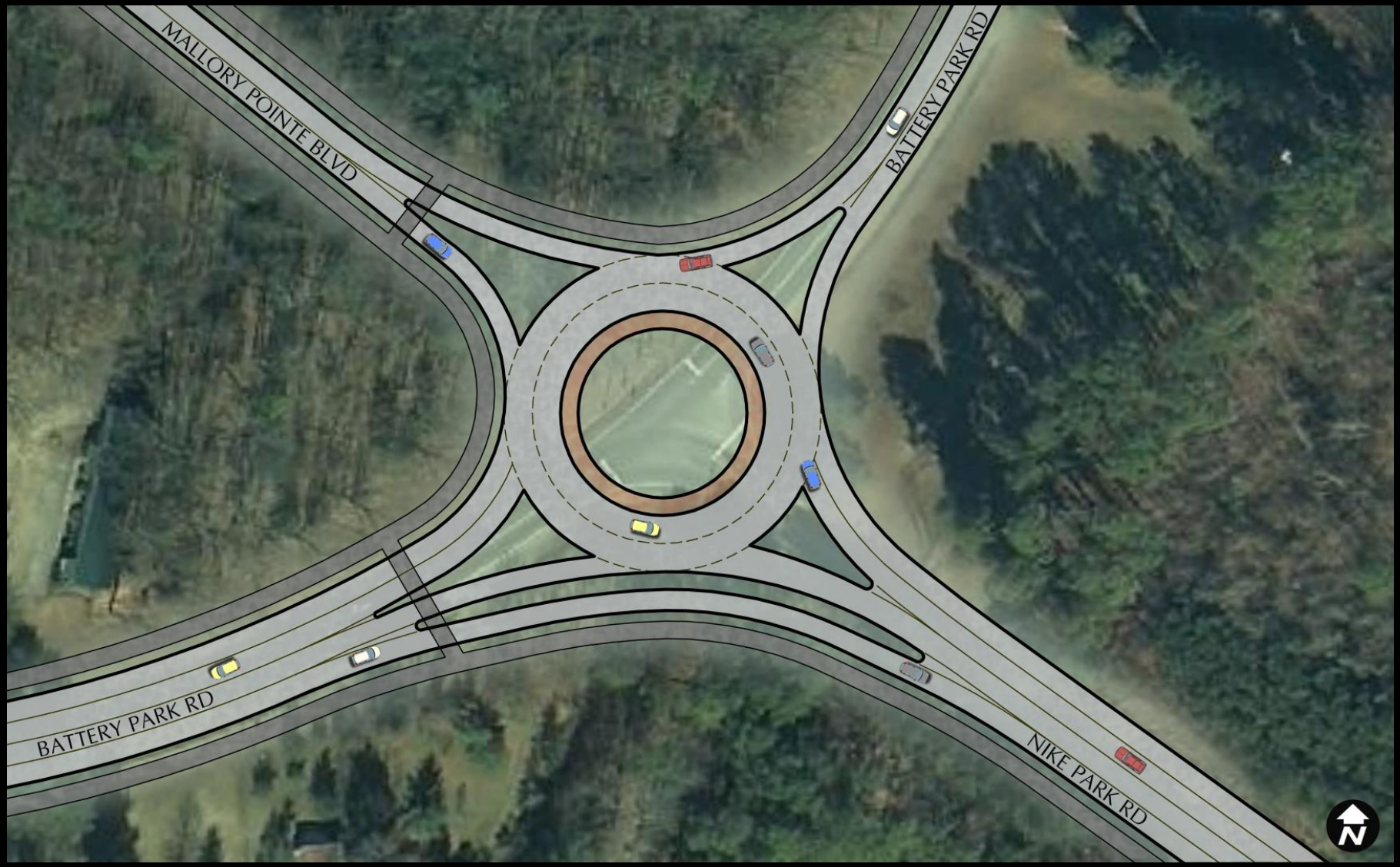




Concept Design Examples



Concept Design Examples



Concept Design Examples



Concept Design Examples

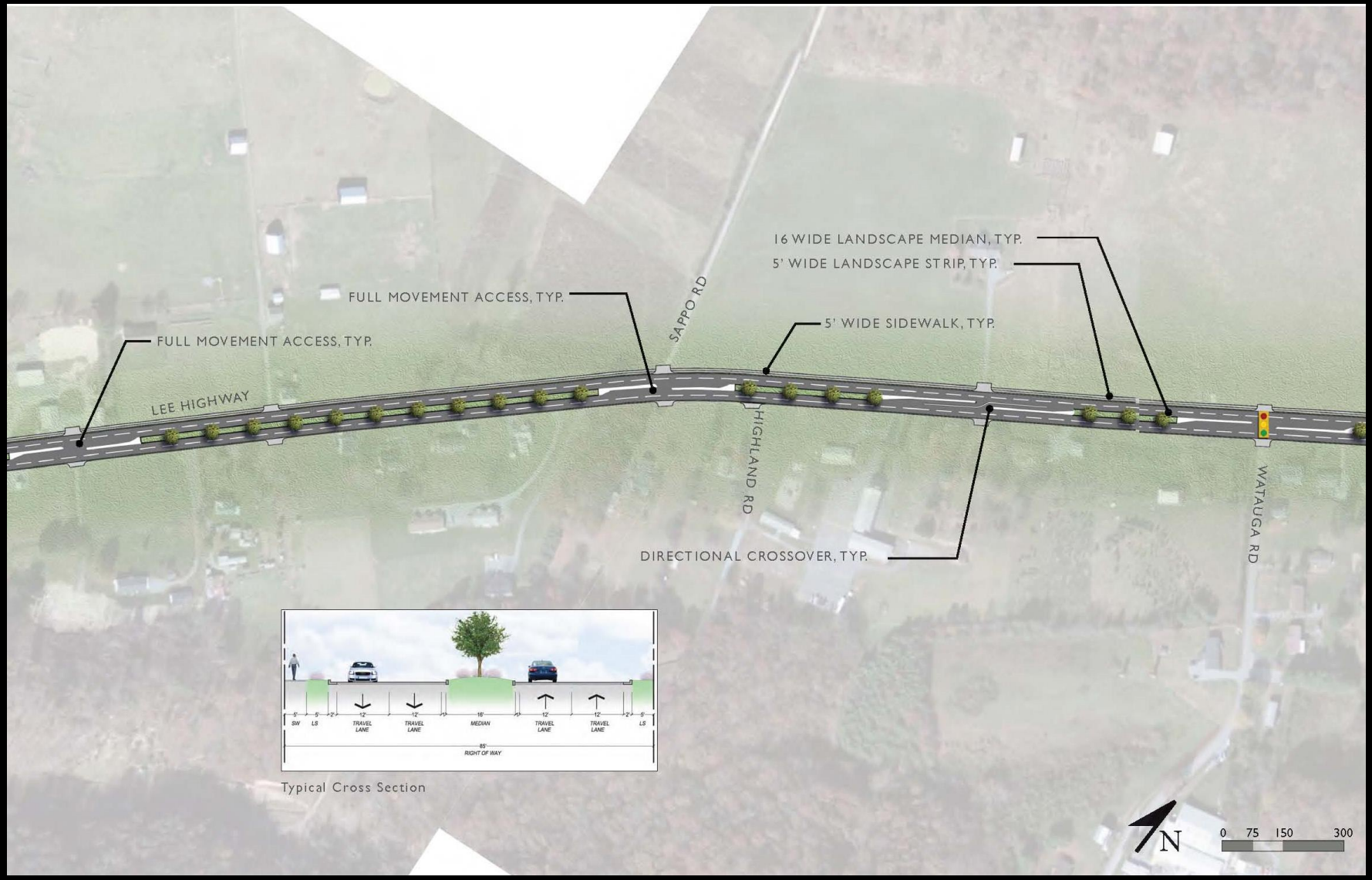


Concept Design Examples



Typical Cross Section

Concept Design Examples



Typical Cross Section

Upcoming Events

- **Workshops and Meetings**
  - ***Public Workshop – February 2014***
    - Corridor Improvement Design Concept Evaluation
    - Identification of Preferred Corridor Improvement Design Concept
  - ***Public Workshop – May 2014***
    - Corridor Recommendations and Action Plan
  - Additional PAC and TAT meetings planned between now and submittal of DRAFT FINAL and FINAL report.
  - Additional project update presentations are planned for both Policy Committee and Board of Supervisors

Next Steps

- Finalize Future Traffic Volume Projections
- Future Conditions Analysis
- Corridor Improvement Design Concepts Development and Alternatives Evaluation
- Identification of Preferred Corridor Improvement Design Concept
- Prepare DRAFT FINAL Report


Questions?

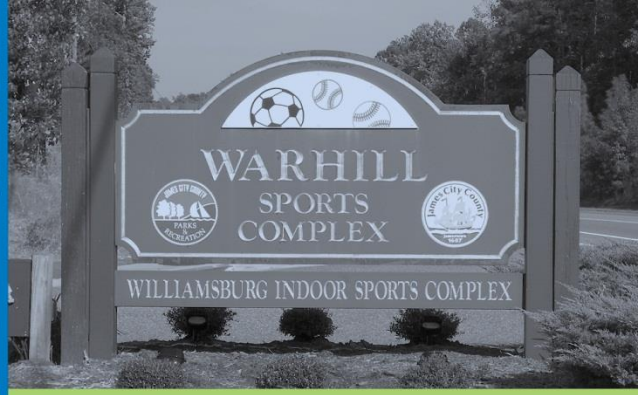


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Presentation Outline

- Recent Presentations
- Public Involvement
- Corridor Improvement Design Recommendations
- Future Conditions Options
- Next Steps

Recent Presentations

- **Workshops and Meetings**
  - ***Public Workshop – 19 – 20 February 2014***
    - Corridor Improvement Design Concepts
  - ***Policy Committee Briefing – 13 March 2014***
  - ***King of Glory Lutheran Church field meeting***
  - ***Williamsburg Montessori School field meeting***

Public Involvement Results



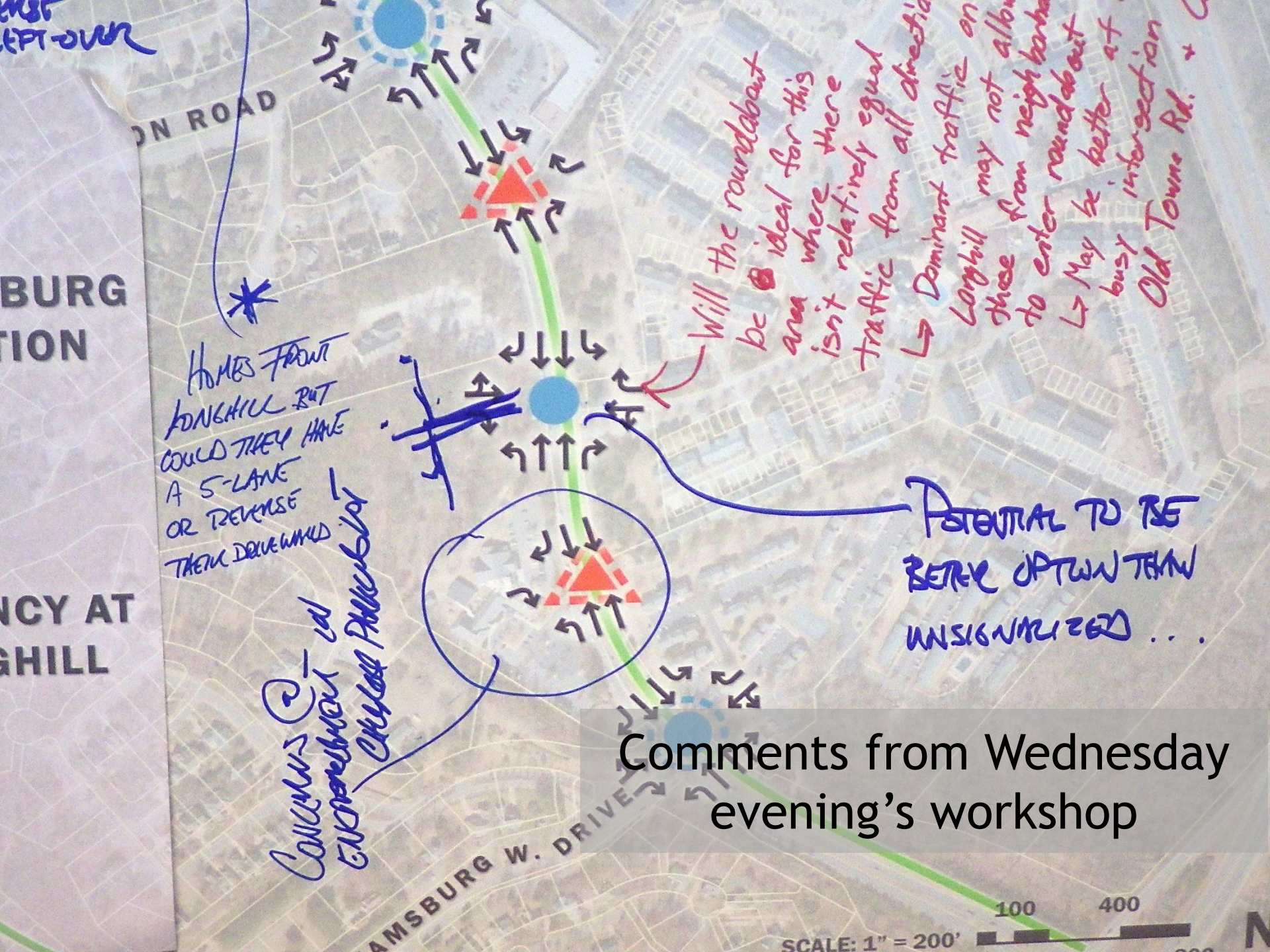
Comments from Wednesday evening's workshop



TYPICAL 4 LANE CROSS SECTION

SS SECTION



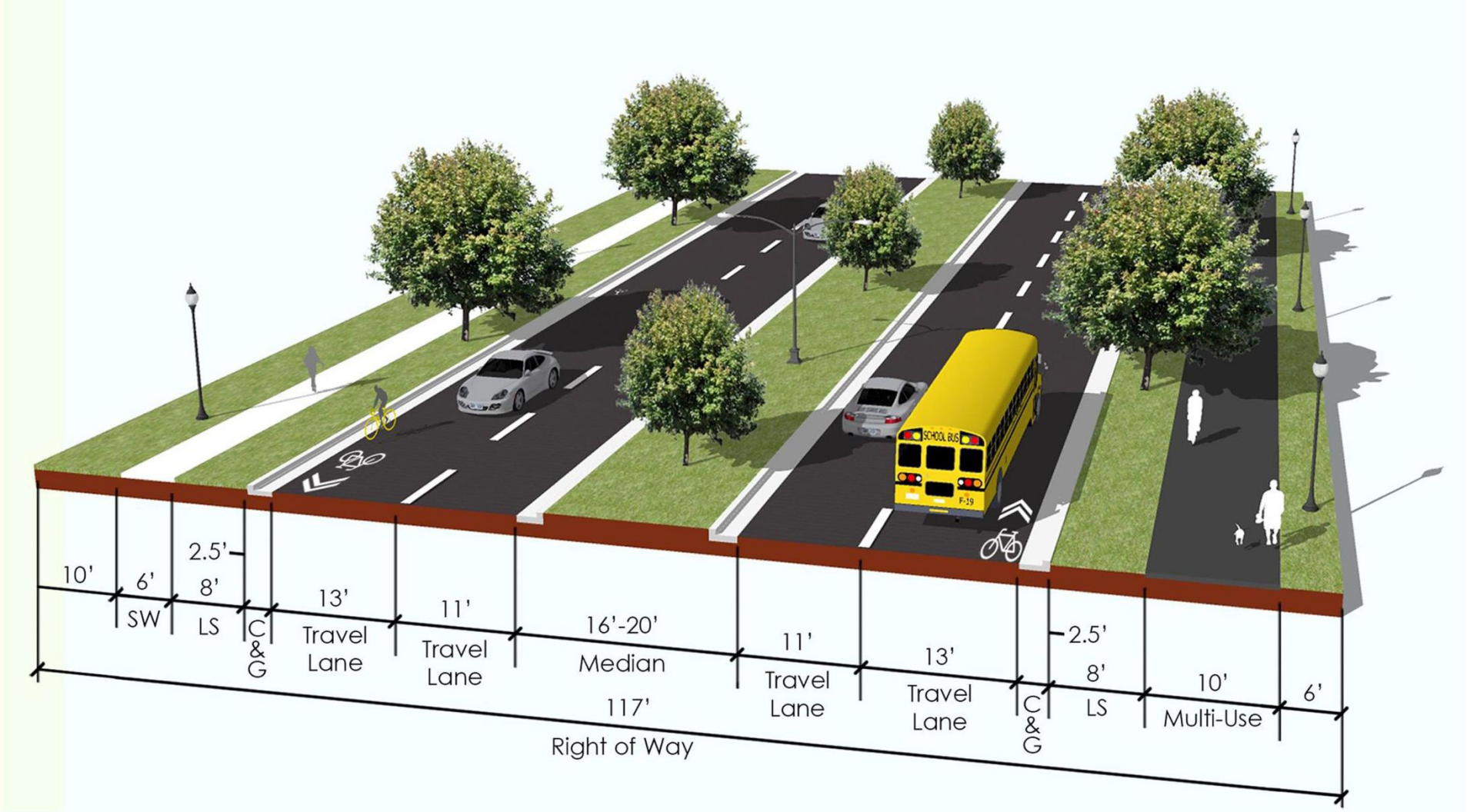


Comments from Wednesday evening's workshop

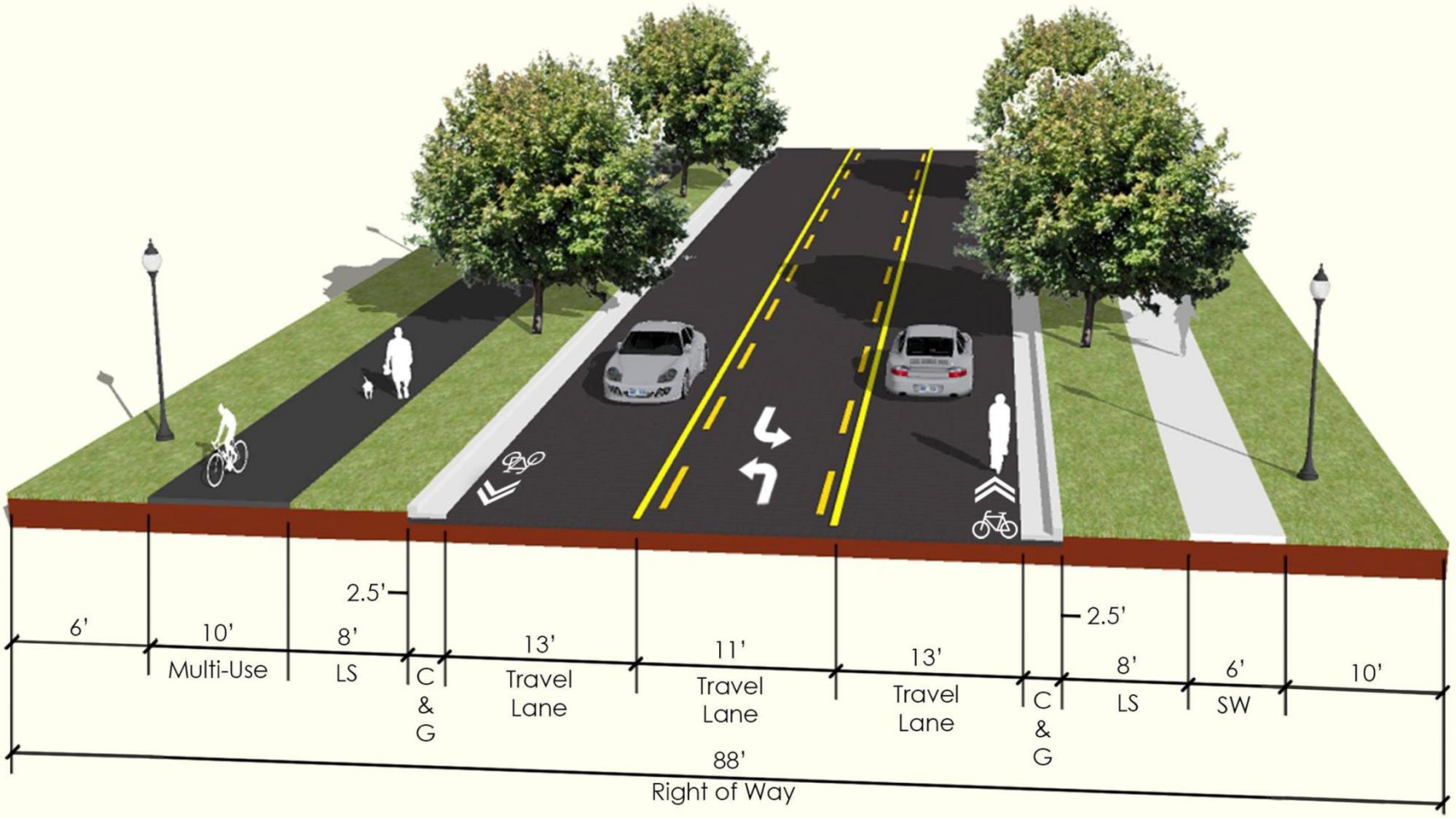
Some Things We Heard…

Comment	Action Plan		
	Agree	Consider	Disagree
1. Provide roundabout at Centerville Rd / Longhill Rd			✓
2. Connection from Warhill Sports Complex to Longhill Road.		✓	
3. Install traffic signalization at Warhill Trail and Season's Trace before roadway widening.		✓	
4. Provide a roundabout at Season's Trace.			✓
5. Provide a full movement unsignalized intersection at Glenburnie Road.	✓		
6. Provide a roundabout at Williamsburg West Drive.			✓
7. Provide street lights along corridor.	✓		
8. Provide high visibility crosswalks.	✓		
9. Remove the sidewalk since a multi-use path is provided			✓
10. Modify shared bike lane (either remove or offer dedicated)		✓	

Median Divided Boulevard



Three-lane Complete Street




CENTERVILLE ROAD
JOLLY POND VETERINARY HOSPITAL
LONGHILL ROAD
BURTON WOODS DR
6'
10' Multi-Use
2.5'
8' LS
C & G
13' Travel Lane
11' Travel Lane
13' Travel Lane
C & G
2.5'
8' LS
6' SW
10'
88' Right of Way


LONGHILL ROAD
BURLINGTON LANE
NEW ZION
BAPTIST CHURCH

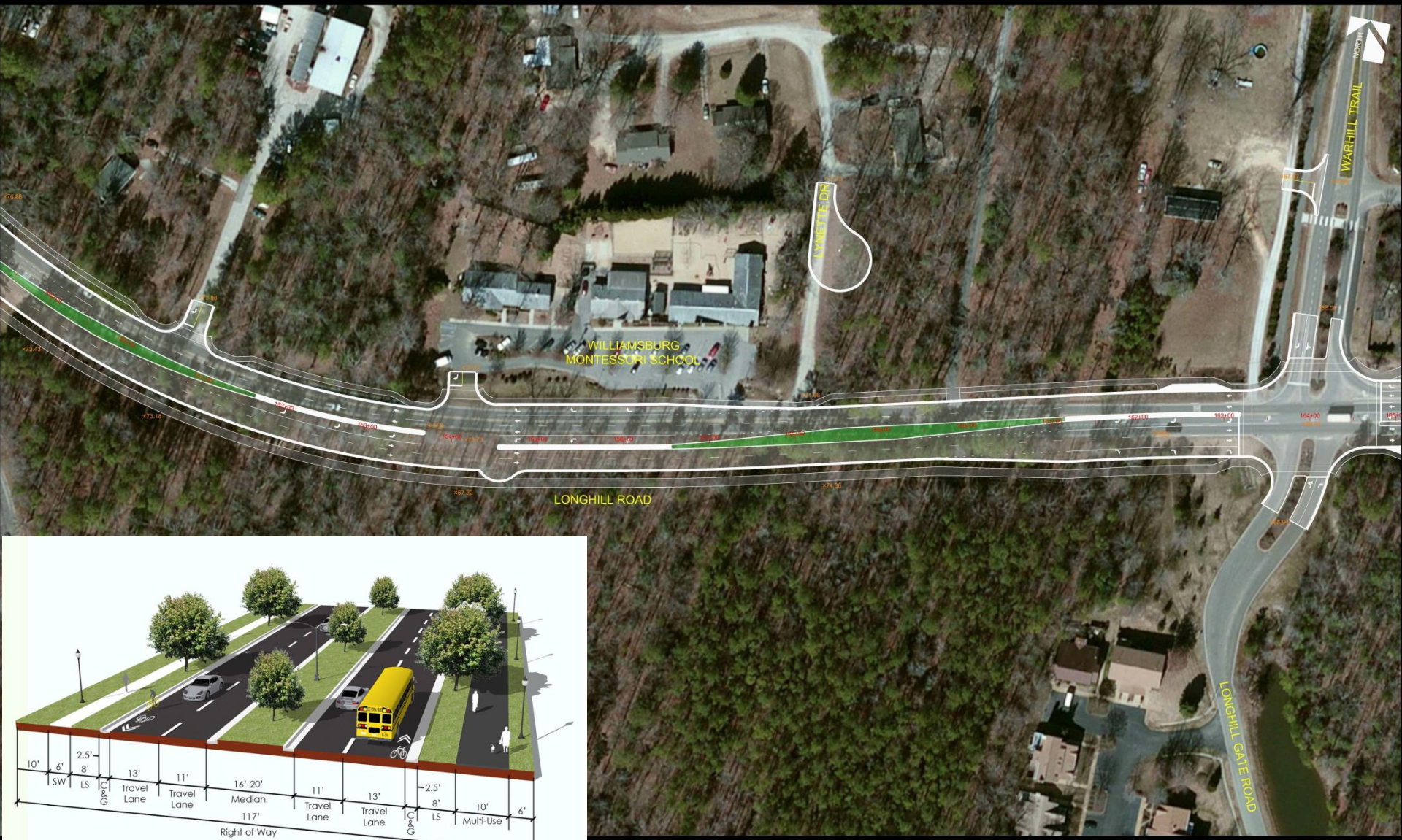

NORTH
LONGHILL ROAD
BURLINGTON LANE
NEW ZION
BAPTIST CHURCH


LONGHILL ROAD
BURLINGTON LANE
NEW ZION
BAPTIST CHURCH


NORTH
DOMINION VILLAGE
LONGHILL ROAD
FORDS COLONY DR

Transition area 3 to 4-lanes

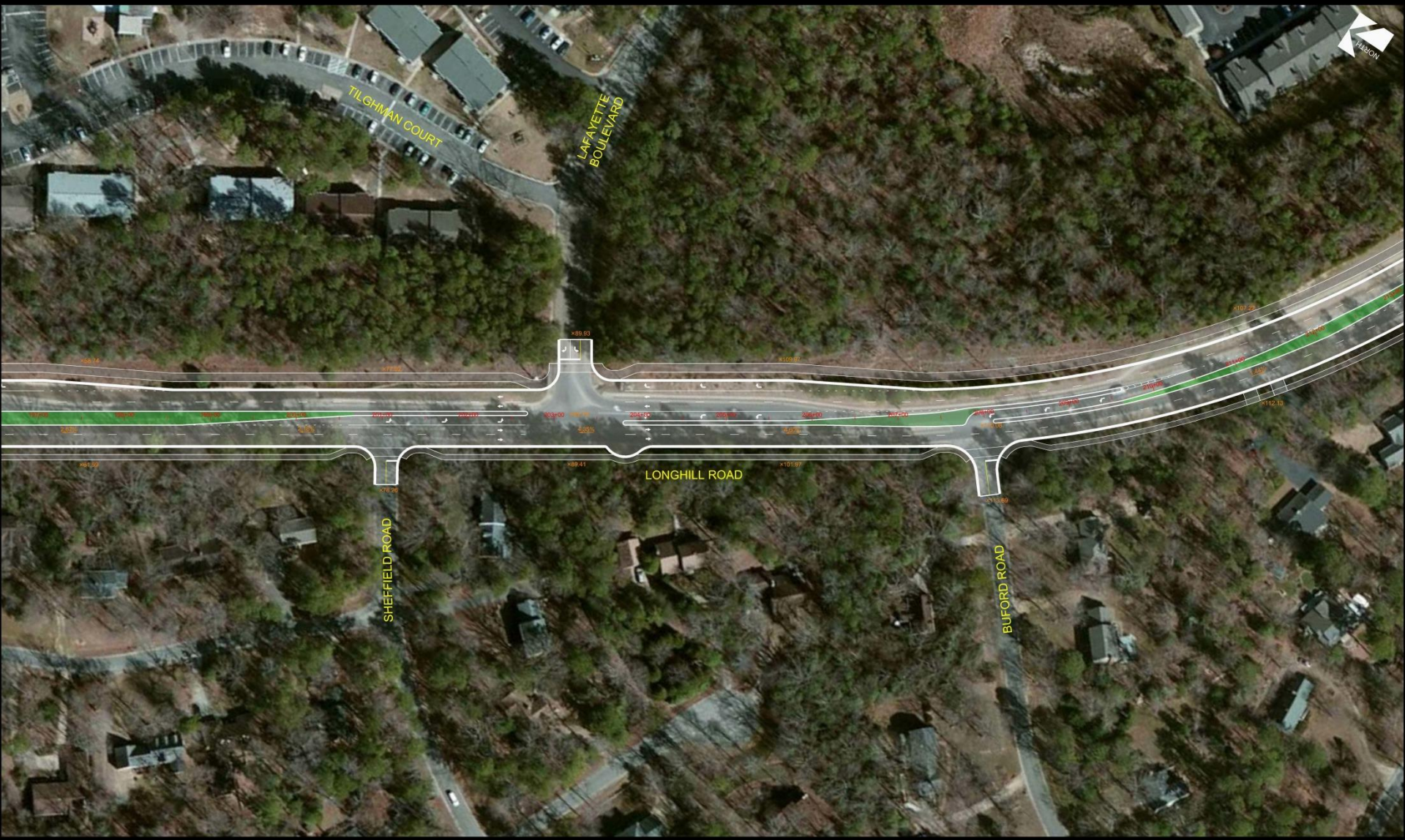



WILLIAMSBURG
MONTESSORI SCHOOL
LYNETTE DR
WARHILL TRAIL
LONGHILL ROAD
LONGHILL GATE ROAD

10'
6'
SW
2.5'
8'
LS
C&G
13'
Travel Lane
11'
Travel Lane
16'-20'
Median
11'
Travel Lane
13'
Travel Lane
C&G
2.5'
8'
LS
10'
Multi-Use
6'
117'
Right of Way


BLUE BILL RUN
LONGHILL ROAD
LAFAETTE HIGH SCHOOL
NORTH
CHRISTIAN LIFE CENTER
WILLIAMSBURG CHURCH


SEASON'S TRACE
LONGHILL ROAD
LAFAETTE HIGH SCHOOL
NORTH

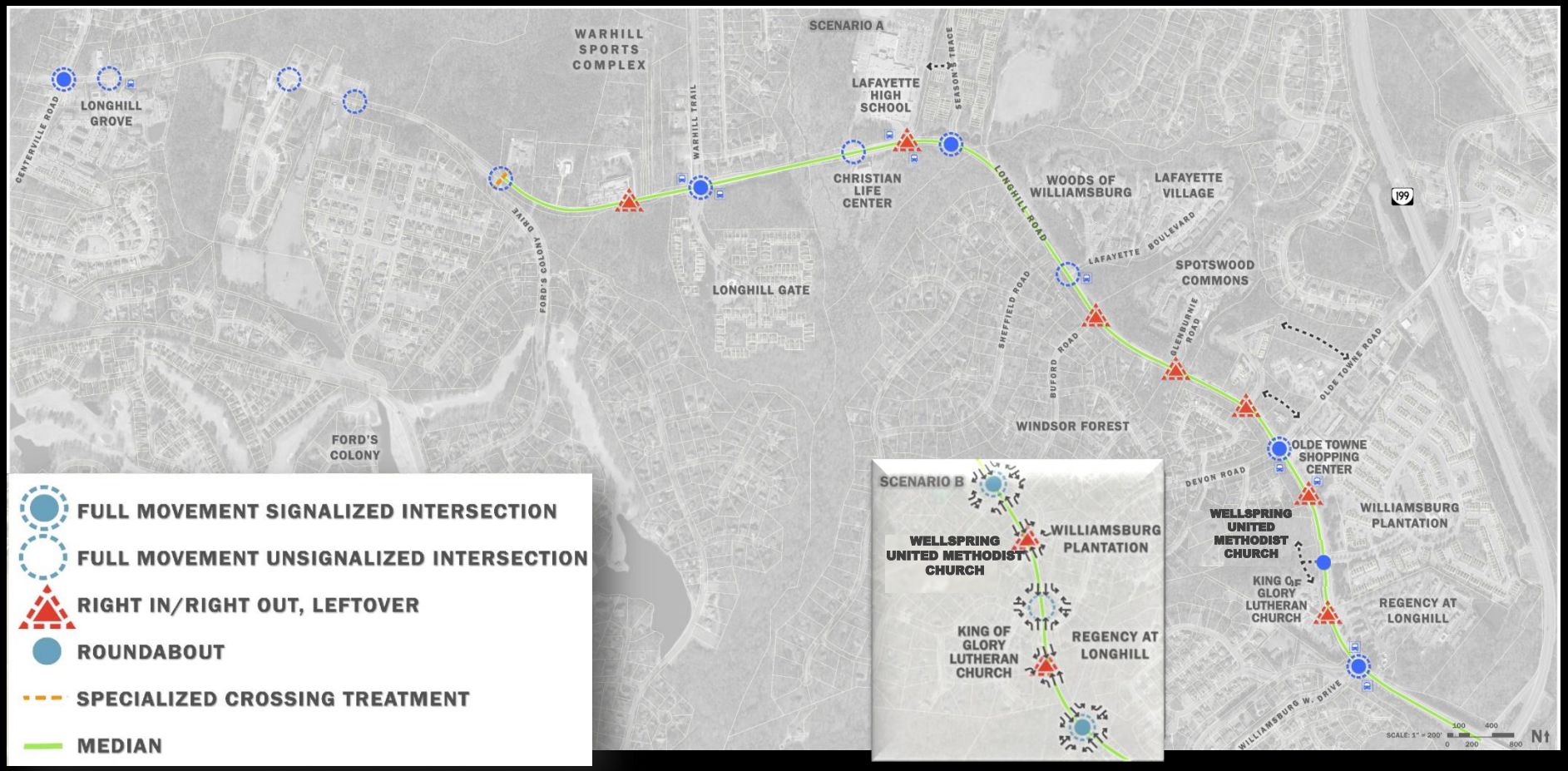

TILGHMAN COURT
LAFAYETTE BOULEVARD
LONGHILL ROAD
SHEFFIELD ROAD
BUFORD ROAD


GLENBURNIE ROAD
NEW POINT ROAD
LONGHILL ROAD
OLDE TOWNE ROAD
DEVON ROAD
NORTH


WILLIAMSBURG PLANTATION DR
OLDE TOWNE SHOPPING CENTER
LONGHILL ROAD
KENDALE LANE
WILLIAMSBURG PLANTATION DR
CONCEPTUAL FUTURE DEVELOPMENT
NORTH


NORTH
LANE PLACE DRIVE
LONGHILL ROAD
WILLIAMSBURG WEST DRIVE
HUMELSINE PARKWAY

Access Management Strategy



FULL MOVEMENT SIGNALIZED INTERSECTION

FULL MOVEMENT UNSIGNALIZED INTERSECTION

RIGHT IN/RIGHT OUT, LEFTOVER

ROUNDABOUT

SPECIALIZED CROSSING TREATMENT

MEDIAN

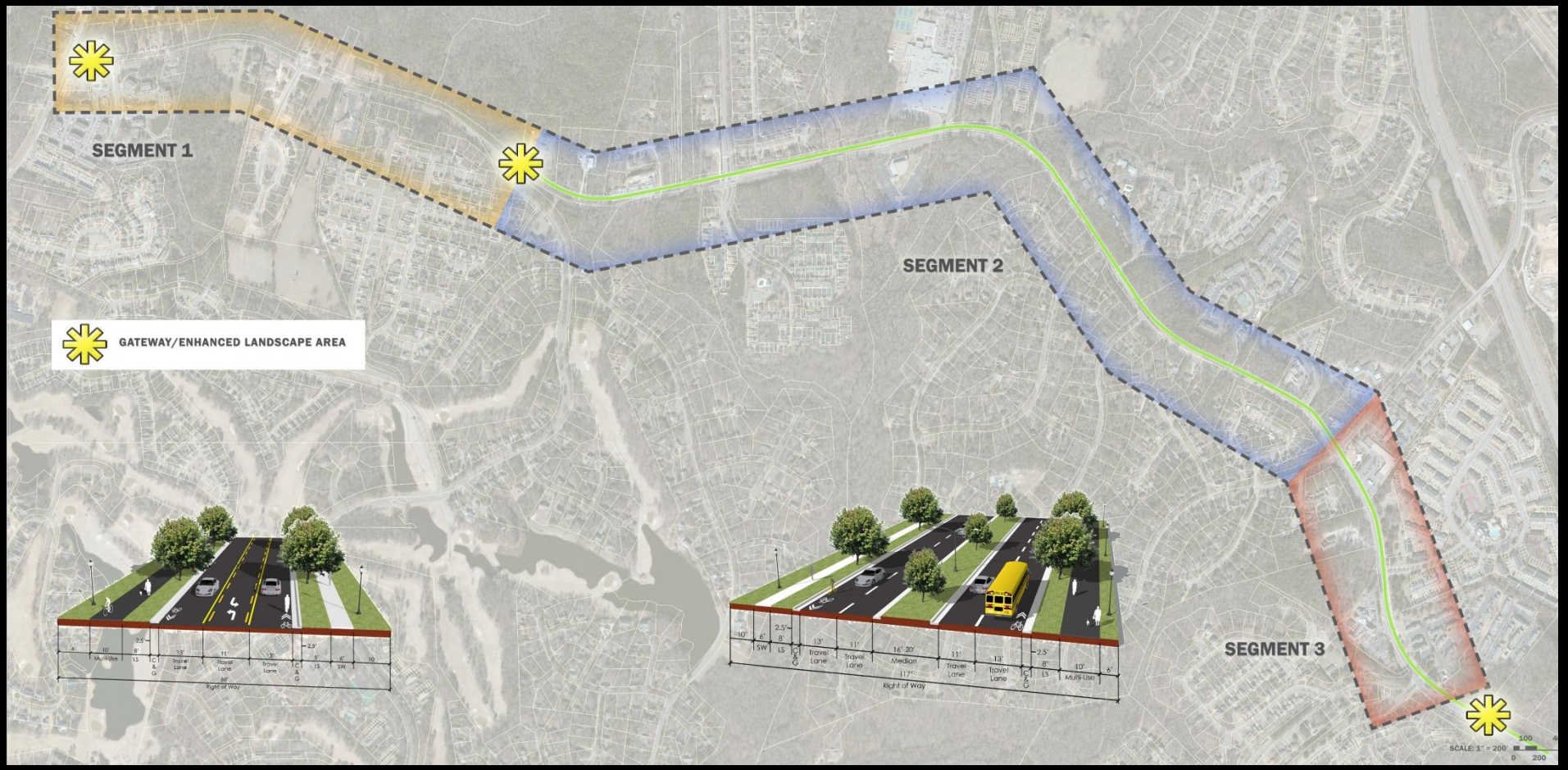


Access Management Techniques





Phased Implementation



Future Conditions - Traffic

Average daily traffic (ADT) volumes anticipated along the corridor in the future range from:

- 25,850 vehicles per day (vpd) - Route 199 to Lane Pl
- 20,500 vpd - Williamsburg Plantation to Olde Towne Rd
- 22,500 vpd - Glenburnie Rd to Buford Rd
- 19,600 vpd - Lafayette High School to Warhill Trail
- 13,150 vpd - west of Ford's Colony entrance
- 11,800 vpd - Olde Towne Rd northeast of Longhill Rd

Future No-Build Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	37.6	A	20.6	D
Williamsburg W. Drive/Lane Place Drive	6.4	F	3.8	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	21.9	D	21.6	D
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.3	E	11.2	F
Overall	**18.9**	**D**	**11.4**	**F**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	28.8	B	25.8	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	21.8	D	17.7	D
Williamsburg W. Drive/Lane Place Drive	17.9	D	1.2	F
Olde Towne Road	18.1	D	2.6	F
Centerville Road	33.0	B	29.7	B
Overall	**27.3**	**C**	**6.7**	**F**

LOS A









LOS F

Future Alternative 1 Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Longhill Gate Road	39.8	A	38.2	A
Season's Trace	33.8	B	34.4	B
Old Towne Road	38.1	A	35.8	A
Williamsburg W. Drive/Lane Place Drive	20.6	D	14.0	E
Humelsine Parkway (Route 199) EB Off/On-Ramp	29.9	B	31.0	B
Humelsine Parkway (Route 199) WB Off/On-Ramp	17.9	D	13.6	E
Overall	**33.9**	**B**	**30.9**	**B**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	30.5	B	22.1	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	24.2	C	13.0	F
Williamsburg W. Drive/Lane Place Drive	29.8	B	20.5	D
Olde Towne Road	18.1	D	16.9	E
Season's Trace	40.5	A	39.2	A
Warhill Trail	34.1	B	32.6	B
Centerville Road	32.3	B	32.1	B
Overall	**31.7**	**B**	**28.1**	**B**

LOS A









LOS F

Future Alternative 2 Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Longhill Gate Road	42.2	A	38.3	A
Season's Trace	31.6	B	35.9	A
Old Towne Road	38.0	A	34.8	B
Williamsburg W. Drive/Lane Place Drive	20.9	D	14.0	E
Humelsine Parkway (Route 199) EB Off/On-Ramp	26.9	C	30.6	B
Humelsine Parkway (Route 199) WB Off/On-Ramp	17.9	D	13.3	E
Overall	**33.9**	**B**	**30.8**	**B**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	29.9	B	22.1	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	19.6	D	13.8	E
Williamsburg W. Drive/Lane Place Drive	30.3	B	20.6	D
Olde Towne Road	17.6	D	15.1	E
Season's Trace	37.8	A	40.0	A
Warhill Trail	34.6	B	27.6	C
Centerville Road	33.3	B	32.1	B
Overall	**31.3**	**B**	**27.4**	**C**

LOS A









LOS F

Upcoming Events

- **Workshops and Meetings**
  - New Zion Baptist Church Meeting
  - Public Workshop – 7:00 to 9:00, May 8, 2014
  - Post Public Workshop PAC Meeting
  - Additional project update presentations are planned for both Policy Committee and Board of Supervisors

Next Steps

- Finalize Corridor Design Renderings
- Prepare DRAFT FINAL Report
- FINAL Report
- Approval of the study by the James City County Planning Commission
- Presentation and approval of the study by the James City County Board of Supervisors


Questions?

Longhill Road Corridor Study
Stakeholder Interview Questionnaire

1) Which of the following best describes your relationship to the corridor: (check all that apply)
   - Permanent Resident
   - Non-Resident Property Owner
   - Owner/operator of a business along the corridor
   - Commuter
   - Employee in the City/County
   - Other _____

2) Overall, how would you rate the transportation system along the corridor (streets, bikeways, pedestrian facilities)?
   - Excellent
   - Good
   - Fair
   - Poor

3) How often do you typically travel along any segment of the corridor?
   - Almost daily
   - A few times a week
   - A few times per month
   - Less than once per month
   - Never

4) What is your primary mode of travel when using the corridor?
   - Passenger vehicle
   - Bus
   - Bicycle
   - Walk
   - Other _____

5) At which of the following times of the day do you most often travel on any segment the corridor?
   - Morning rush hour (6-9am) on a weekday (Mon-Fri)
   - Evening rush hour (4-6pm) on a weekday (Mon-Fri)
   - Both the morning and evening rush hours on a weekday (Mon-Fri)
   - During the middle of the day (9am-4pm) on a weekday (Mon-Fri)
   - Other times (6pm-6am) on a weekday (Mon-Fri)
   - On the weekend (Sat-Sun)

6) How would you rate the following transportation issues along the corridor?

	Excellent	Good	Fair	Poor
Condition of Road	☐	☐	☐	☐
Traffic Flow	☐	☐	☐	☐
Traffic Safety	☐	☐	☐	☐
Attractiveness of Road	☐	☐	☐	☐
Pedestrian Accommodations	☐	☐	☐	☐
Bicycle Paths/Lanes/Greenways	☐	☐	☐	☐
Signal System (traffic lights)	☐	☐	☐	☐

Longhill Road Corridor Study
Stakeholder Interview Questionnaire

7) What is the corridor's greatest asset?

8) Are there components or characteristics of the corridor that should be preserved (e.g., environment or character)?

9) What are your biggest concerns along the corridor (e.g., Safety, Traffic Operations/Congestion, Environmental Impacts)?

10) What is the biggest obstacle standing in the way of enhancing bicycle or pedestrian mobility?

11) Are any of the following NEEDED along the corridor?

	Yes	No
Business Offices	☐	☐
Supermarkets	☐	☐
More Parks/Open Space	☐	☐
Daycare Facilities	☐	☐
Hospital/Medical Services	☐	☐
Schools	☐	☐
Affordable Housing	☐	☐
Restaurants	☐	☐
Other _____		

12) What type of development is desired within the study area? (check all that apply)

- Single Family
- Multi-family
- Townhouse/Condominium
- Traditional Neighborhoods
- Commercial Centers
- Business Parks
- Mixed Use Developments

Longhill Road Corridor Study
Stakeholder Interview Questionnaire

13) By the year 2034, what change(s) would you most like to see along the corridor? (ask for the stakeholder's top three choices)

- Improved traffic flow
- More local shopping and restaurants
- Increased job availability
- More bicycle and walking paths and sidewalks
- Improved recreational activities
- Improved appearance
- Enhanced wayfinding and signage cleanup
- Preserve the corridor as is
- Clean up utilities and add street trees
- Other _____

14) How important are the following improvements?

	Top Priority	Somewhat Important	Not Important
Increase roadway capacity (e.g., widen to 4-lanes)	☐	☐	☐
Access management	☐	☐	☐
Raised landscaped median	☐	☐	☐
Sidewalks/Multi-Use paths	☐	☐	☐
Crosswalks/pedestrian accommodations at intersections	☐	☐	☐
Create 'gateway' features	☐	☐	☐
Traffic calming	☐	☐	☐
Truck/Heavy vehicle safety improvements	☐	☐	☐
Bike lanes	☐	☐	☐
Improve bus/public transit stops	☐	☐	☐
Improve storm drainage facilities	☐	☐	☐
Additional parks & recreation facilities	☐	☐	☐
Walkable neighborhoods and commercial centers	☐	☐	☐
Creating activity nodes	☐	☐	☐
Increase jobs and per capita tax base	☐	☐	☐
Other _____	☐	☐	☐

Longhill Road Corridor Study
Stakeholder Interview Questionnaire

15) What is the most important element of this project to you?

16) Are there any currently proposed or planned development activities along the corridor that we should be taking into account as a part of the corridor study? _____.

    a. If yes, please provide any details (e.g., project location, new, expansion of existing, or redevelopment opportunity, size of development, type of development):

Thank you for your time and your input.

LONGHILL ROAD CORRIDOR STUDY
STAKEHOLDER INTERVIEW QUESTIONNAIRE

1. Which of the following best describes your relationship to the corridor:

Permanent Resident	Non-Resident Property Owner	Owner/Operator of a business along the corridor	Commuter	Employee in the City/County	Other
10		10	1	6	Dev. Com for Ford Colony
					WATA
					Consultant to 7-11
					Ford's Colony HOA Rep
					Recreational User - Planning Commissioner
					Jamestown District

2. Overall, how would you rate the transportation system along the corridor (streets, bikeways, pedestrian facilities)?

Excellent	Good	Fair	Poor
	11	11	3

Old Town to 199 - bad between 33-6
Warhill 3-7
Staff traffic control at high school in PM release
Fair now but would be good once widening from 199 - Olde Towne
Pullouts impacts to traffic
Following the bus
Operational safety issues
Past the high school no safe provision for bicyclists or peds
Safety for connectivity
High Volumes
Speed - conflicts between cars and peds
Traffic signal originally planned at Warhill/Longhill Gate intersection

3. How often do you typically travel along any segment of the corridor?

Almost daily	A few times a week	A few times per month	Less than once a month	Never
15	4	1		

4. What is your primary mode of travel when using the corridor?

Passenger vehicle	Bus	Bicycle	Walk	Other
19	3	1		

5. At which of the following times of the day do you most often travel on any segment of the corridor?

Morning rush hour on a weekday	Evening rush hour on a weekday	Both morning and evening rush hours on a weekday	During the middle of the day	Other times on a weekday	On the weekend
5	2	9	11	4	6

WATA covers these times through the day
Any time of the day 7 days a week

6. How would you rate the following transportation issues along the corridor?

	Excellent	Good	Fair	Poor
Condition of the Road	1	19		
Traffic Flow		9	11	3
Traffic Safety	1	4	14	4
Attractiveness of Road	1	9	8	1
Pedestrian Accommodations		4	5	10
Bicycle Paths/Lanes/Greenways		6	5	10
Signal System (traffic lights)		11	6	6

Bad signal timing - no ped phases - no gaps further along the corridor
Signal near Windsor Forest
School flashers need enforcement

7. What is the corridor's greatest asset?

King of Glory	
Diverse - mixed use	
Connecting Centerville to middle of county	
Exc. Residential area	
Access to high school and WSK	
Wooded/setbacks	
Connection the corridor - connecting 199 to Centerville	
Connectivity to other roads	4
Temporarily moves traffic - connects 4 lanes	
Moves traffic - temporarily	
Choke points at 2-4 lane section	
Green space - nice road to travel	2
Begging for additional amenities	
Links two rec facilities - JCC Rec Center and Warhill	
Four churches, 3 schools, key link in network	
Road paving and striping	
Mixed use of res/rec/bus	2
Locality/functionality	
Functionality of road as an arterial	
Character of the road, following the contour of the land	
Variety of residential areas	
Buffer between road and neighborhoods	
Greenery/landscaping trees	2

8. Are there components or characteristics of the corridor that should be preserved (E.g., environment or character)?

Parking for church	
Green!	
Rural nature	
Tree buffer	4
Tree lined - surrounding greenery	
Preserve woods - like wooded view across from Montessori School	
Trees/Greenery	
Rural character	
Rural - trees and plantings	
4 lanes the whole way	
Preserve the green space	3
Aesthetic component/feel of the roadway	
Maintain residential/school feel - more like residential boulevard	
Not introduce/accommodate commercial traffic	
Environmental preservation	3
Access	
The character - a pretty road	
Environment - trees/landscaping	
Wetlands need to be preserved	

9. What are your biggest concerns along the corridor (e.g., safety, traffic operations/congestion, environmental impacts)?

Access in and out
Safety 3
Maintaining existing utilities - adjustment and access
WSK - traffic safety (lefts out)
7-11 heading east
Safety during drop-off and pick up at Montessori School
Safety and congestion
Safety/parent drop off
Safety-choke points 2
Traffic congestion in the vicinity of Olde Towne Road intersection
Safety (pedestrian crosswalks at signalized intersections)
All 3 - address them now!!
Lack of bike lane and pedestrian access
Short sighted fixes
Traffic congestion during peak hour conditions, otherwise not bad
Curvature safety - sight distance, speeding
Traffic at school, dropping kids off, congestion, traffic trying to exit
Congestion
Traffic operations and congestion stemming safety concerns
Pedestrian safety and vehicular safety/vehicles exiting the church (Wellspring UMC) (turn lane between their site driveway)
Potential environmental impacts

10. What is the biggest obstacle standing in the way of enhancing bicycle or pedestrian mobility?

Real Estate/RW...$
Space and green corridor
Cost and impact to tree buffer
Costs associated 5
Lack of ROW 3
Taking of more green space
Already have bike lanes - dangerous though 2
Doesn't use as pedestrian 2
Traffic ROW needs/acquisition to accommodate these facilities. Resulting signal timing cost.
Potential bus shelter
Prepare map/graphic that reflects actual location of each WATA stop along the corridor.
Being short sighted about not including these components in the improvements
Land and money
Probably acquiring the land
TOPO challenge along the corridor/grading this for ADA
Prefer multi-use path 10' versus traditional in road bike lane
Land acquisition - what is ROW or easement arrangement?
Connectivity to adjacent bike/trail network
Right of way/space (easements)

11. Are any of the following NEEDED along the corridor?

	Yes	No
Business Offices	3	16
Supermarkets	1	15
More Parks/Open Space	2	13
Daycare Facilities	3	14
Hospital/Medical Services	3	16
Schools	3	15
Affordable Housing	1	15
Restaurants	2	15

Other

Multi-use trail and connectivity to both sides of road
Multi-use trail and bike paths

12. What type of development is desired within the study area?

Single Family	1
Multi-Family	
Townhouse/Condominium	
Traditional Neighborhoods	3
Commercial Centers	1
Business Parks	1
Mixed Use Developments	2

Light commercial
No - feels congested already 2
Fewer commercial ___ towards 199 or other side of 199
Already plenty of commercial space available
Affordable housing as a part of mixed use development
None 4
Maybe townhouses and condos

13. By the year 2034, what change(s) would you most like to see along the corridor? (ask for the stakeholder's top three choices)

Improved traffic flow	16
More local shopping and restaurants	1
Increased job availability	3
More bicycle and walking paths and sidewalks	17
Improved recreational activities	3
Improved appearance	2
Enhanced way finding and signage cleanup	4
Preserve the corridor as is	4
Clean up utilities and add street trees	7
Other	2

Stormwater management
Relocate and place utilities underground
Indoor tennis at Warhill
Keep the trees
Ped safety

14. How important are the following improvements?

	Top Priority	Somewhat Important	Not Important
Increase roadway capacity (e.g., widen to 4 lanes)	13	5	2
Access management	11	6	
Raised landscaped median	5	5	9
Sidewalks/Multi-Use paths	12	6	
Crosswalks/pedestrian accommodations at intersections	15	3	1
Create 'gateway' features		7	10
Traffic Calming	6	9	4
Truck/heavy vehicle safety improvements	4	7	7
Bike lanes	11	7	1
Improve bus/public transit stops	10	6	3
Improve storm drainage facilities	6	10	3
Additional parks & recreation facilities	3	3	12
Walkable neighborhoods and commercial centers	4	5	8
Creating activity nodes		6	11
Increase jobs and per capita tax base	3	6	7
Other			

Operations of side street driveways during peak conditions

15. What is the most important element of this project to you?

Timely completion and recommendations
Access Management 2
Maintaining access to utilities and impacts to them
Stakeholder input - not going to learn anything new - problems already exist
Not widening into school property
Not widening/impacting their property
Parking is limited
Merge lane from Williamsburg West lane is not utilized. Choke point where 2 lanes go to 1 - needs to be yield sign
Merge lane going from 199 at Longhill not used
Stormwater management as a part of the roadway improvements
Cohesive system that incorporates public transit
Safe and efficient transit stops/operation
Active multi-modal transportation
Pedestrian and bike use
Increase vehicle capacity
Improve flow
Ped/bike access
Address the traffic congestion at the appropriate locations (intersection on segment of Longhill between Olde Towne and Route 199).
Maintain the character "feel" of the corridor
The section of the roadway before and after the high school
Safety
Come up with a solution we are proud of
Ironbound Road by VDOT
Impact to property associated with Wellspring UMC, as a result of pro widening
Environmental considerations
Develop a plan/implement a plan or project/improvement consistent with goals, objectives of the corridor community
Intersection at Longhill Gate and Warhill Trail - signal some type of traffic control

16. Are there currently any proposed or planned development activities along the corridor that we should be taking into account as part of the corridor study?

If yes, please provide any details (e.g., project location, new, expansion of existing, or redevelopment opportunity, size of development, type of development)
Phase I expansion
Double the footprint they have within 10 years…within horizon year
Drive access - stalled out now until info from our study is complete
To be located across from driveway across the street
Expansion to King of Glory church
Potential extension of large diameter water from 199 to tank behind Seasons Trace…not currently planned
Admin site at front of Ford's Colony
Residential growth - 34B off Ford Colony Drive - 24-30 condos; condo/hotel adjacent to driving range at C.C.; less than 50 similar to timeshare
Real Tec proffers triggered by TIA - Ford Colony/Longhill - right turn lane due to speeding thru lane
5 year plan
Special use permit - 125 students at or close to limit - looking to expand within 5-10 years if not - go elsewhere
Preliminary concepts for expanding
Special use permit - limited to 125 students
Corridor study schedule
7-11 turn improvements from VDOT
No development planned for Williamsburg West
Excessive, aggressive driving
Not good VDOT signage
Merge lane not well utilized
4:30-5:30 PM worst time of day
Ford's Colony - 15 minutes just to get to a gate
Right turn out of Williamsburg West - cars afraid to use merge lane. Speed of thru traffic an issue.
Signage at signal lacking for 2 land/1 lane drop near 199. Outside lane treats it as their own
Coming from Wal-Mart/Lowes to Williamsburg West - people not using merge lane. This is signed/marked properly but not used.
Arrows for lane drop too late at Regency Apartments
Lack of sufficient stormwater management facilities along the corridor
There are some project potentially down street from the corridor - Powhatan Creek
Drainage ditches that are eroding along the corridor
Addressing quality and quantity stormwater issues
Windsor Forest - issues near Longhill Gate
Ford's Colony - Stormwater techniques - depressed
Season's Trace - median vs. raised landscaped median
Para transit - scheduled 24 hour advanced pickup/drop off - on demand
Accessibility between destinations/attractions
2015 WSC building - master plan build out
Community gym/pool
Potential connection between Lafayette High school and Season's Trace. Need to get plans/ideas about this connection from VDOT.
Another 600-700 at build out. Currently 2,200. Take this into account as a part of future traffic volume projections.
No plans for expansion
King of Glory church expansion
New access driveway
New Zion Church/Western portion of the corridor
Longhill/Warhill





Ever stuck in Longhill Road traffic?

Wish you could safely walk or bike to Warhill Sports Complex?

A study of the Longhill Road Corridor is underway to look at these issues and many more. Get informed about the study, give your input, and create a vision for the corridor's future.

Thursday, Oct. 3
7-9 p.m.
James City County Recreation Center

Rooms A and B, 5301 Longhill Rd.

Can't make the meeting?

Learn more about the study and give input online at **longhillroadcorridorstudy.com.**

James City County VIRGINIA Jamestown 1607





Longhill Road Corridor Study
Project Symposium Questionnaire

1) Which of the following best describes your relationship to the corridor: (check all that apply)
   - Permanent Resident
   - Business owner/employee
   - Commuter
   - Employee in the City/County
   - Other _____

2) What is your primary mode of travel when using the corridor?
   - Auto
   - Bus
   - Bicycle
   - Walk
   - Other _____

3) At which of the following times of the day do you most often travel on any segment of the corridor?
   - Morning rush hour (6-9am) on a weekday (Mon-Fri)
   - Evening rush hour (4-6pm) on a weekday (Mon-Fri)
   - Both the morning and evening rush hours on a weekday (Mon-Fri)
   - During the middle of the day (9am-4pm) on a weekday (Mon-Fri)
   - Other times (6pm-6am) on a weekday (Mon-Fri)
   - On the weekend (Sat-Sun)

4) How would you rate the following transportation issues along the corridor?

	Excellent	Good	Fair	Poor
Condition of Road	☐	☐	☐	☐
Traffic Flow	☐	☐	☐	☐
Traffic Safety	☐	☐	☐	☐
Attractiveness of Road	☐	☐	☐	☐
Pedestrian Accommodations	☐	☐	☐	☐
Bicycle Accommodations	☐	☐	☐	☐
Signal System (traffic signals)	☐	☐	☐	☐

5) What are the corridor's greatest assets that you feel should be protected?

VDOT Virginia Department of Transportation

Longhill Road Corridor Study
Project Symposium Questionnaire

6) What are your greatest concerns along the corridor?

7) How important are the following improvements?

	Top Priority	Somewhat Important	Not Important
Increase roadway capacity (e.g., widen to 4-lanes)	☐	☐	☐
Access management	☐	☐	☐
Safety	☐	☐	☐
Raised landscaped median (curb and gutter)	☐	☐	☐
Depressed median (shoulder and ditch)	☐	☐	☐
Sidewalks/Multi-Use paths	☐	☐	☐
Crosswalks/pedestrian accommodations at intersections	☐	☐	☐
Traffic calming/Adherence to posted speed limit	☐	☐	☐
Truck/Heavy vehicle safety improvements	☐	☐	☐
Bike lanes	☐	☐	☐
Improve bus/public transit stops	☐	☐	☐
Improve storm drainage facilities	☐	☐	☐
Additional parks & recreation facilities	☐	☐	☐
Walkable neighborhoods and commercial centers	☐	☐	☐
Other _____	☐	☐	☐

8) What is the most important element of this project to you?

9) If you were King or Queen for the day, what is the first thing you might change about the corridor?



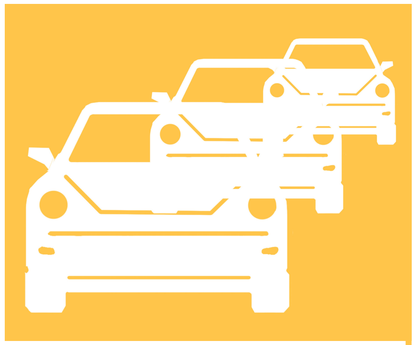
bike & ped



environment

safety





traffic

development trends





neighborhood

bike & ped



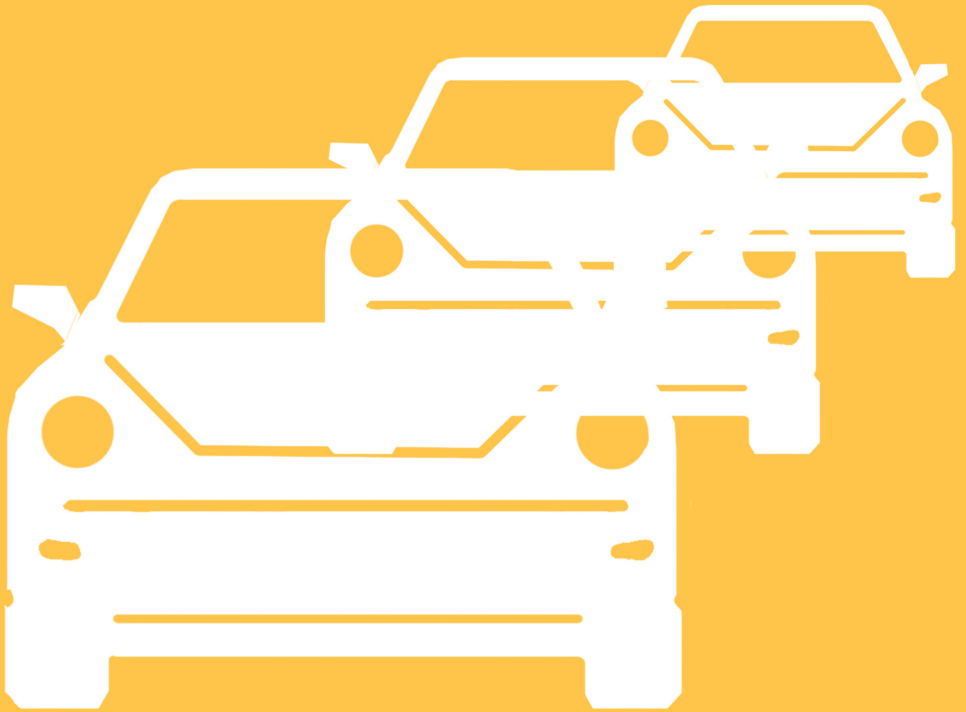
environment



safety



traffic



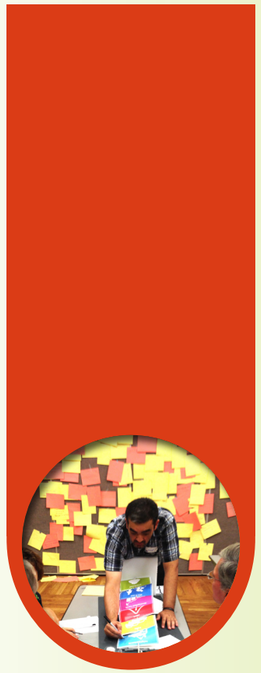
development trends

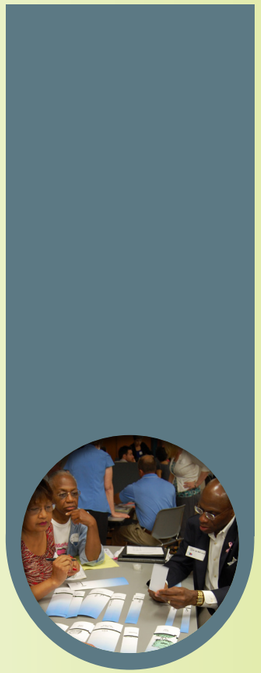


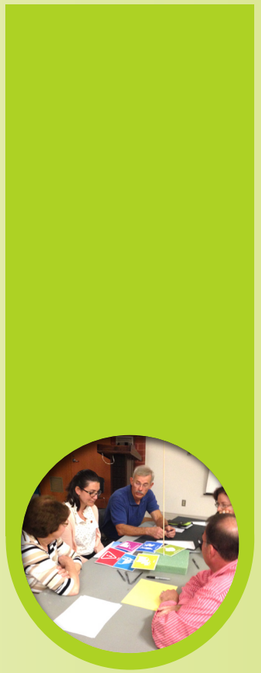
neighborhood



Making a Difference







"Find ways to improve traffic flow during rush hours."

" How much more development is planned for WISC and how will it increase the difficulty crossing over to WISC and getting in and out of Longhill Gate and Mallard Hill?"

"We would like to see that neighborhoods maintain their character by providing pleasing landscapes at the entry points."

"Use the roadway within War Hill District Park to allow access to Centerville Road. Open exit from 1995 that exists to Old Towne Road and prevent eastbound turns from 7-11 onto Longhill Rd."

"The traffic increase, especially with high school children, between 7am - 8an and 2pm - 3pm is a disaster."

www.LonghillRoadCorridorStudy.com

LRCS

Longhill Rd

corridor study

symposium summary

october - 2013

james city county, virginia

Symposium at a Glance

The Longhill Road Corridor Symposium, held at the James City County Recreation Center on October 3rd from 7-9 pm, served to inform the public and solicit their input for the corridor planning process. It was an action-packed event that adopted the popular "TED Talks" format with brief, direct, and on point presentations on each of the six planning themes: Safety, Traffic, Bike & Ped, Neighborhoods, the Environment, and Development Trends. Over 75 stakeholders from throughout the study area engaged in a series of thought provoking individual and group exercises designed to unleash the participant's top priorities, concerns, and preferences moving forward. This brochure represents a summary of the wealth of information generated during the symposium that will presented to the Project Advisory Committee (PAC) prior to the finalization of guiding principles.

Symposium Activities

- Planning Themes Presentations
- Activity A: Planning Questionnaire
- Activity B: Thought Wall
- Activity C: Priority Decision Tree
- Activity D: Build-A-Street
- Closing Remarks

activity summaries

Planning Questionnaire

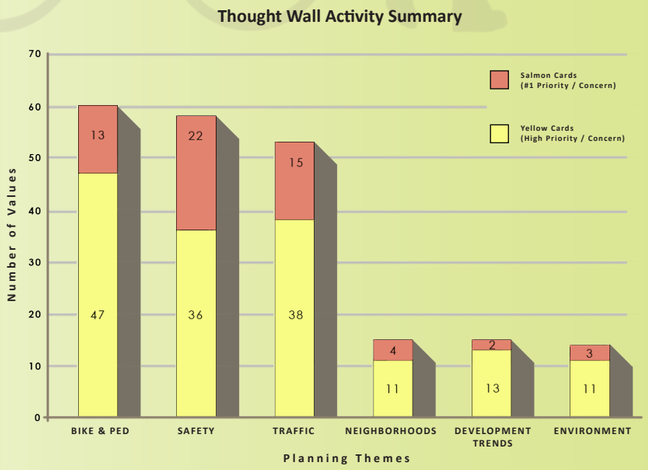
After they were seated at their tables, participants filled out a brief questionnaire outlining their greatest hopes and fears for the corridor. They voted upon, and expressed comments about, corridor features that should be protected, as well as some potential solutions to improve the corridor's functionality. These "Planning Postcards" provided insight into their motivating factors for staying connected to date and their motivation for continued investment in this project. This questionnaire and the results will be available on the project website at www.LonghillRoadCorridorStudy.com.

Thought Wall

After listening to the Planning Themes presentations on the six planning themes, participants were given four colored sheets and asked to identify their top priorities or concerns and share them on the "Thought Wall." Individually, they expressed these priorities/ concerns in bold print on their sheets of paper (salmon color for their #1 priority/concern and yellow color for a high priority/concern) and placed each sheet under the most appropriate planning themes on the designated "Thought Wall." The results were then stacked from the floor-up resulting in a large scale histogram representing the frequency of priority votes offered by individual participants. Based on a weighted scoring system, the top three planning themes were Bike & Ped, Safety, and Traffic. Safety had the most #1 priority/concern votes, followed closely by Traffic and Bike & Ped.

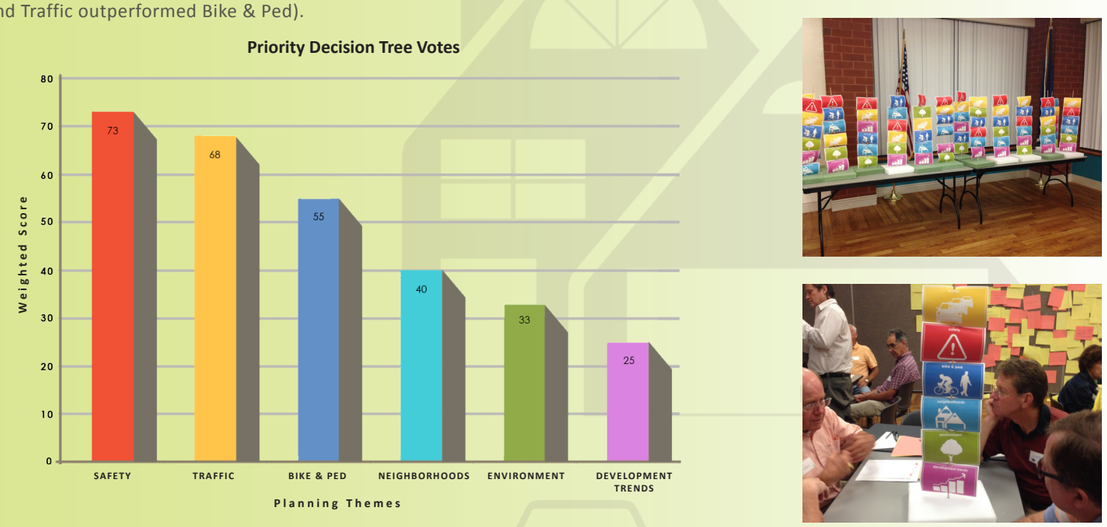






Priority Decision Tree

This exercise represented a group effort to examine the same planning themes, priorities and concerns as prioritized in the previous "Thought Wall" exercise. The final product was called a "priority decision tree" and consisted of a vertical stem and base with the six planning theme placards ordered from top to bottom in order of importance. Tables were directed to write on the placards the topics within those planning themes they believed were of the greatest priority or concern to their group. This exercise resulted in a robust discussion where the tables examined trade-offs and negotiated their perspectives as individuals within the group. Again, based on a weighted scoring system, the top three planning themes were Safety, Traffic, and Bike & Ped (although this time, Safety and Traffic outperformed Bike & Ped).



Build-A-Street

This exercise represented a group effort to identify an ideal cross-section for the corridor. They were presented with a toolbox of common corridor elements such as primary travel lanes, medians, sidewalks, street trees, bike lanes, multi-use paths, etc. and worked together to talk through and negotiate the trade-offs between right-of-way (ROW) and desired cross section features.

Table	# of Lanes	Left Turn Lane(s)	Median	Bike Lane(s)	Street Tree(s)	Planting Strip(s)	Shoulder	Multiuse Path(s)	Sidewalk(s)	Wild Card
1	4	X - 2	X - depressed with trees	-	X - 1	X - 1	-	X - 1	X - 1	-
2	4	X - 2way	-	X - 2	-	-	X - 2	X - 1	-	-
3	4	X - 2way where necessary	X - 1 where necessary	-	-	X - 1	X - 1	X - 1	-	-
4	4	X - 2way	-	X - 2 wide outside lanes	-	-	X - 2	-	-	-
5	4	X - 1 where necessary	-	-	-	-	X - 2 with street lights at intersections	X - 1	-	-
6	2	-	-	X - 1	X - 2	X - 1	-	X - 1	-	Stoplight at WISC/ Longhill Gate x-section & benches along path
7	2	X - 2way	-	X - 1	-	-	X - 2	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
8	2	X - 1 where necessary	X - planted median with curb & gutter	X - 2	X - 2	-	-	X - 1	-	Bus stop pull-offs with shelters
9	2	X - 1 where necessary	X - 1 where necessary	X - 1	X - 2 without curb & gutter	-	X - 1	X - 1	-	-
10	2	X - 2way	-	X - 2	X - 2	-	X - 2	-	X - 1	-
11	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-
12	2	X - 2way	-	-	X - 2	-	-	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
13 - 199 to Olde Towne	4	-	X - depressed	-	-	X - 1	-	X - 1	-	-
13 - Olde Towne to Centerville	2	X - 1 where necessary	X - 1 where necessary	X - 1	-	-	X - 2	-	X - 1	-
14 - 199 to Olde Towne	4	X - 1 where necessary	X - 1 where necessary	-	-	X - 1	-	X - 1	-	-
14 - Olde Towne to Centerville	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-

Build-A-Street Activity Summary









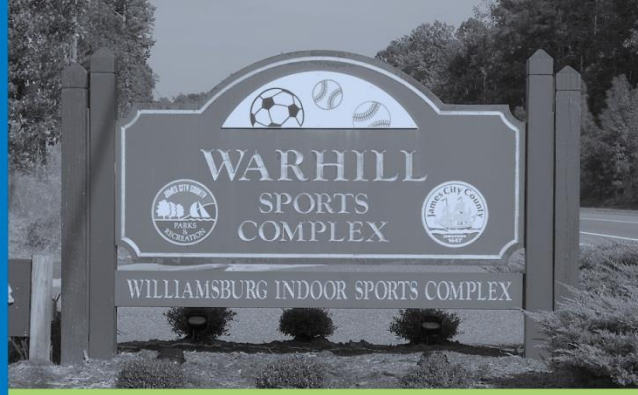


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

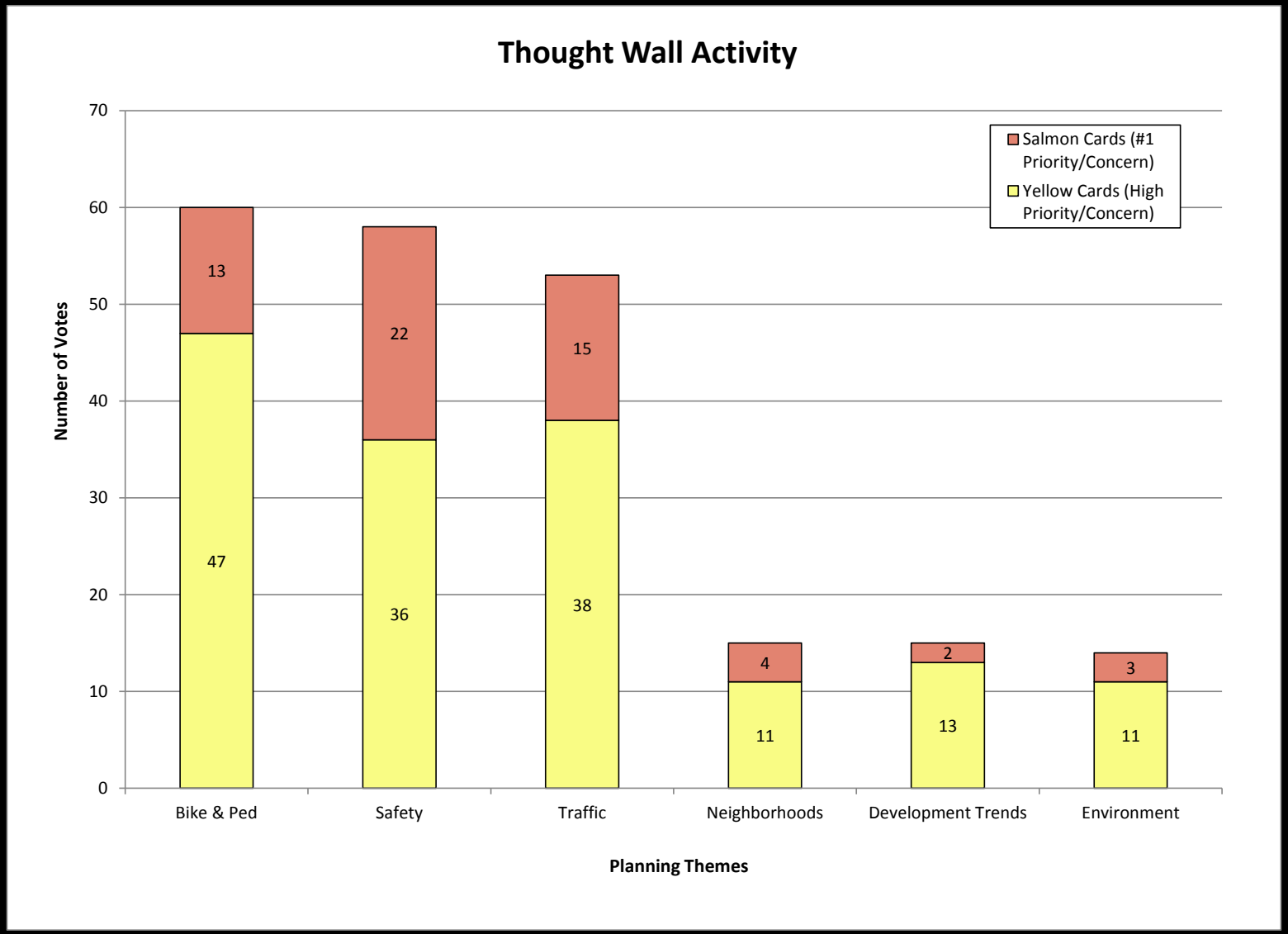
A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Project Symposium

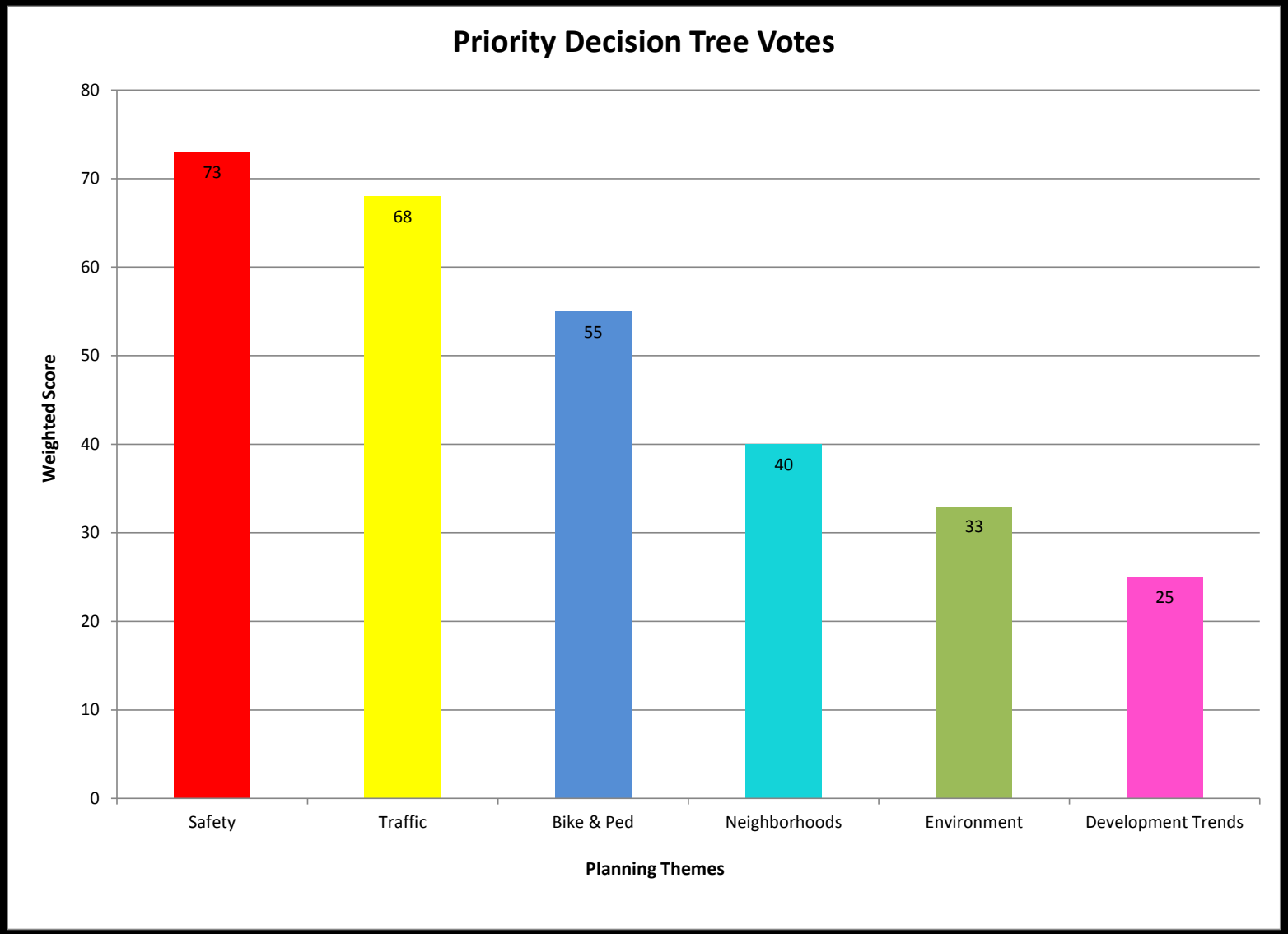
- October 3, 2013
- 70+ Attendees
- Thought Wall Exercise and Comments
- Priority Decision Tree Exercise
- Build-A-Street Exercise



Thought Wall Results



Priority Decision Tree Votes



Priority Decision Tree – Thought Wall Themes

- Safety
- Traffic Operations/Mobility
- Bike and Pedestrian Accommodations
- Environment/Neighborhoods



Build-A-Street

Table	# of Lanes	Left Turn Lane(s)	Median	Bike Lane(s)	Street Tree(s)	Planting Strip(s)	Shoulder	Multiuse Path(s)	Sidewalk(s)	Wild Card
1	4	X - 2	X - depressed with trees	-	X - 1	X - 1	-	X - 1	X - 1	-
2	4	X - 2way	-	X - 2	-	-	X - 2	X - 1	-	-
3	4	X - 2way where necessary	X - 1 where necessary	-	-	X - 1	X - 1	X - 1	-	-
4	4	X - 2way	-	X - 2 wide outside lanes	-	-	X - 2	-	-	-
5	4	X - 1 where necessary	-	-	-	-	X - 2 with street lights at intersections	X - 1	-	-
6	2	-	-	X - 1	X - 2	X - 1	-	X - 1	-	Stoplight at WISC/ Longhill Gate x-section & benches along path
7	2	X - 2way	-	X - 1	-	-	X - 2	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
8	2	X - 1 where necessary	X - planted median with curb & gutter	X - 2	X - 2	-	-	X - 1	-	Bus stop pull-offs with shelters
9	2	X - 1 where necessary	X - 1 where necessary	X - 1	X - 2 without curb & gutter	-	X - 1	X - 1	-	-
10	2	X - 2way	-	X - 2	X - 2	-	X - 2	-	X - 1	-
11	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-
12	2	X - 2way	-	-	X - 2	-	-	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
13 - 199 to Olde Towne	4	-	X - depressed	-	-	X - 1	-	X - 1	-	-
13 - Olde Towne to Centerville	2	X - 1 where necessary	X - 1 where necessary	X - 1	-	-	X - 2	-	X - 1	-
14 - 199 to Olde Towne	4	X - 1 where necessary	X - 1 where necessary	-	-	X - 1	-	X - 1	-	-
14 - Olde Towne to Centerville	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-

Guiding Principles

Longhill Road is an important corridor that connects people with significant places in our community; therefore, design improvements to the corridor should:

- Respect the context of the area,
- Enhance safety for all users,
- Respond to existing and projected traffic volumes,
- Be visually appealing, and
- Minimize impacts the natural and built environments.

The resulting improvements will integrate with existing neighborhoods, offer consistence with the comprehensive plan, and promote quality growth and economic vitality.

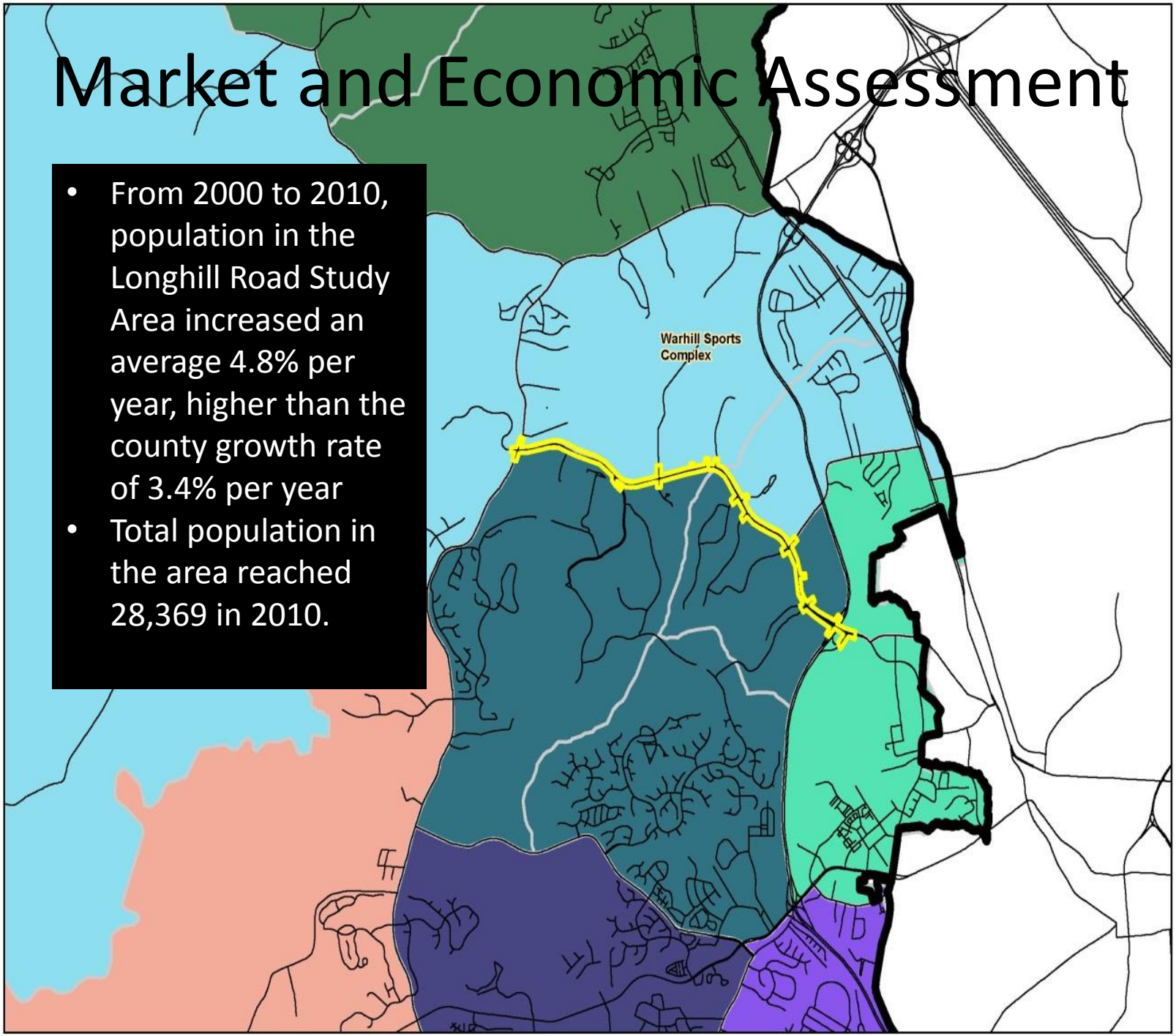
Build-A-Street Highlights

- **Laneage – Split (2 lanes and 4 lanes)**
  - **2 tables made the distinction:**
    - **199 to Olde Towne Road – 4 lanes**
    - **Olde Towne Road to Centerville Road – 2 lanes**
- **Left-turn Lanes: Two-Way Left-Turn Lanes**
- **Multi-Use Path: 12 out of 14**
- **Wildcard: bus stop pull-offs**



Market and Economic Assessment

- From 2000 to 2010, population in the Longhill Road Study Area increased an average 4.8% per year, higher than the county growth rate of 3.4% per year
- Total population in the area reached 28,369 in 2010.



Longhill Road Corridor Study

Census Boundaries

Project Study Area
County Boundary
Street Centerline
Block Group Boundary

CensusTract
51095080202
51095080205
51095080206
51095080301
51095080303
51095080304
51095080402

Feet
0 2,400 4,800

James City County Virginia Jamestown 1607

Kimley-Horn and Associates, Inc.

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

, James City County

Existing Traffic Volumes

Average daily traffic (ADT) volumes along the corridor today range from:

- **21,000 vehicles per day (vpd) - Route 199 to Lane Pl**
- **16,500 vpd - Williamsburg Plantation to Olde Towne Rd**
- **18,000 vpd - Glenburnie Rd to Buford Rd**
- **13,000 vpd - Lafayette High School to Warhill Trail**
- **8,700 vpd - west of Ford's Colony entrance**
- **9,600 vpd - Olde Towne Rd northeast of Longhill Rd**


LEFT TURN
YIELD
ON GREEN
1,200 ft.

Traffic Volume Projection Resources

- Hampton Roads Transportation Planning Organization
- Regional Travel Demand Model
  - 2034 Socio-Economic Data
  - 2034 Traffic Assignments
- Develop annualized growth rates
- Current zoning and allowable future development
- Existing business or institutions expansion
- Undeveloped properties
- Historical Traffic Volume Trends

Future Traffic Volumes

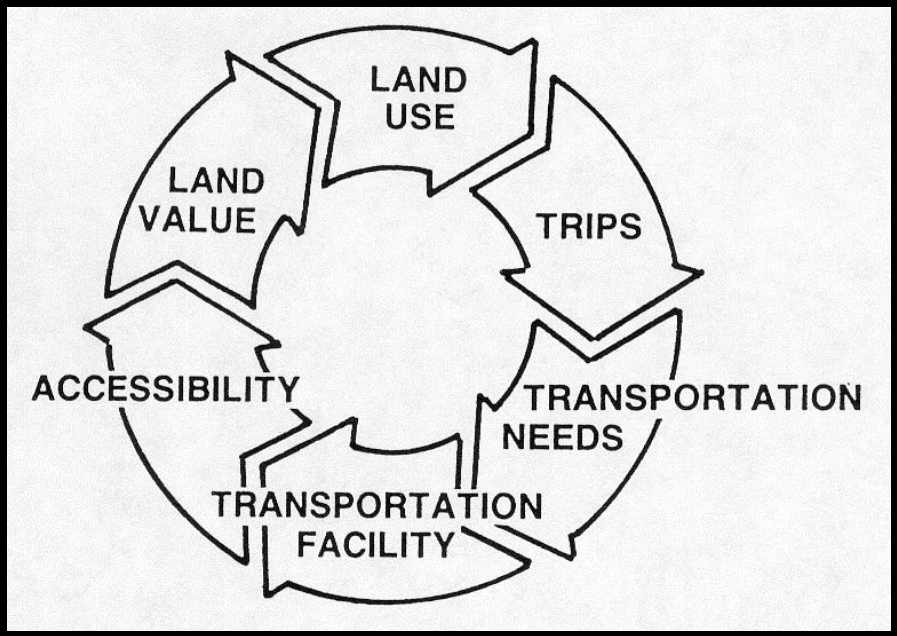
Average daily traffic (ADT) volumes along the corridor today range from:

- **26,300 vehicles per day (vpd) - Route 199 to Lane Place**
- **20,600 vpd - Williamsburg Plantation to Olde Towne Rd**
- **22,500 vpd - Glenburnie Rd to Buford Rd**
- **16,500 vpd - Lafayette High School to Warhill Trail**
- **13,500 vpd - west of Ford's Colony entrance**
- **12,300 vpd - Olde Towne Rd northeast of Longhill Rd**

Improving Traffic Safety & Operations

Avoid a Cycle of Functional Obsolescence…..



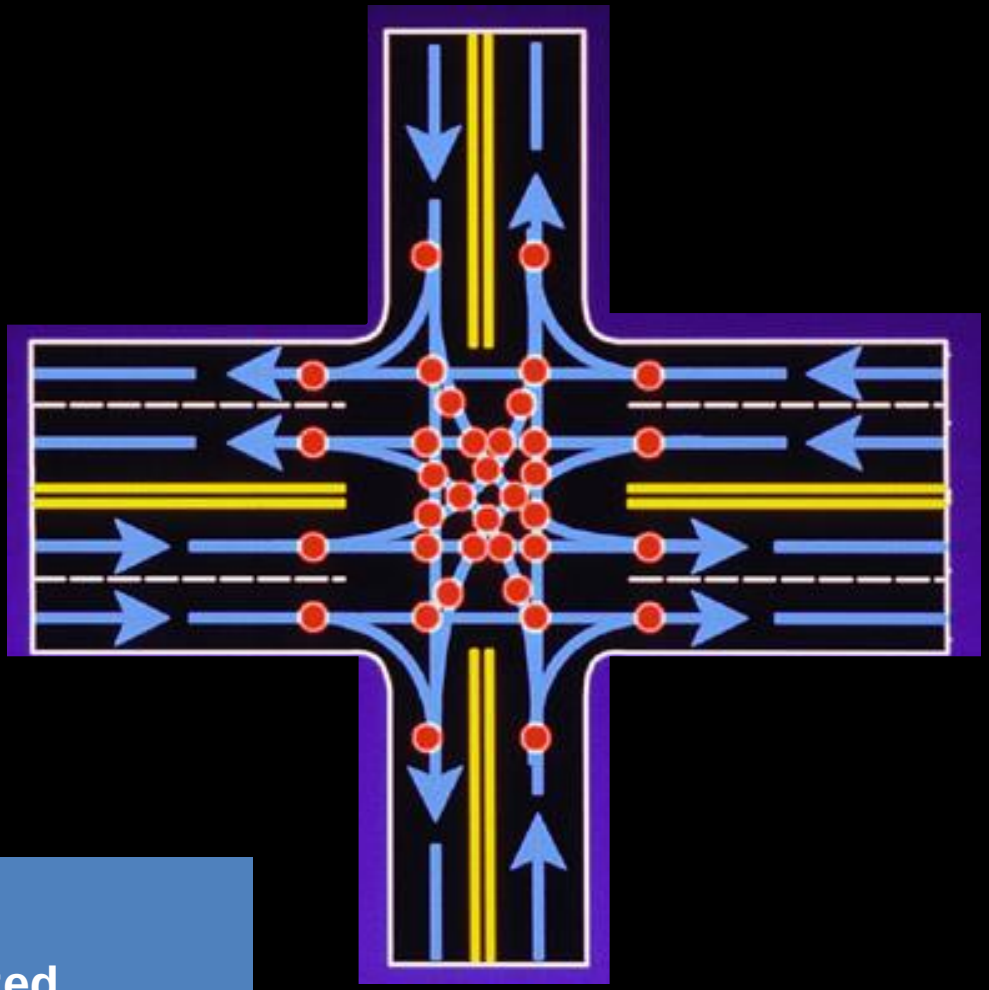


How Are Traffic Safety & Operations Often Improved?

Design and Regulation of the following:



Focus on Intersections



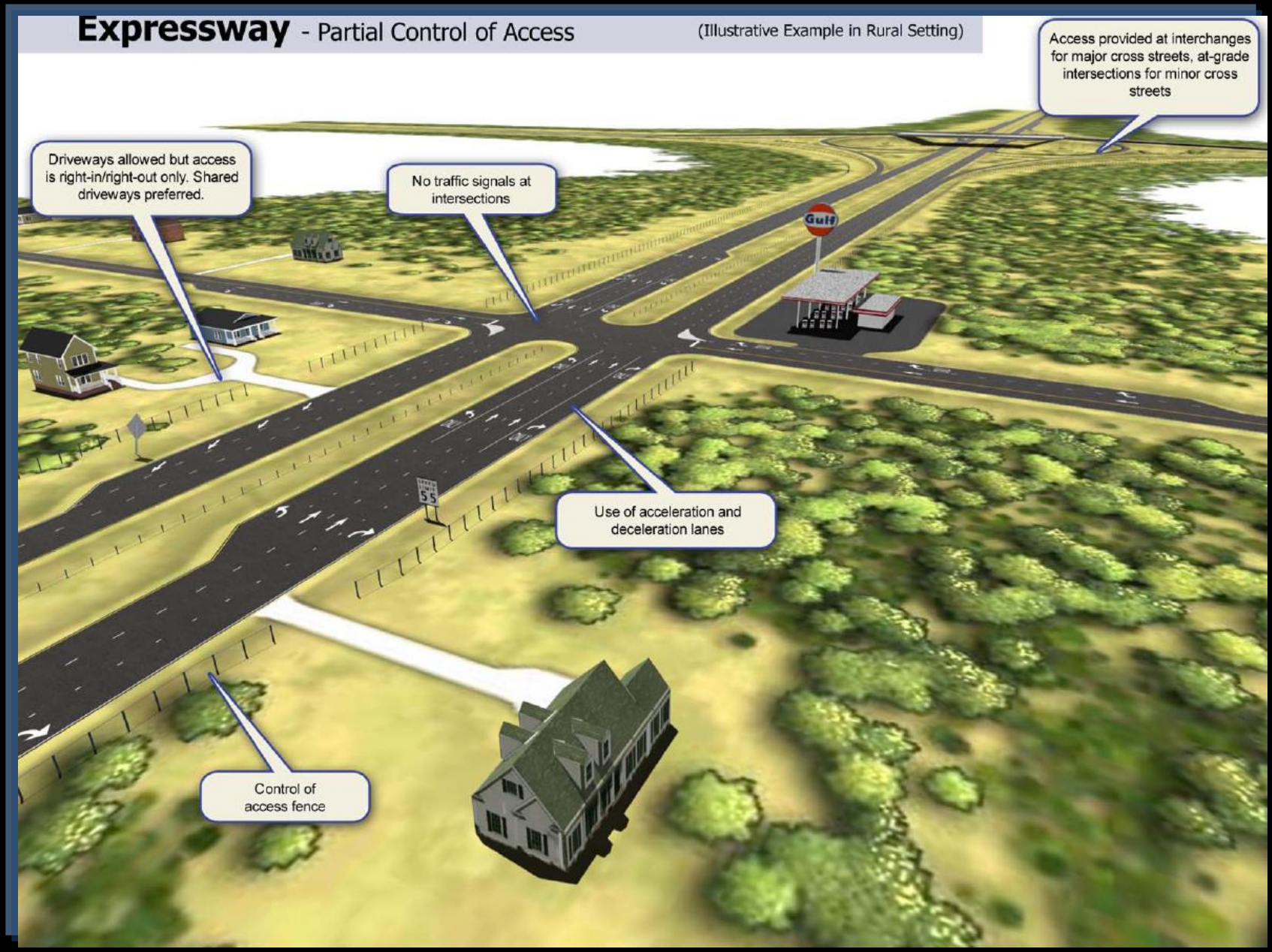
32 Conflicts

22 If Signalized

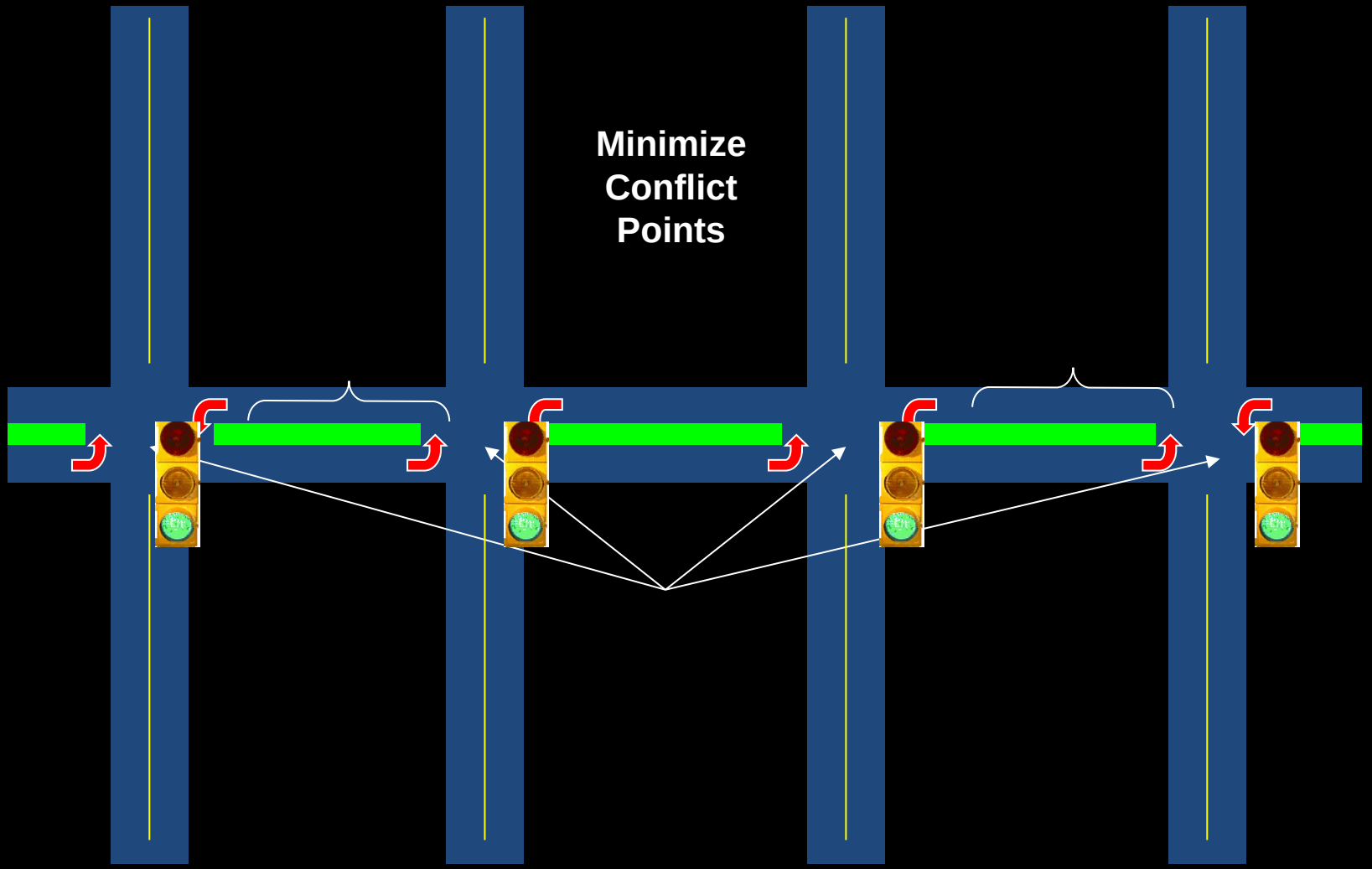
Thoroughfare – No Control



Partial Control



Median Breaks and Crossovers



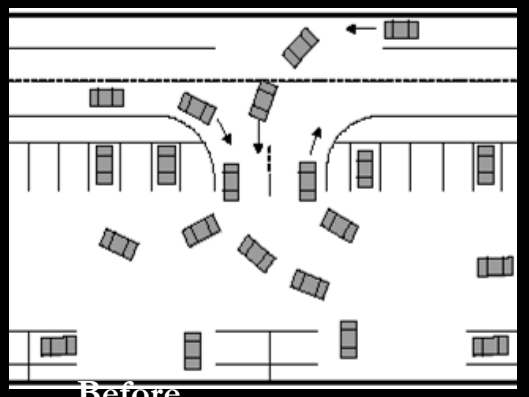
Tool Box
Traffic Signal Coordination

- Applies to more urban areas
- Potential to improve travel times & safety
- Synchronizes traffic signals to minimize 'through' traffic delay
- Accomplished by interconnecting signals into one system

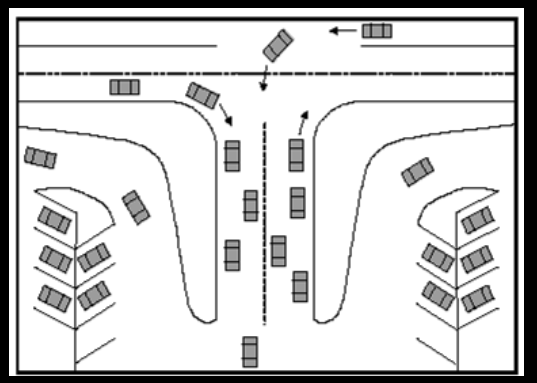


Tool Box
On-Site Circulation / Shared Access

- Pushing back 'throat' of driveway helps to avoid spillback
- Improves safety/efficiency of roadway:
  - -Concentrates slow moving vehicles in appropriate areas
  - -Provides for right-turn deceleration lanes
- Limits number of access points into development

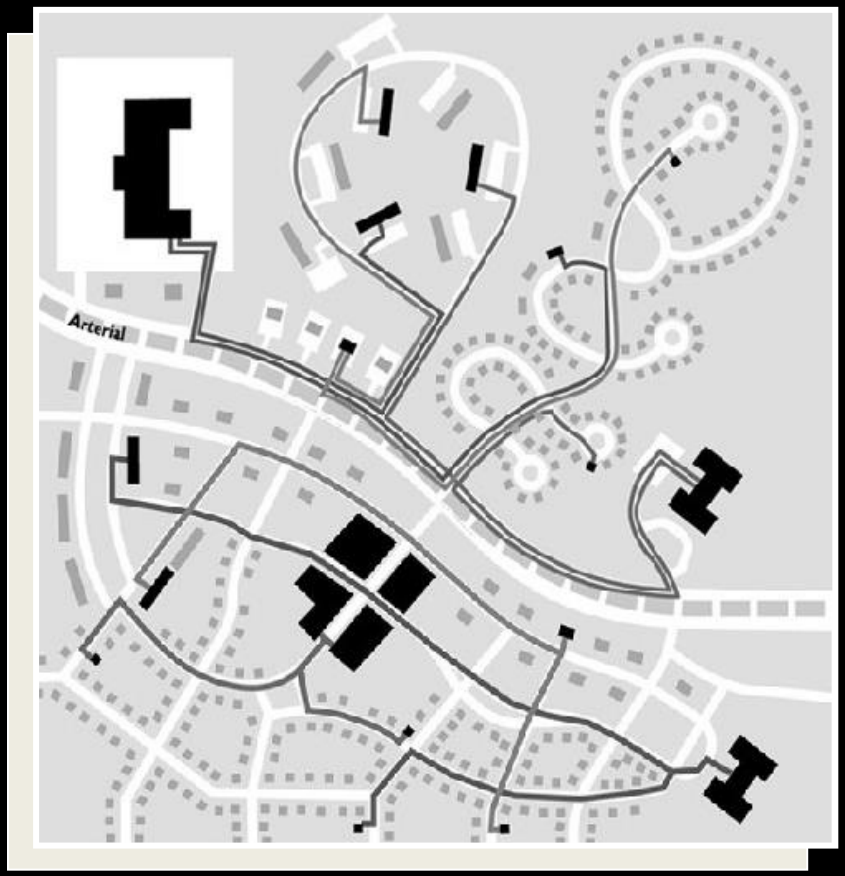


Before



After

Tool Box
Improve Collector Street Network



- Create a network of interconnected streets
- Provides an alternative for shorter trips
- Implemented by development community

Tool Box
Median and U-Turn treatments

- Reduces number of conflict points at intersections
- Decreases frequency of crashes
- Relatively Inexpensive
- Needs to accommodate u-turns for larger vehicles
- Needs to address potential driver confusion
- Reduces delay by as much as 25% for minor roadway
- Travel time may not increase

VPS

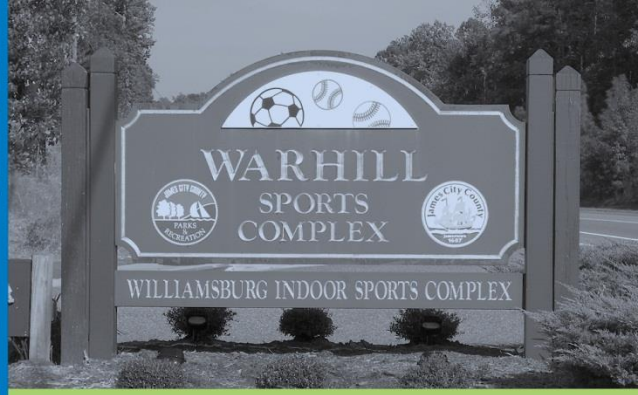


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Instructions



1

How familiar are you with corridor planning?

A I'm an expert and probably should be giving this presentation.

B I tried it once in college.

C I'm familiar with the concept but I can't say I've done it before.

D This is the first I've heard of it but it sounds exotic.

SAFETY

2 Cross Sections

A



B



C



D



3 Intersection Treatments

A



B



C



D



4 Signalized Intersections

A



B



C



D



5 Edge Treatments

A



B



C



D



6 Street Blades

A



B



C



D



7 Lighting

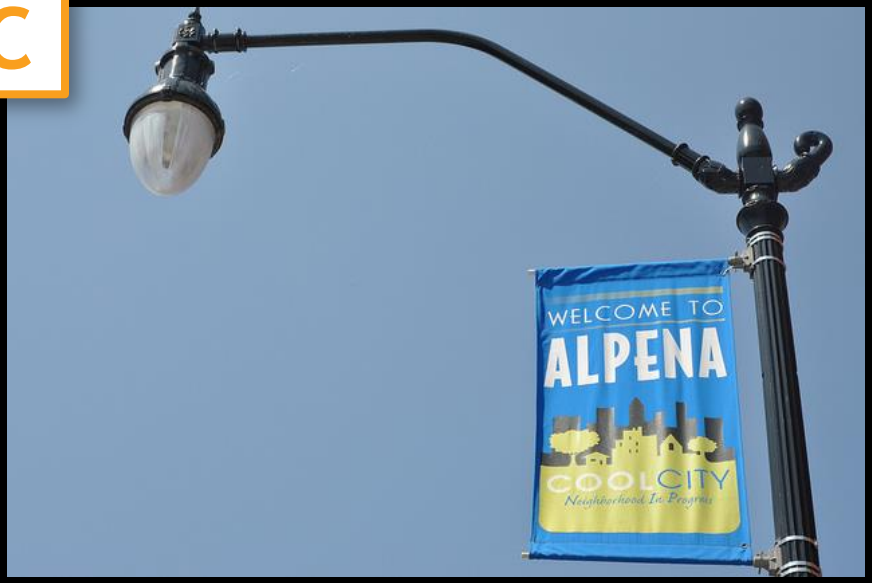
A



B



C



D



BICYCLE AND PEDESTRIAN

8 User Profile - Bicyclists

A



B



C



D



9 User Profile - Pedestrians

A



B



C



D



10 Bicycle Facilities

A



B



C



D



11 Pedestrian Facilities

A



B



C



D



12 Pedestrian Signage

A



B



C



D



13 Pedestrian Safety

A



B



C



D



14 Crosswalks

A



B



C



D



15 Bicyclists - Signage

A



B



C



D



AESTHETICS

16 Landscaping

A



B



C



D



17 Lighting

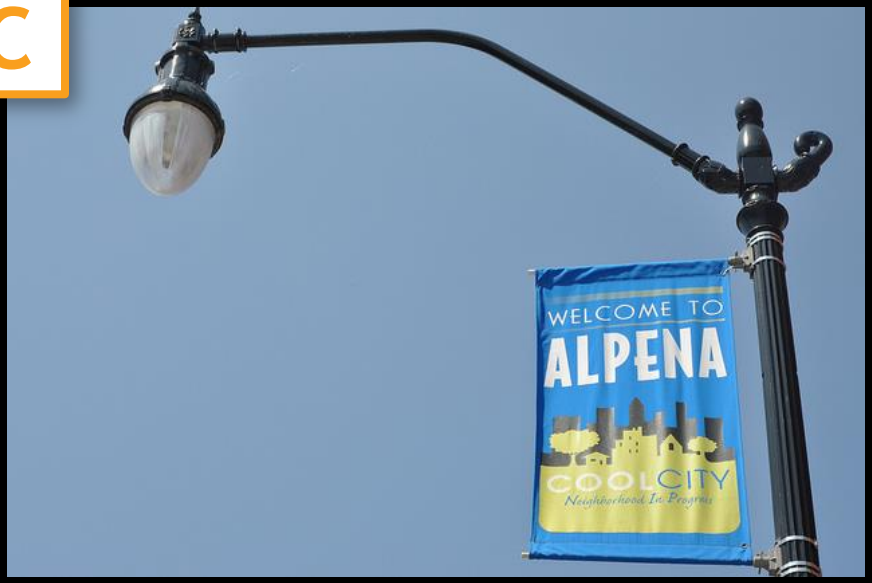
A



B



C



D



18 Intersections

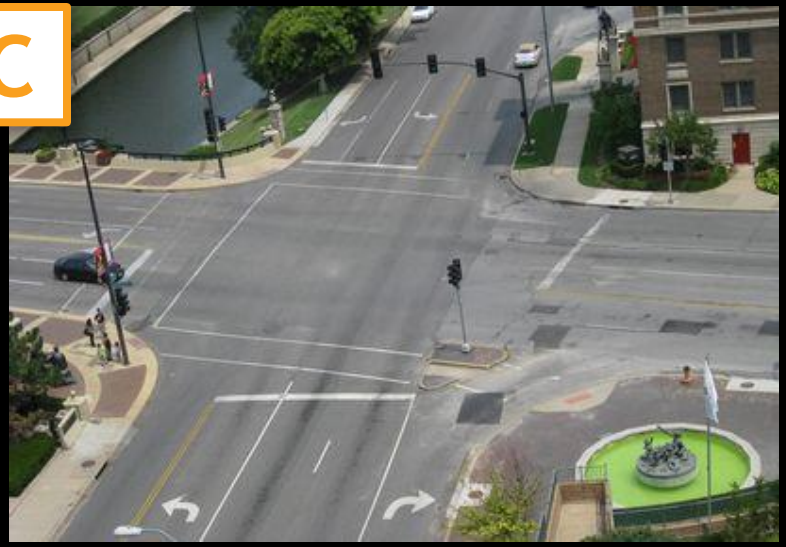
A



B



C



D



19 Street Blades

A



B



C



D



OPERATIONS

20 Cross Sections

A



B



C



D



21 Intersection Treatments

A



B



C



D




Questions?

Summary of Visual Preference Survey Responses

		A 143	B 160	C 287	D 291	Responses
1	Test Question	**2**	**2**	**20**	**16**	40
	Safety					
2	Cross Sections	**1**	**2**	**20**	**16**	39
3	Intersection Treatments	**16**	**6**	**31**	**1**	54
4	Signalized Intersections	**5**	**6**	**1**	**17**	29
5	Edge Treatments	**13**	**5**	**0**	**28**	46
6	Street Blades	**2**	**2**	**6**	**35**	45
7	Lighting	**20**	**13**	**3**	**3**	39
	Bicycle and Pedestrian					
8	User Profile - Bicyclists	**1**	**10**	**24**	**9**	44
9	User Profile - Pedestrians	**1**	**6**	**17**	**17**	41
10	Bicycle Facilities	**0**	**0**	**14**	**29**	43
11	Pedestrian Facilities	**10**	**2**	**30**	**0**	42
12	Pedestrian Signage	**3**	**10**	**28**	**4**	45
13	Pedestrian Safety	**11**	**2**	**6**	**15**	34
14	Crosswalks	**10**	**4**	**23**	**2**	39
15	Signage	**13**	**3**	**11**	**11**	38
	Aesthetics					
16	Landscaping	**9**	**23**	**3**	**5**	40
17	Lighting	**3**	**31**	**4**	**5**	43
18	Intersections	**1**	**0**	**2**	**45**	48
19	Street Blades	**2**	**12**	**24**	**17**	55
	Operations					
20	Cross Sections	**1**	**12**	**20**	**4**	37
21	Intersection Treatments	**19**	**9**	**0**	**12**	40

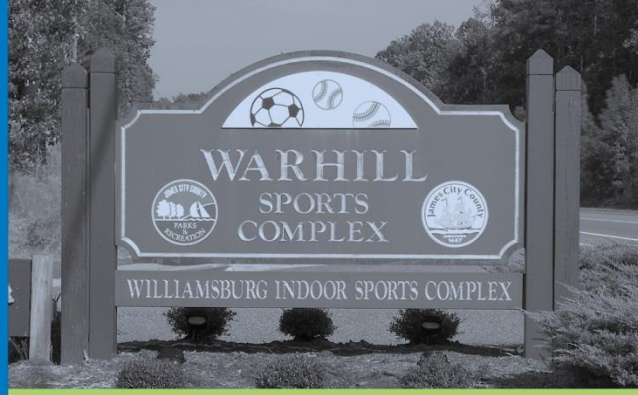


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Project History

- 2026 Comprehensive Plan had Longhill Road on the "watch list" based on projected volumes
- Comprehensive Plan Update effort proposed a comprehensive evaluation of the Corridor
  - Capacity, safety, and multi-modal (bike, ped, transit)
- Corridor Study makes it into the VDOT Six Year Improvement Program
- County hires consultant to conduct Comprehensive Study of Longhill Road Corridor

Project History

- Continued evaluation/implementation of operational and safety improvements
  - Possible traffic signal/roundabout at the Warhill Trail intersection
  - Possible traffic signal at the entrance to Season's Trace or entrance to LHS
  - Widening from Route 199 to Olde Towne Road
  - Widening north/west of Olde Towne Road
  - Safety improvements at the Olde Towne Road intersection
  - Signal timing modifications to help with traffic progression between Olde Towne Road and Route 199

Study Area

- Longhill Road Corridor
- Approximately 3.0 miles
  - Route 199 interchange in the east to the intersection of Centerville Road in the west
- 14 Study Area Intersections
  - 5 Signalized
  - 9 Unsignalized
- Powhatan Creek Natural Area
- Powhatan Creek Watershed Plan

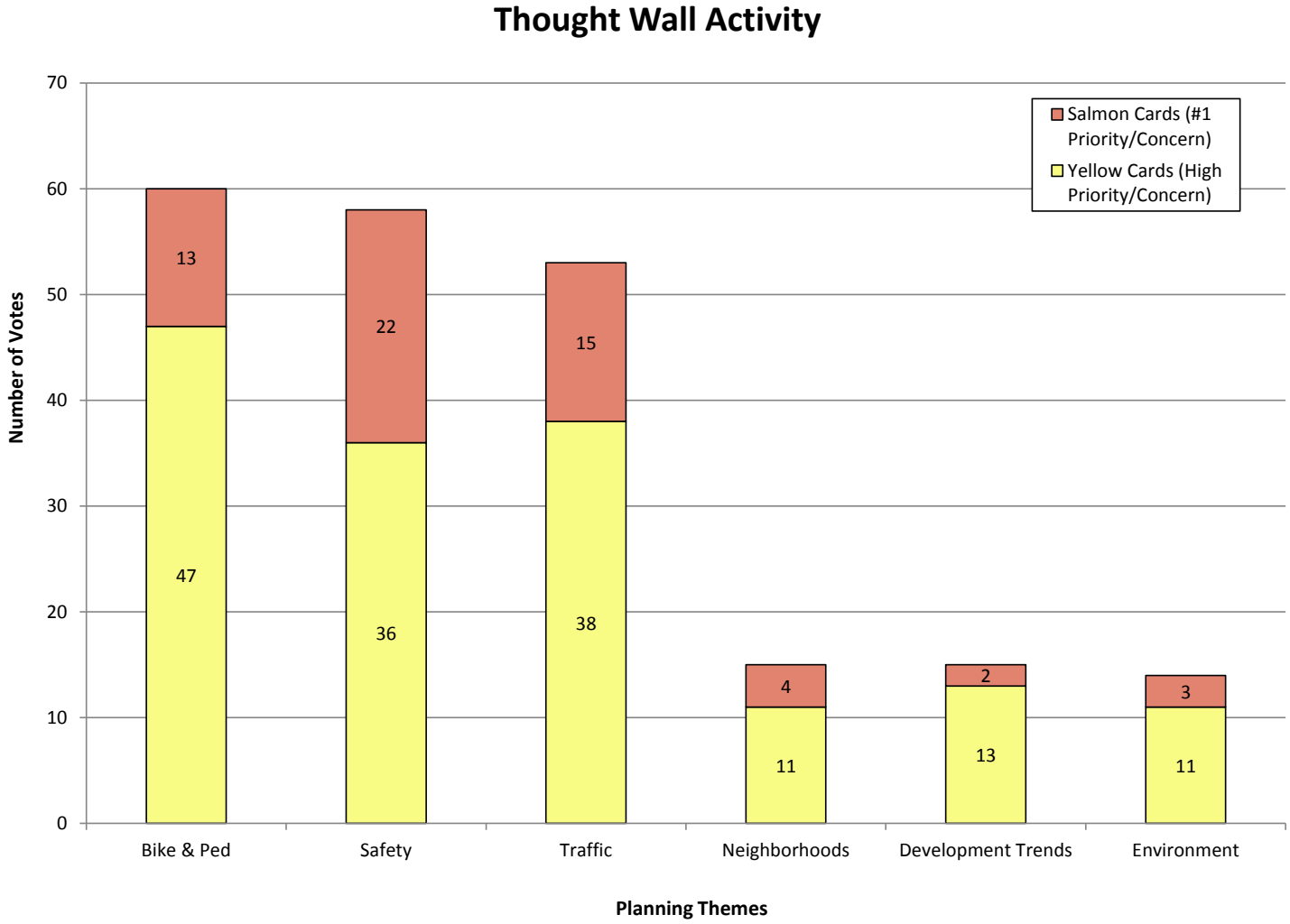

Longhill Rd
612
Freedom Park
New Zion Baptist Church
War Hill Inn Bed & Breakfast
Olde Towne Shopping Center
Ford's Colony Country Club Inc The Dining Room
Marriott's Manor Club at Ford's Colony
Fords Colony Country Club
Humelsine Pkwy
199

Project Symposium

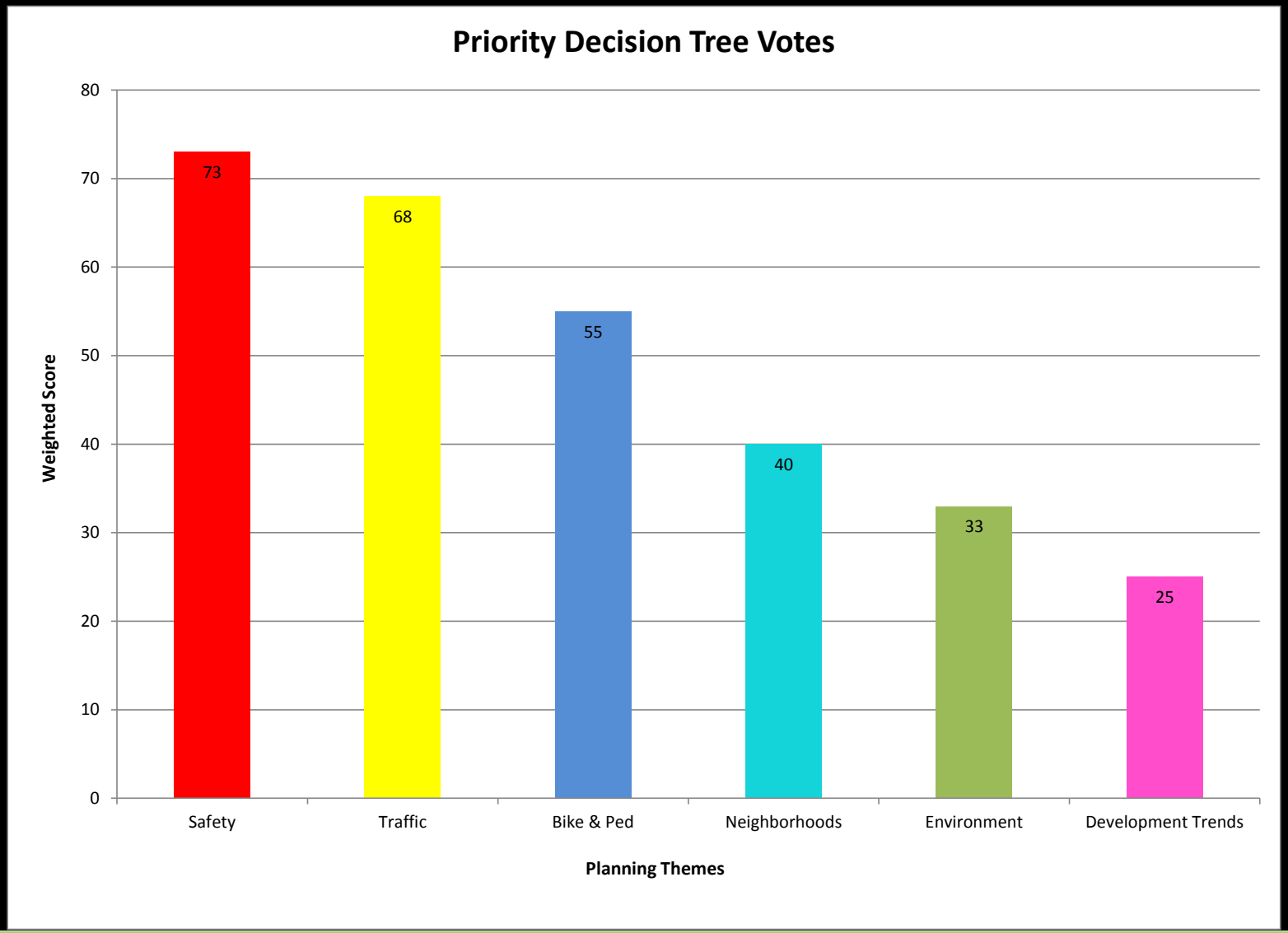
- October 3, 2013
- 70+ Attendees
- Thought Wall Exercise and Comments
- Priority Decision Tree Exercise
- Build-A-Street Exercise



Thought Wall Results



Priority Decision Tree Votes



Priority Decision Tree – Thought Wall Themes

- Safety
- Traffic Operations/Mobility
- Bike and Pedestrian Accommodations
- Environment/Neighborhoods



Guiding Principles

Longhill Road is an important corridor that connects people with significant places in our community; therefore, design improvements to the corridor should:

- Respect the context of the area,
- Enhance safety for all users,
- Respond to existing and projected traffic volumes,
- Be visually appealing, and
- Minimize impacts the natural and built environments.

The resulting improvements will integrate with existing neighborhoods, offer consistence with the comprehensive plan, and promote quality growth and economic vitality.

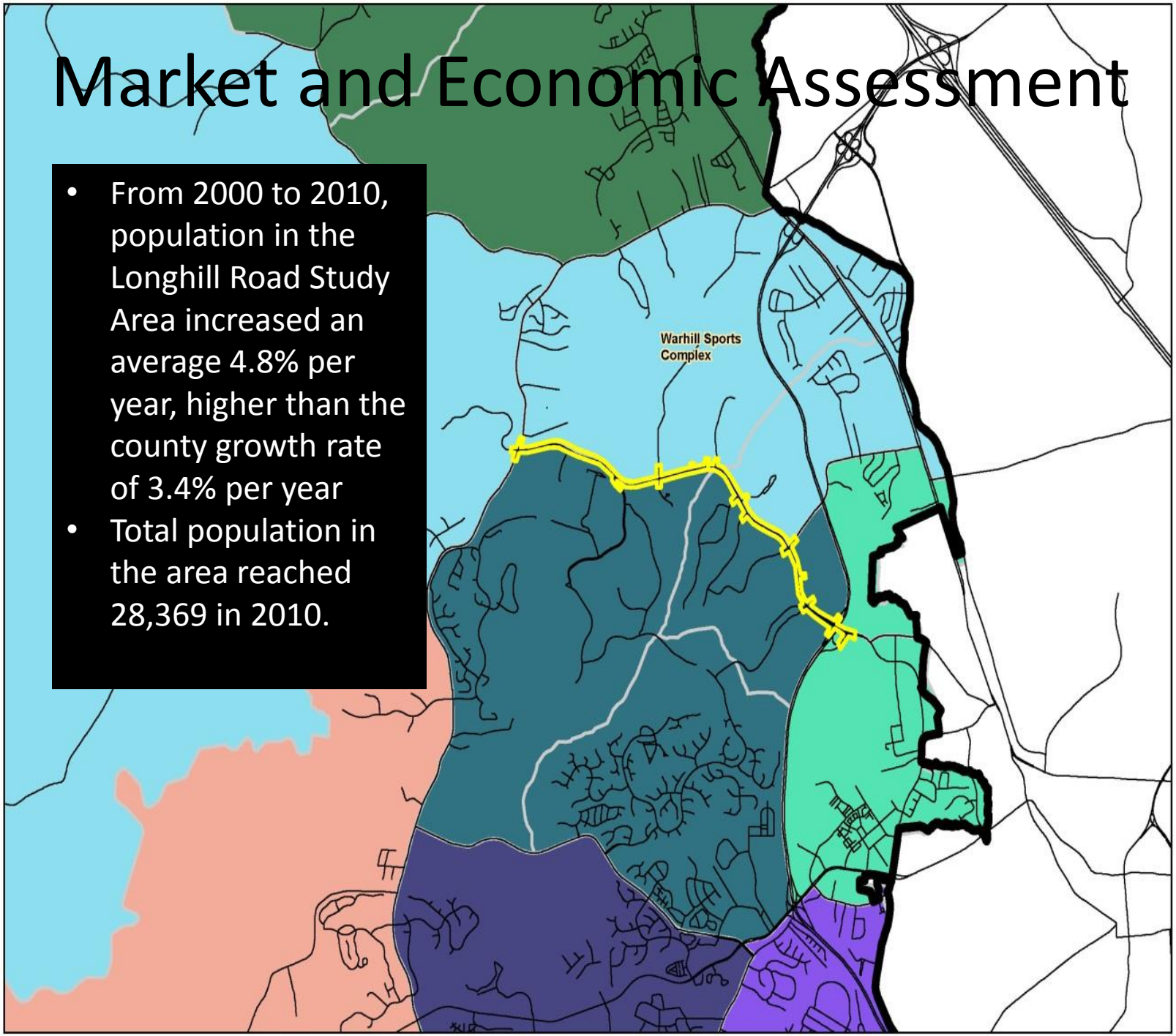
Build-A-Street Highlights

- **Laneage – Split (2 lanes and 4 lanes)**
  - **2 tables made the distinction:**
    - **199 to Olde Towne Road – 4 lanes**
    - **Olde Towne Road to Centerville Road – 2 lanes**
- **Left-turn Lanes: Two-Way Left-Turn Lanes**
- **Multi-Use Path: 12 out of 14**
- **Wildcard: bus stop pull-offs**



Market and Economic Assessment

- From 2000 to 2010, population in the Longhill Road Study Area increased an average 4.8% per year, higher than the county growth rate of 3.4% per year
- Total population in the area reached 28,369 in 2010.



Longhill Road Corridor Study

Census Boundaries

Project Study Area
County Boundary
Street Centerline
Block Group Boundary

CensusTract
51095080202
51095080205
51095080206
51095080301
51095080303
51095080304
51095080402

Feet
0 2,400 4,800

James City County Virginia Jamestown 1607

Kimley-Horn and Associates, Inc.

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

, James City County

Existing Traffic Volumes

Average daily traffic (ADT) volumes along the corridor today range from:

- **21,000 vehicles per day (vpd) - Route 199 to Lane Pl**
- **16,500 vpd - Williamsburg Plantation to Olde Towne Rd**
- **18,000 vpd - Glenburnie Rd to Buford Rd**
- **13,000 vpd - Lafayette High School to Warhill Trail**
- **8,700 vpd - west of Ford's Colony entrance**
- **9,600 vpd - Olde Towne Rd northeast of Longhill Rd**

Future Traffic Volumes

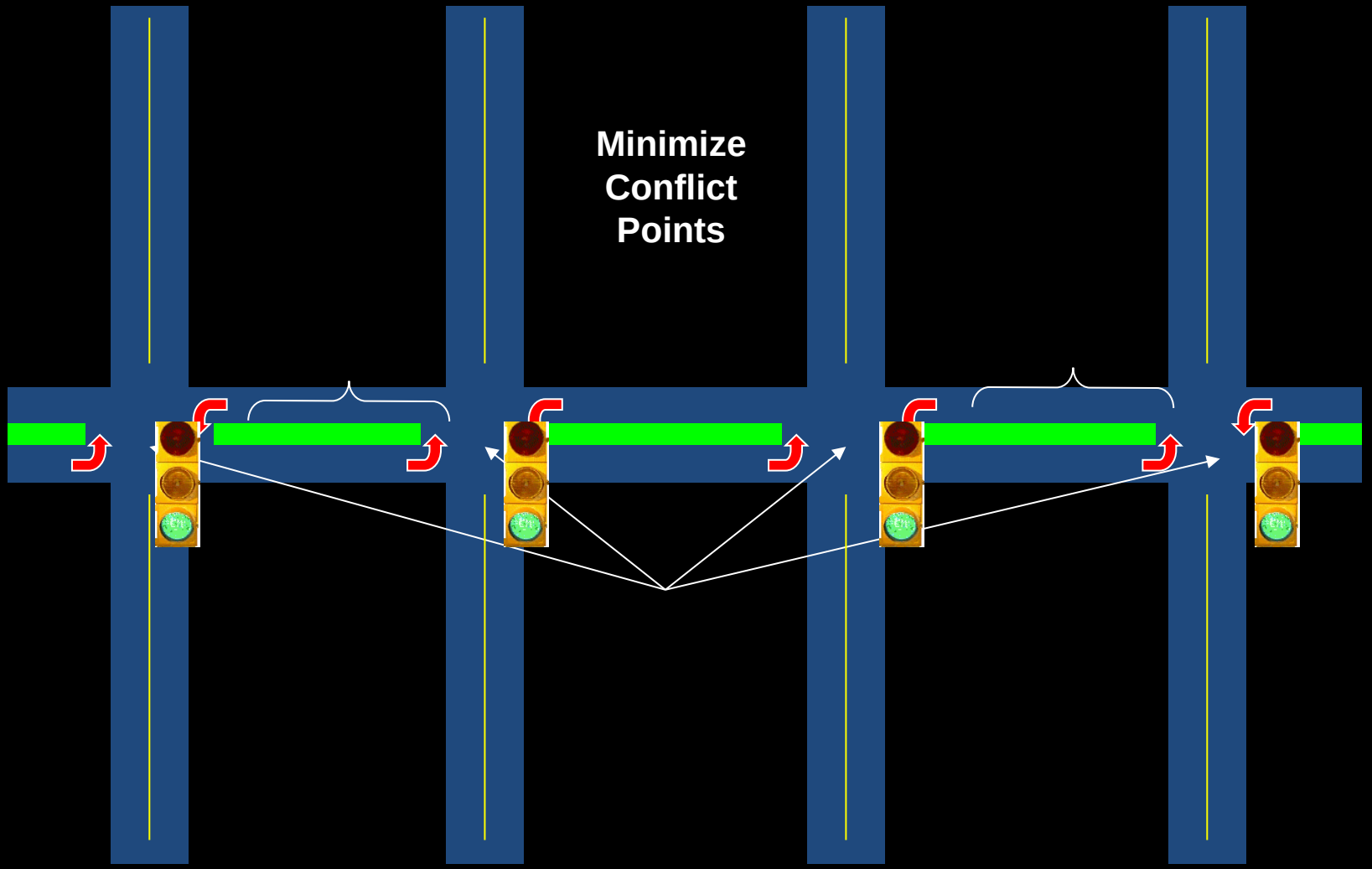
Average daily traffic (ADT) volumes anticipated along the corridor in the future range from:

- **28,800 vehicles per day (vpd) - Route 199 to Lane Pl**
- **20,500 vpd - Williamsburg Plantation to Olde Towne Rd**
- **22,500 vpd - Glenburnie Rd to Buford Rd**
- **16,500 vpd - Lafayette High School to Warhill Trail**
- **8,700 vpd - west of Ford's Colony entrance**
- **13,500 vpd - Olde Towne Rd northeast of Longhill Rd**


LEFT TURN
YIELD
ON GREEN
1,200 ft.

Improving Traffic Safety & Operations

Median Breaks and Crossovers



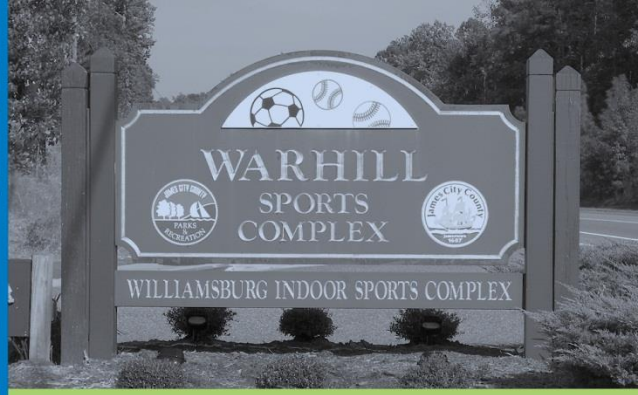


Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811



PREPARED FOR

James City County
VIRGINIA
Jamestown 1607

PREPARED BY

Kimley-Horn and Associates, Inc.

A WILLIAMSBURG - JAMES CITY COUNTY
PUBLIC SCHOOL

Study Area

- Longhill Road Corridor
- Approximately 3.0 miles
  - Route 199 interchange in the east to the intersection of Centerville Road in the west
- 14 Study Area Intersections
  - 5 Signalized
  - 9 Unsignalized
- Powhatan Creek Natural Area
- Powhatan Creek Watershed Plan

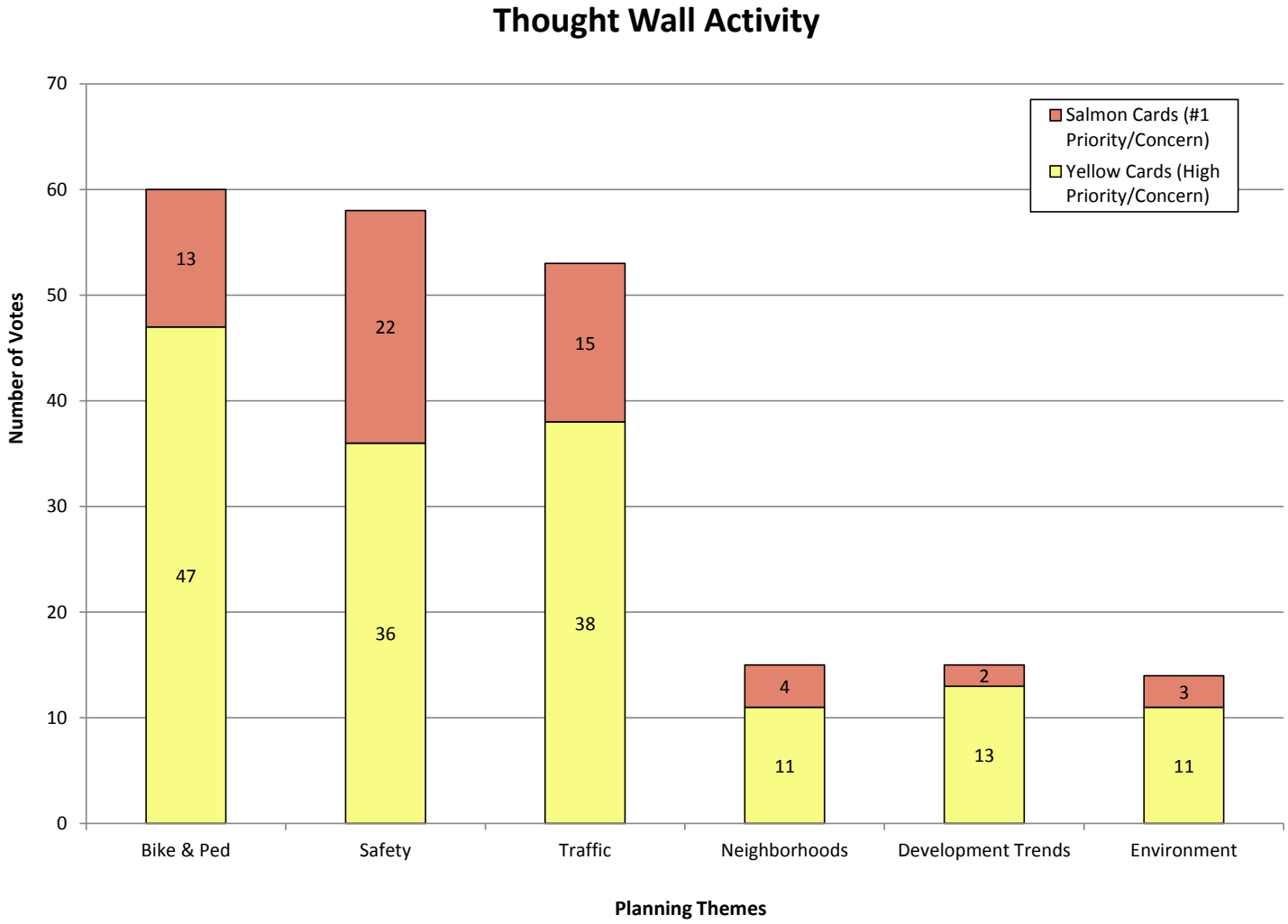

Longhill Rd
612
Freedom Park
New Zion Baptist Church
War Hill Inn Bed & Breakfast
Olde Towne Shopping Center
Ford's Colony Country Club Inc The Dining Room
Marriott's Manor Club at Ford's Colony
Fords Colony Country Club
Humelsine Pkwy
199

Project Symposium

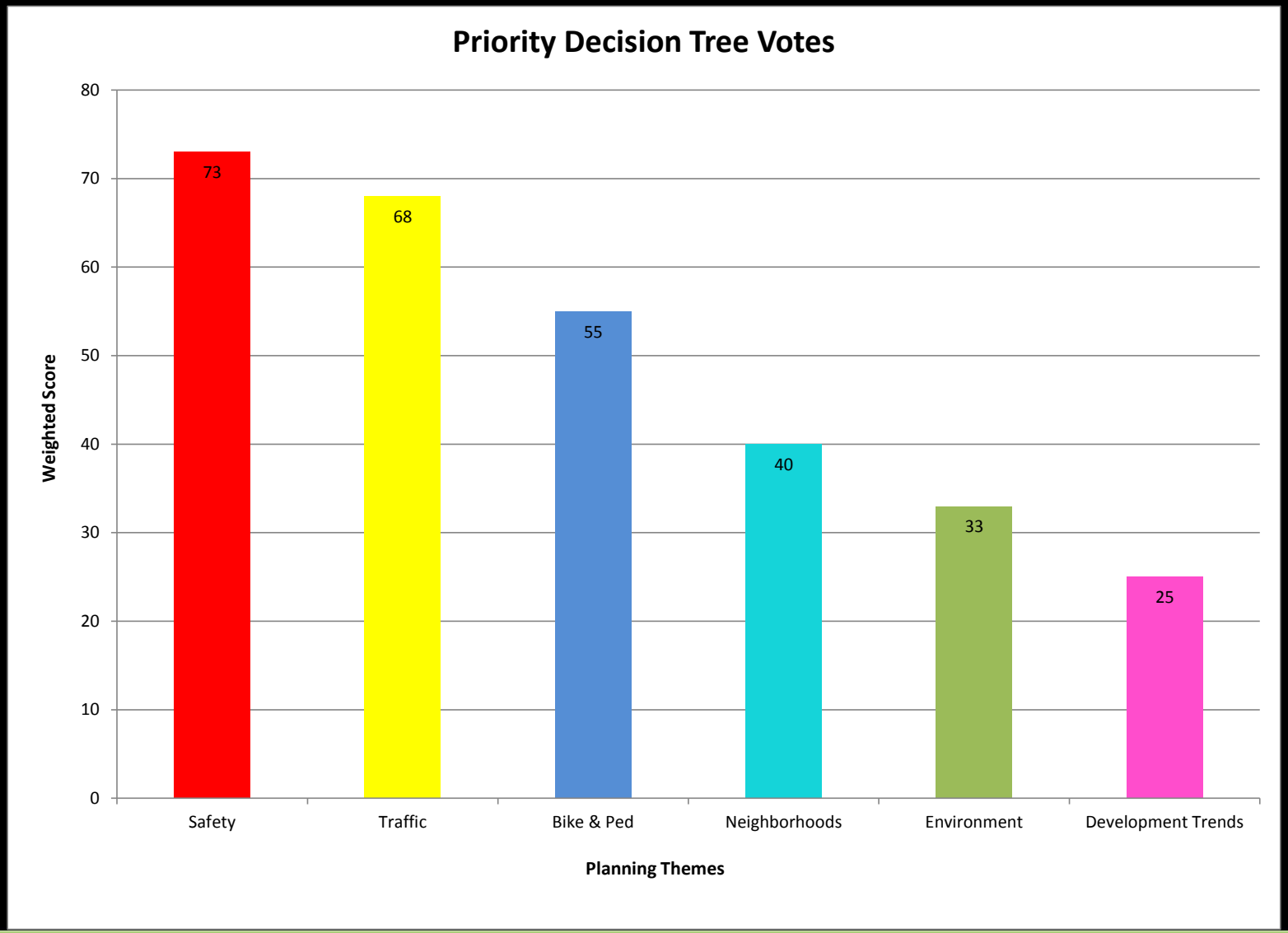
- October 3, 2013
- 70+ Attendees
- Thought Wall Exercise and Comments
- Priority Decision Tree Exercise
- Build-A-Street Exercise



Thought Wall Results



Priority Decision Tree Votes



Priority Decision Tree – Thought Wall Themes

- Safety
- Traffic Operations/Mobility
- Bike and Pedestrian Accommodations
- Environment/Neighborhoods



Build-A-Street Highlights

- Laneage - Split (2 lanes and 4 lanes)
  - 2 tables made the distinction:
    - 199 to Olde Towne Road - 4 lanes
    - Olde Towne Road to Centerville Road - 2 lanes
- Left-turn Lanes: Two-Way Left-Turn Lanes
- Multi-Use Path: 12 out of 14
- Wildcard: bus stop pull-offs





Visual Preference Survey



A



D



C



D



D



D

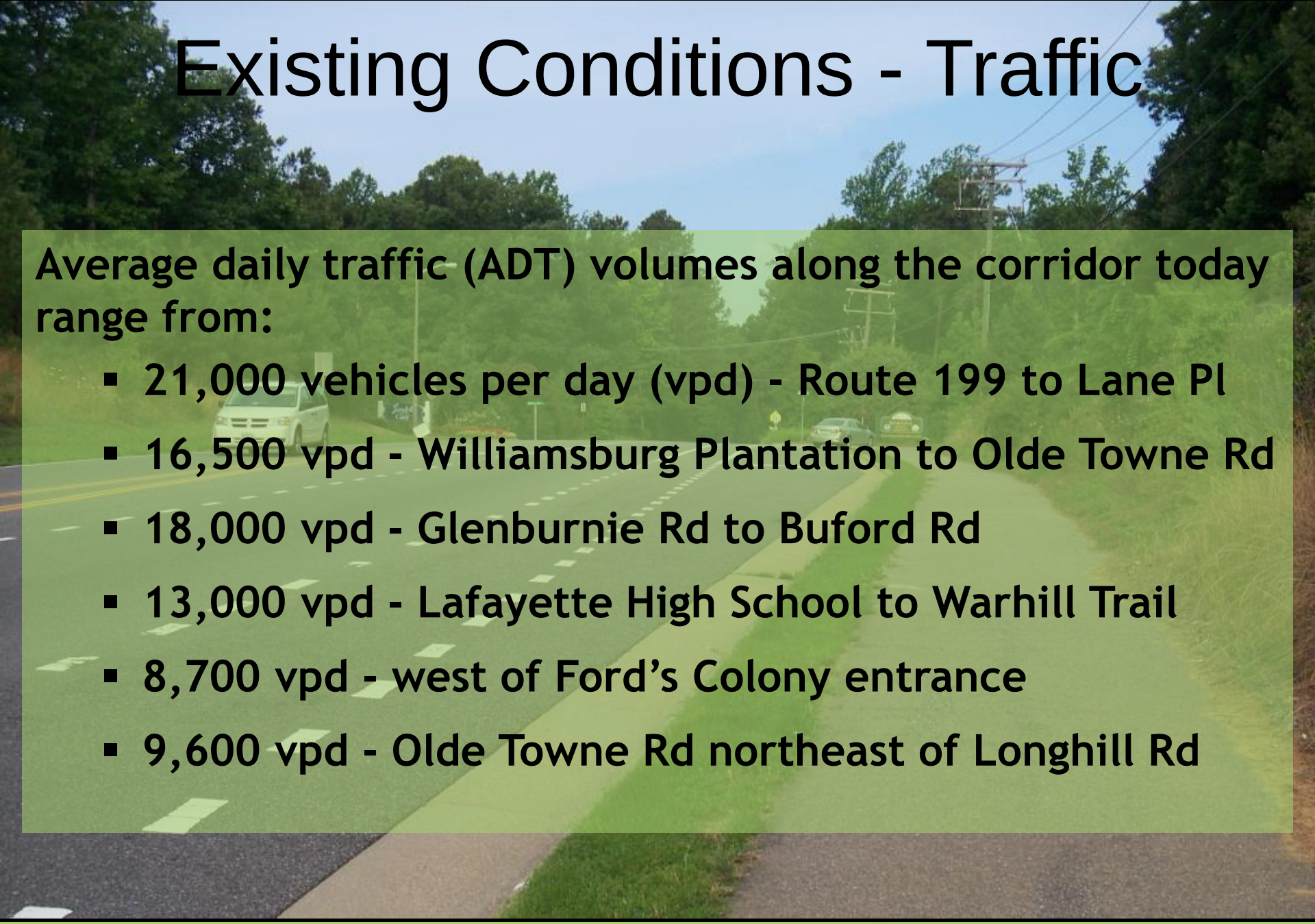


B





Existing Conditions - Traffic



Average daily traffic (ADT) volumes along the corridor today range from:

- 21,000 vehicles per day (vpd) - Route 199 to Lane Pl
- 16,500 vpd - Williamsburg Plantation to Olde Towne Rd
- 18,000 vpd - Glenburnie Rd to Buford Rd
- 13,000 vpd - Lafayette High School to Warhill Trail
- 8,700 vpd - west of Ford's Colony entrance
- 9,600 vpd - Olde Towne Rd northeast of Longhill Rd

Existing Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	37.6	A	31.9	B
Williamsburg W. Drive/Lane Place Drive	8.8	F	9.6	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	23.2	C	22.8	C
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.8	E	11.6	F
Overall	**22.1**	**C**	**20.9**	**D**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	29.0	B	25.7	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	22.1	C	20.3	D
Williamsburg W. Drive/Lane Place Drive	19.5	D	2.5	F
Olde Towne Road	13.4	E	6.0	F
Centerville Road	33.0	B	32.7	B
Overall	**25.7**	**C**	**12.4**	**F**

LOS A









LOS F

Future Conditions - Traffic

Average daily traffic (ADT) volumes anticipated along the corridor in the future range from:

- **28,500 vehicles per day (vpd) - Route 199 to Lane Pl**
- **20,600 vpd - Williamsburg Plantation to Olde Towne Rd**
- **22,500 vpd - Glenburnie Rd to Buford Rd**
- **16,500 vpd - Lafayette High School to Warhill Trail**
- **13,500 vpd - west of Ford's Colony entrance**
- **12,000 vpd - Olde Towne Rd northeast of Longhill Rd**

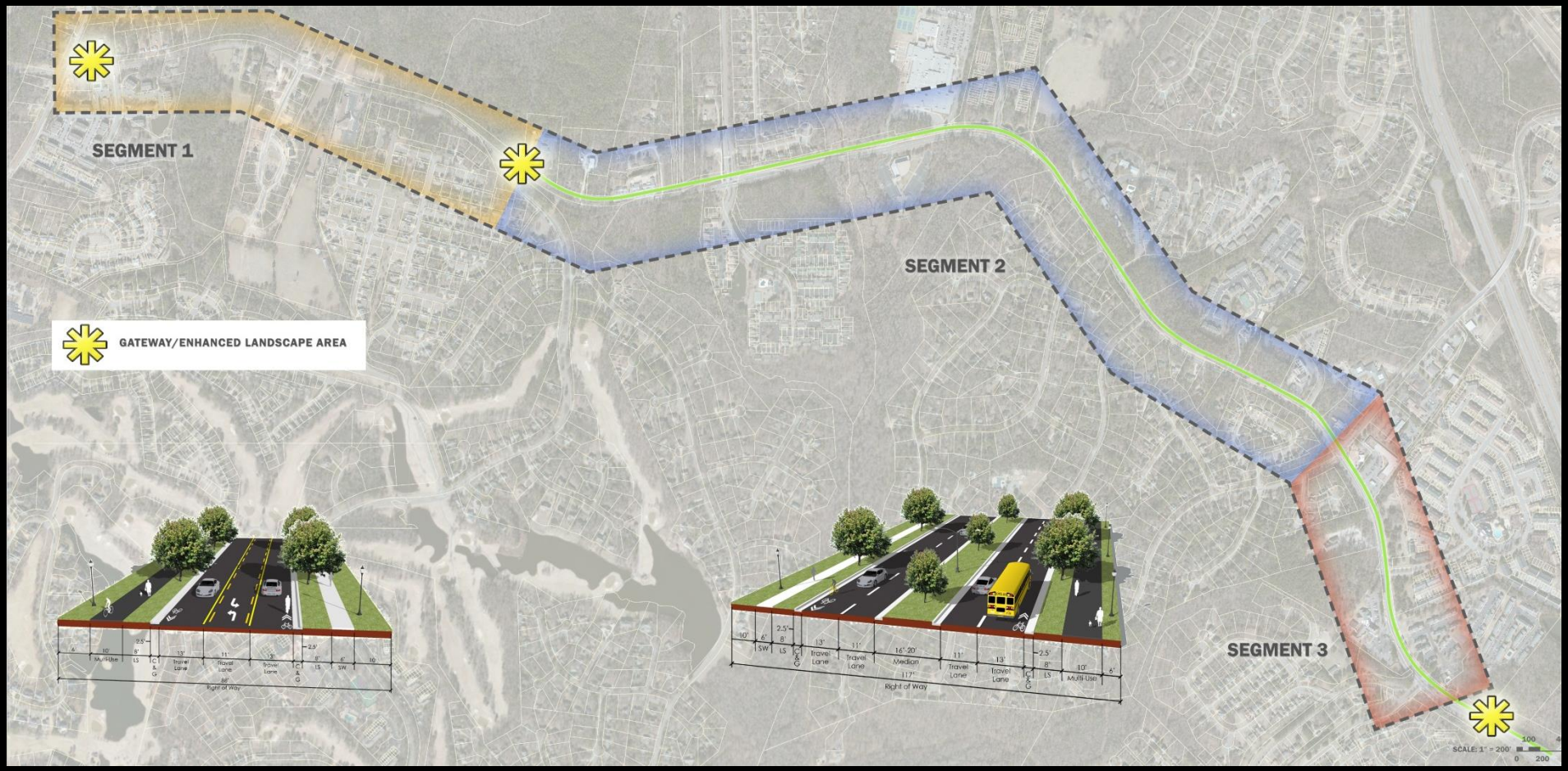
Guiding Principles

Longhill Road is an important corridor that connects people with significant places in our community; therefore, design improvements to the corridor should:

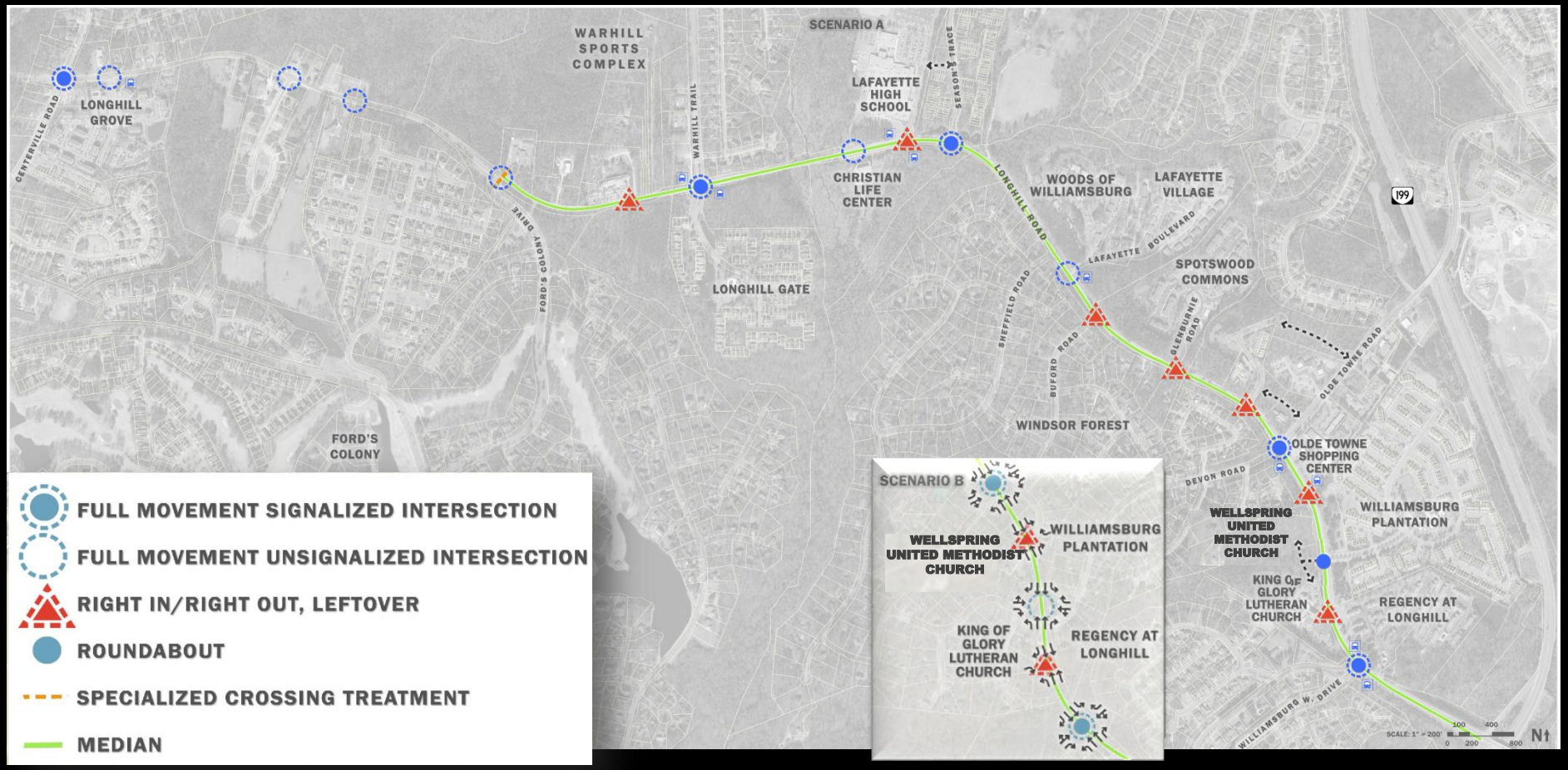
- Respect the context of the area,
- Safely accommodate all users,
- Respond to existing and projected traffic volumes,
- Be visually appealing, and
- Minimize impact to the natural and built environments.

The resulting improvements will integrate with existing neighborhoods, offer consistence with the comprehensive plan, and promote quality growth and economic vitality.

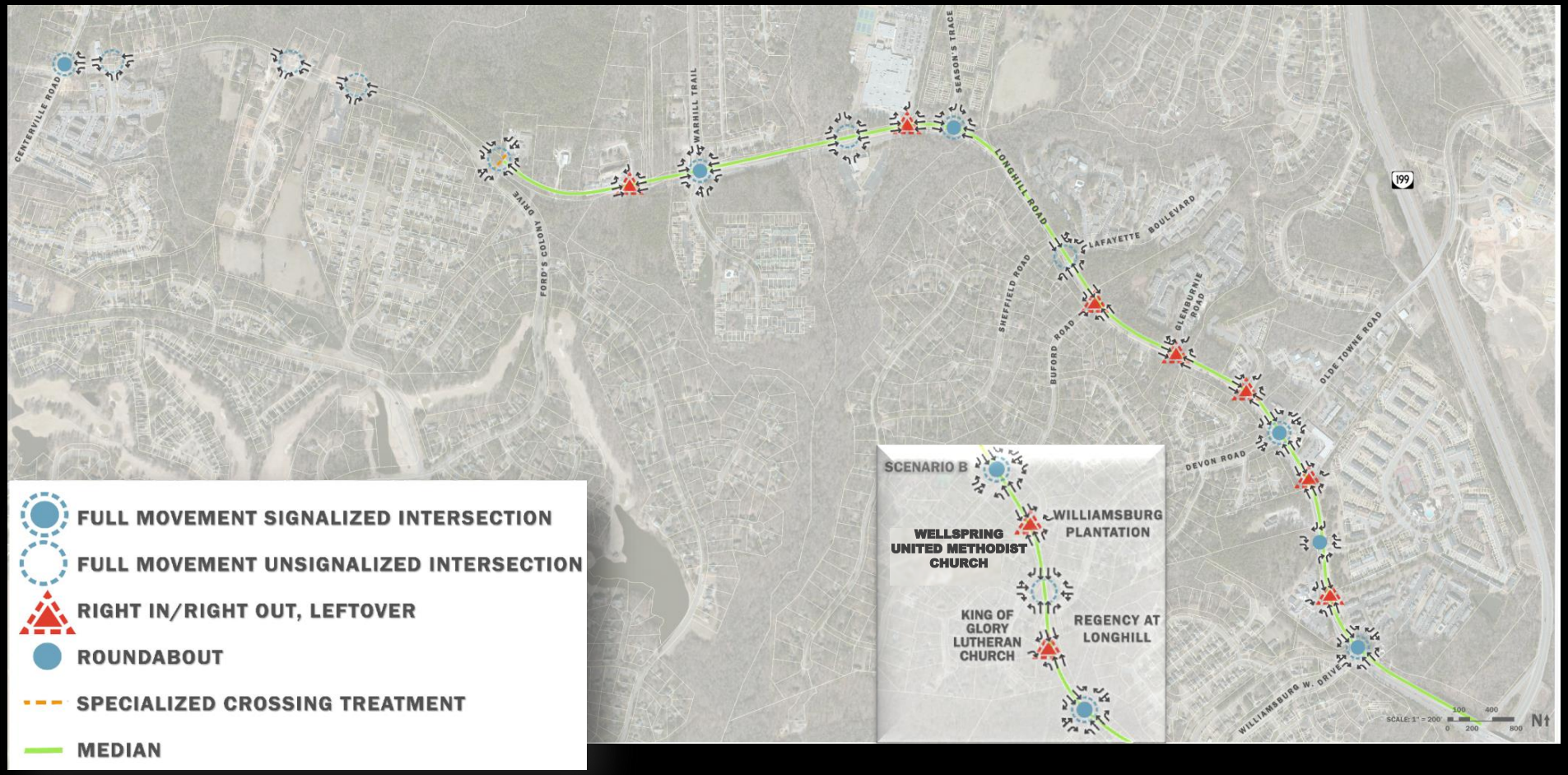
Influence of Context
“Right-sizing”



Access Strategy



Proposed Intersection Laneage



FULL MOVEMENT SIGNALIZED INTERSECTION

FULL MOVEMENT UNSIGNALIZED INTERSECTION

RIGHT IN/RIGHT OUT, LEFTOVER

ROUNDABOUT

SPECIALIZED CROSSING TREATMENT

MEDIAN



Example Access Configurations





Wednesday evening's workshop



Wednesday evening's workshop





Wednesday evening's workshop

Comments from Wednesday evening's workshop

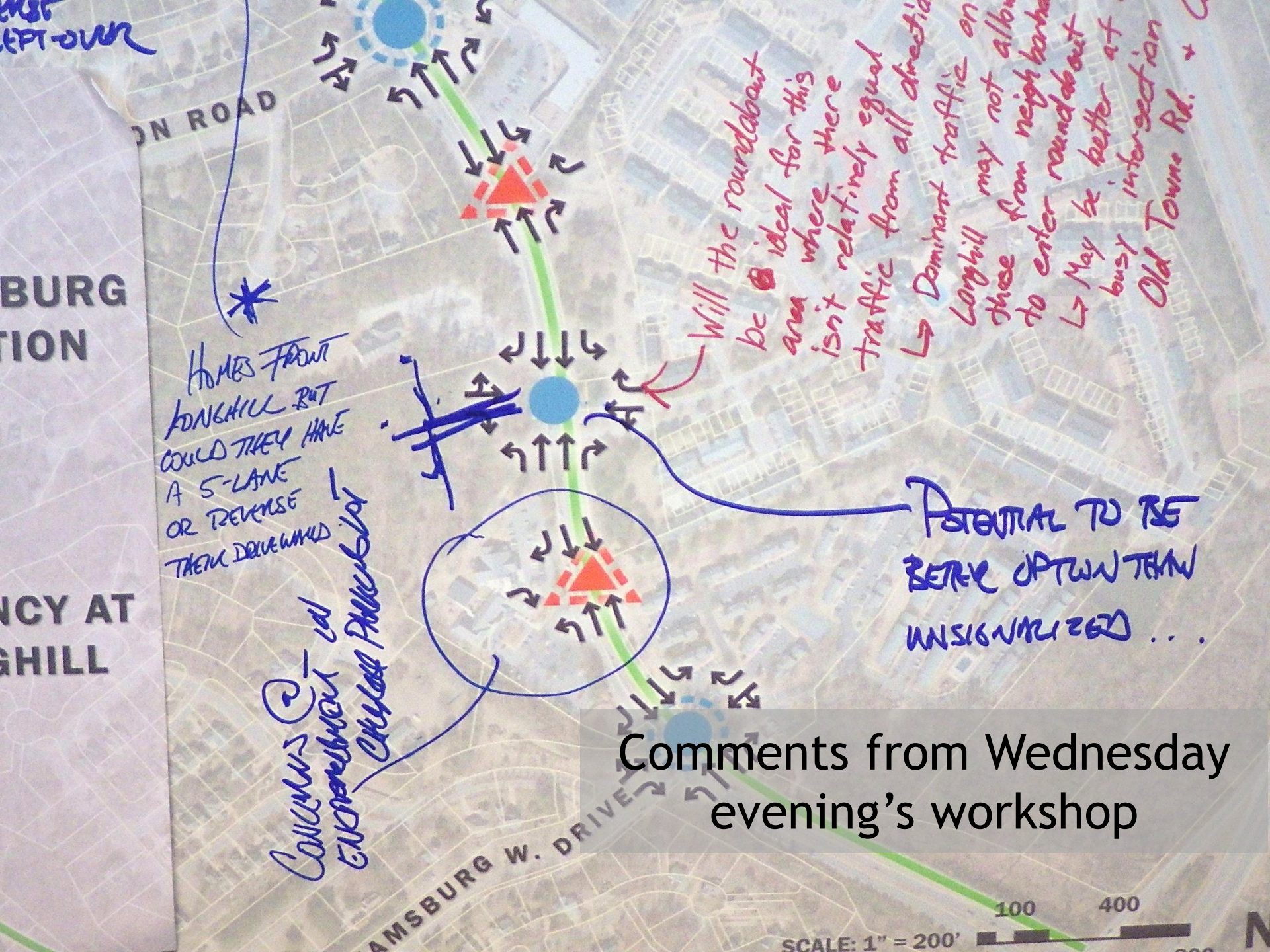


TYPICAL 4 LANE CROSS SECTION

SS SECTION




Comments from Wednesday evening's workshop
LONGHILL ROAD
LAFAYETTE BOULEVARD
SHEFFIELD ROAD
BUFORD ROAD
GLENBURNIE ROAD
OLDE TOWNE ROAD
SCENARIO B
I DONT WANT TO DO A "U-TURN"
NEEDS FULL-MOVEMENT OR CONSIDER TO PROVIDE LEFT-OVER
BE SURE TO INCLUDE CROSSINGS WITH LIGHTS !!!
ideal for this where there



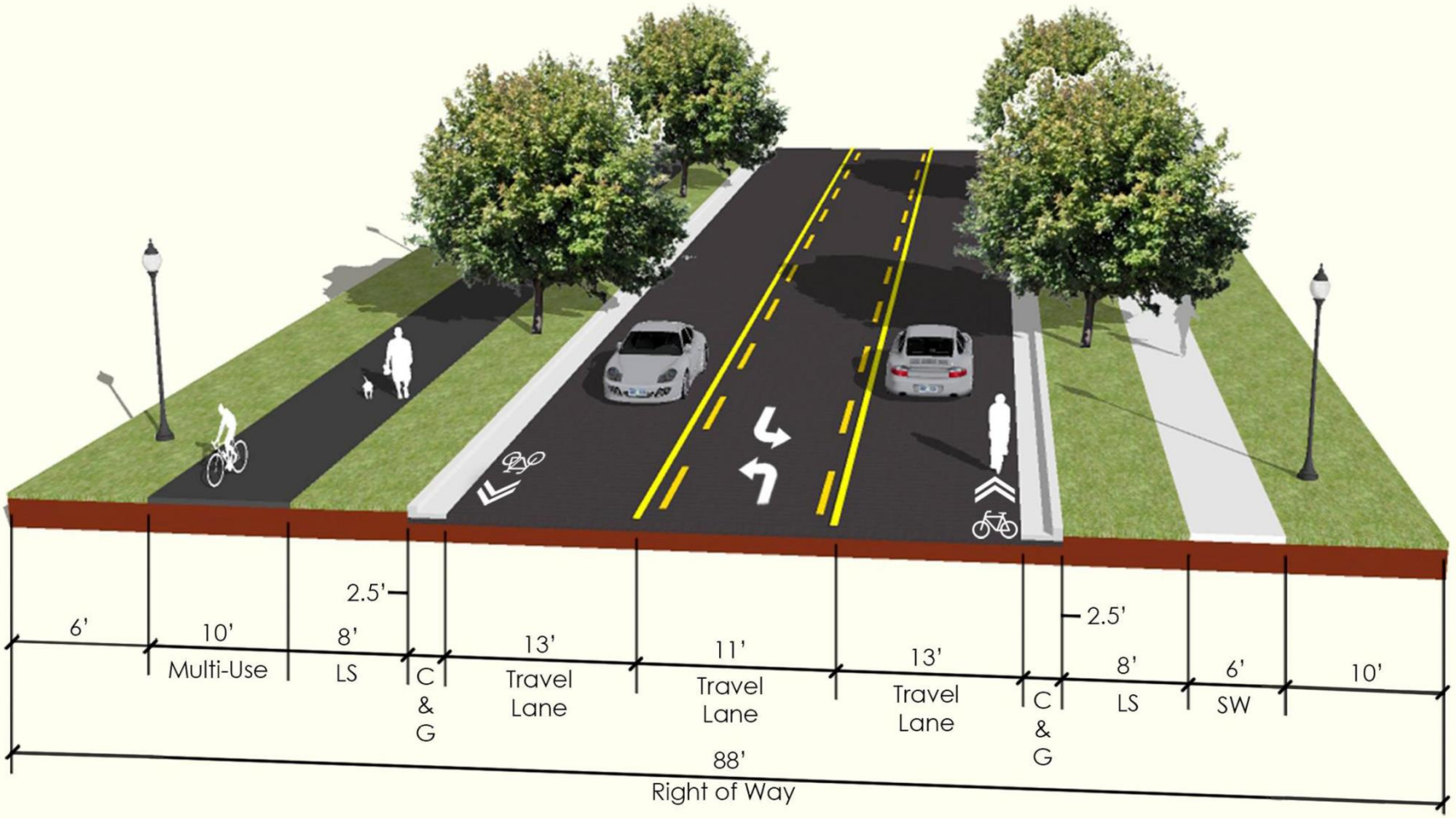
Comments from Wednesday evening's workshop

Some Things We Heard…

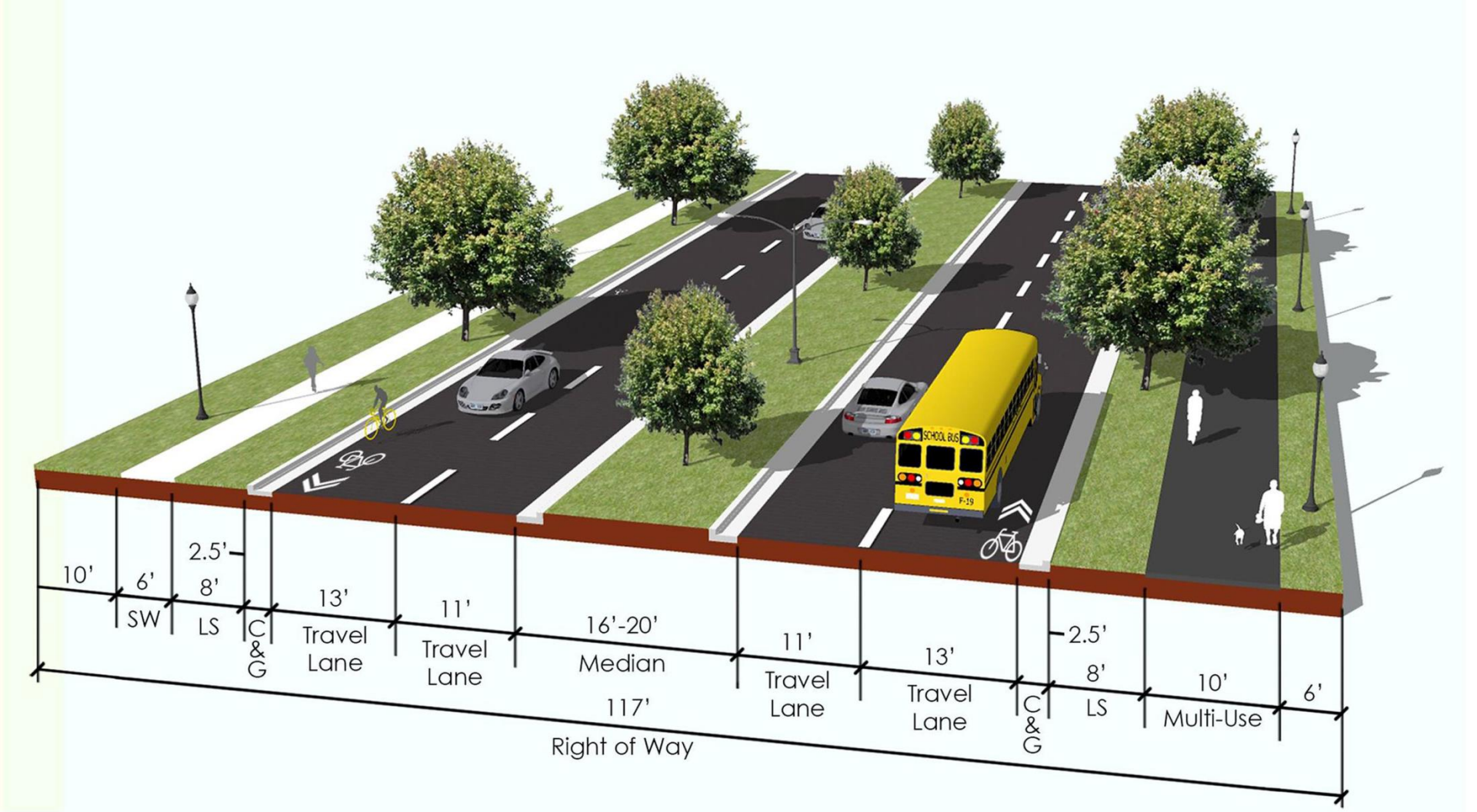
Comment	Action Plan		
	Agree	Consider	Disagree
1. Provide roundabout at Centerville Rd / Longhill Rd			✓
2. Connection from Warhill Sports Complex to Longhill Road.		✓	
3. Install traffic signalization at Warhill Trail and Season's Trace before roadway widening.		✓	
4. Provide a roundabout at Season's Trace.			✓
5. Provide a full movement unsignalized intersection at Glenburnie Road.	✓		
6. Provide a roundabout at Williamsburg West Drive.			✓
7. Provide street lights along corridor.	✓		
8. Provide high visibility crosswalks.	✓		
9. Remove the sidewalk since a multi-use path is provided			✓
10. Modify shared bike lane (either remove or offer dedicated)		✓	

A Glance
at What You Helped to Create

Three-lane Complete Street



Median Divided Boulevard





CENTERVILLE ROAD

LONGHILL ROAD

SCALE: 1" = 50'

25 100

0 50 200

N

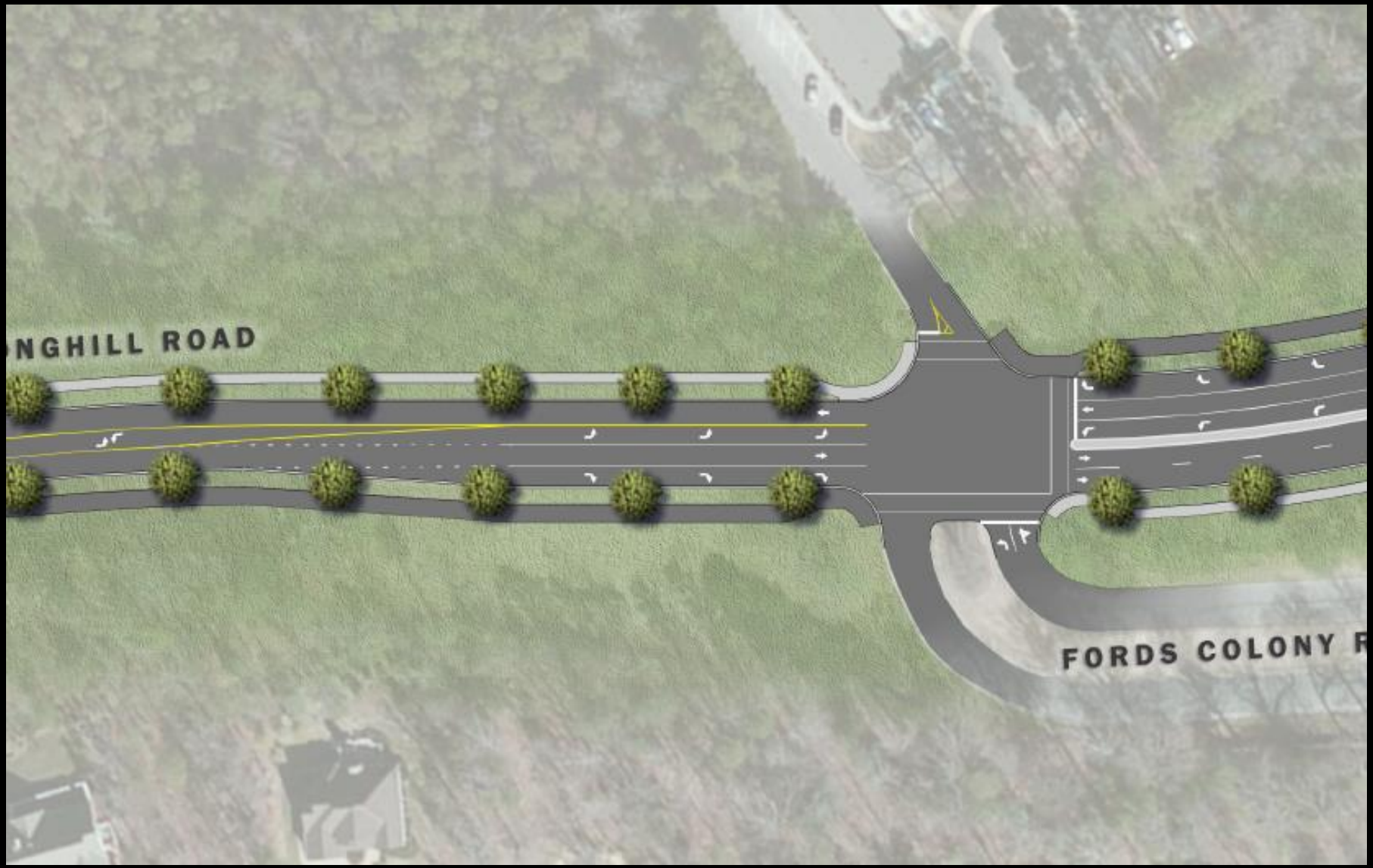
Longhill Road Corridor Study *James City County*

Kimley-Horn and Associates, Inc.


LONGHILL ROAD
BURLINGTON LANE
SCALE: 1" = 50'
25
100
0
50
200
N

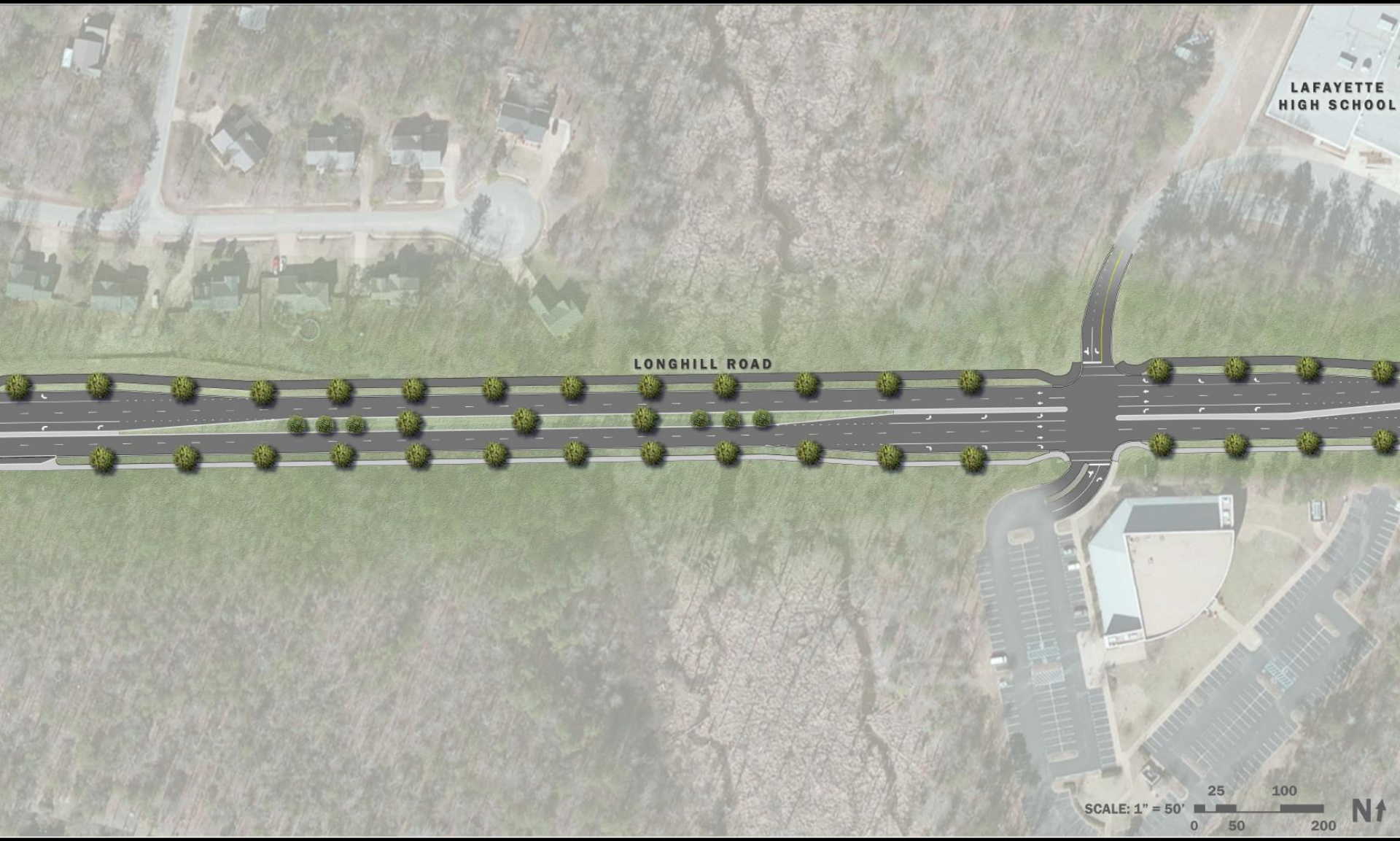

LONGHILL ROAD
FORDS COLONY ROAD
SCALE: 1" = 50'
25
100
0
50
200
N

Inset of the transition area




LONGHILL ROAD
WARHILL TRAIL
SCALE: 1" = 50'
0
25
50
100
200
N

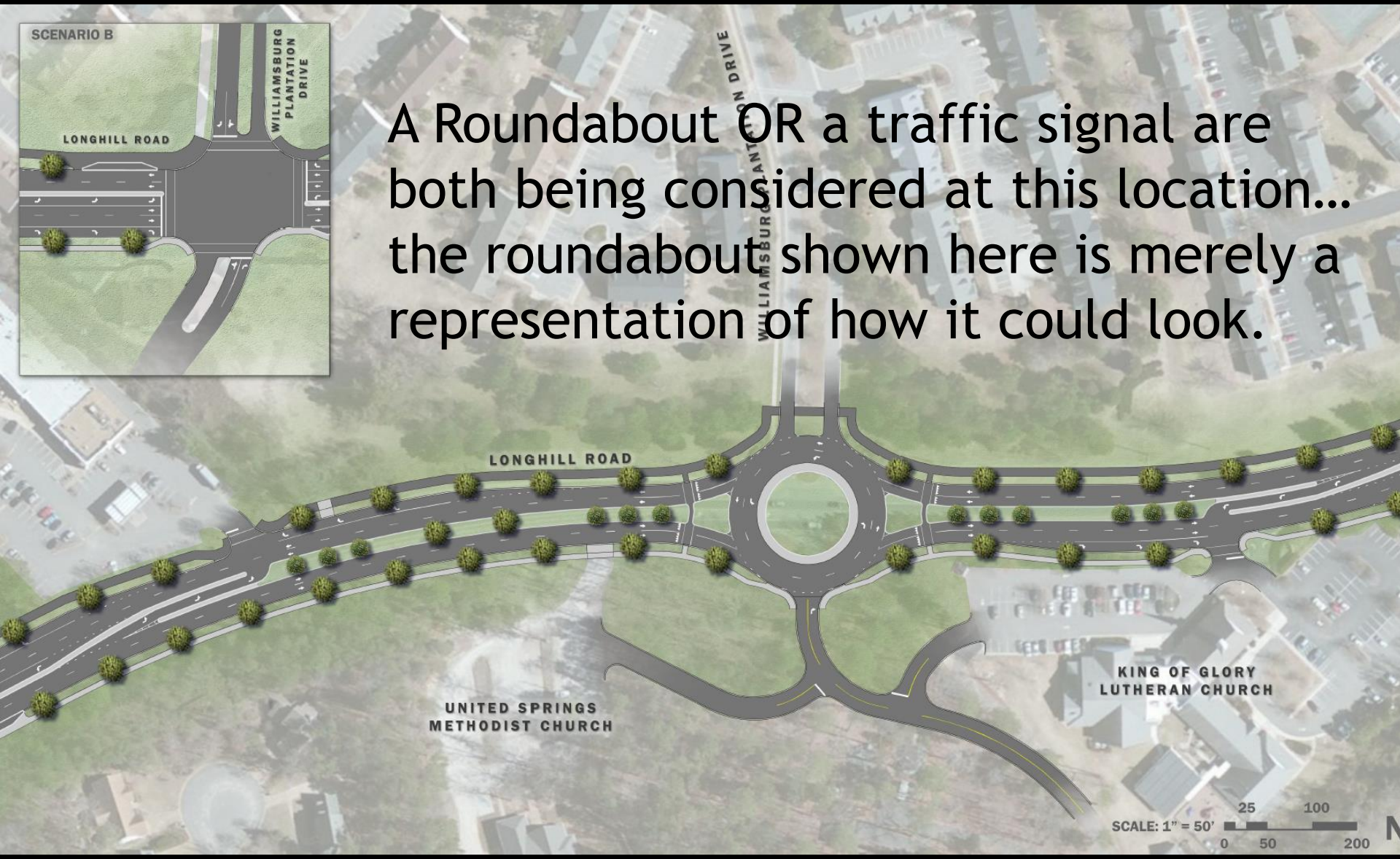
10'
6'
SW
2.5'
8'
LS
C&G
13'
Travel Lane
11'
Travel Lane
16'-20'
Median
11'
Travel Lane
13'
Travel Lane
C&G
2.5'
8'
LS
10'
Multi-Use
6'
117'
Right of Way


LAFAYETTE
HIGH SCHOOL
LONGHILL ROAD
SCALE: 1" = 50'
25
100
0
50
200
N


SEASON'S TRACE
LONGHILL ROAD
LAFAYETTE
HIGH SCHOOL
SCALE: 1" = 50'
25
100
0
50
200
N


LAFAYETTE BOULEVARD
LONGHILL ROAD
SHEFFIELD ROAD
BUFORD ROAD
SCALE: 1" = 50'
0
25
50
100
200
N


GLENBURNIE ROAD
LONGHILL ROAD
NEW POINT ROAD
OLD TOWN E ROAD
DEVON ROAD
SCALE: 1" = 50'
25
100
0
50
200
N


SCENARIO B
WILLIAMSBURG PLANTATION DRIVE
LONGHILL ROAD
A Roundabout OR a traffic signal are both being considered at this location… the roundabout shown here is merely a representation of how it could look.
WILLIAMSBURG PLANTATION DRIVE
LONGHILL ROAD
UNITED SPRINGS METHODIST CHURCH
KING OF GLORY LUTHERAN CHURCH
SCALE: 1" = 50'
25
100
0
50
200


LONGHILL ROAD
WILLIAMSBURG WEST DRIVE
199
SCALE: 1" = 50'
0
25
50
100
200
N

Next Steps

- Present the Concept Design Options to the Technical Committee
- Provide project status update presentation to James City County Policy Committee
- Provide project status update presentation to James City County Board of Supervisors
- Make any necessary modification(s) to the Concept Design
- Prepare DRAFT FINAL Report
- VDOT Phase 1: Hwy 199 to Olde Towne Road will continue forward in the process

For more information

WWW.LONGHILLROADCORRIDORSTUDY.COM



Longhill Road Corridor Study

James City County







#13-5389
UPC: 98811

NOVEMBER 2012



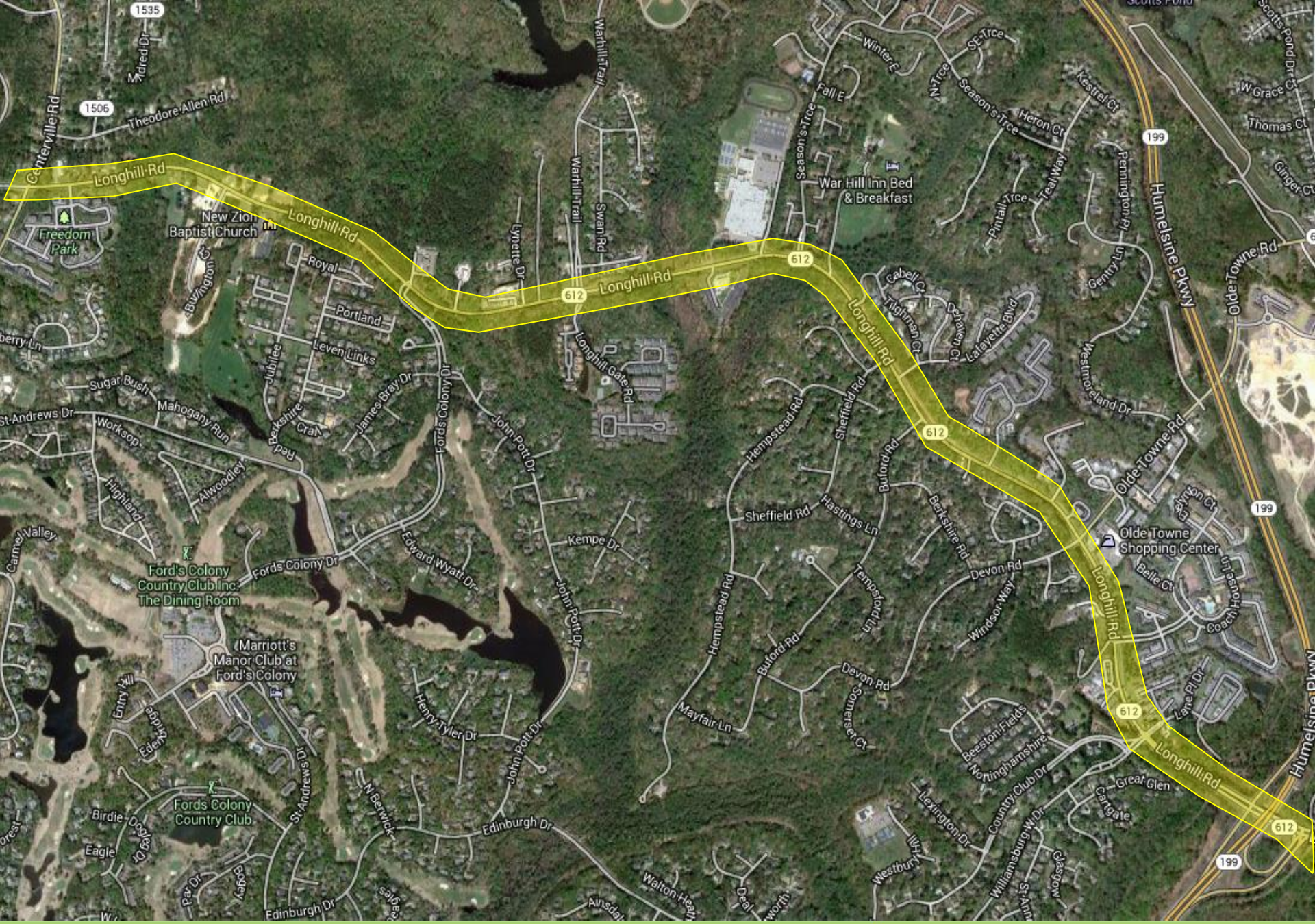
PREPARED FOR

James City County VIRGINIA Jamestown 1607

PREPARED BY

Kimley»Horn

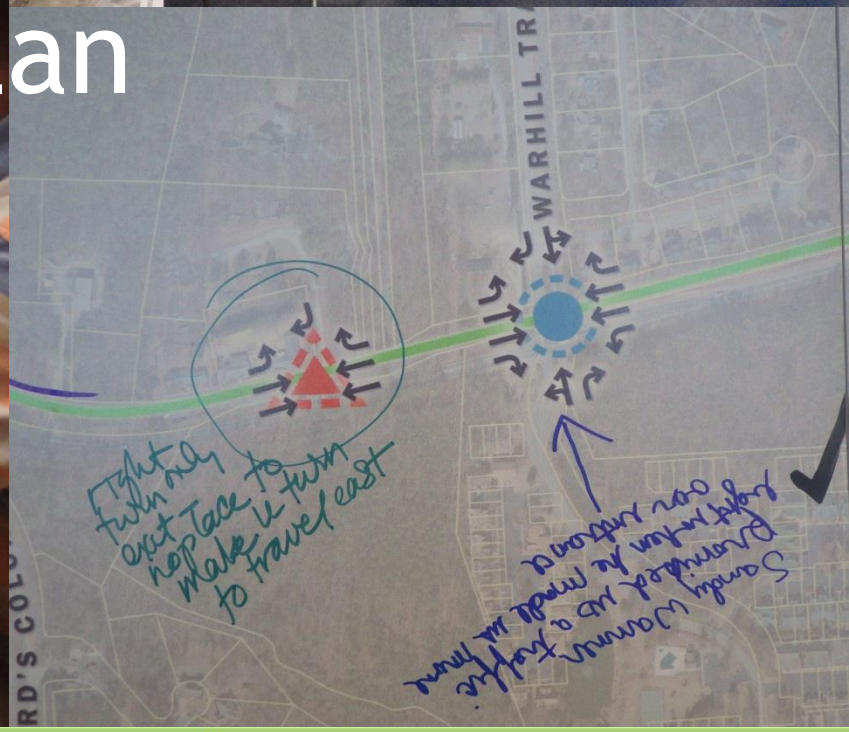
A WILLIAMSBURG - JAMES CITY COUNTY PUBLIC SCHOOL


Longhill Rd
612
199
1535
1506
Freedom Park
New Zion Baptist Church
War Hill Inn Bed & Breakfast
Olde Towne Shopping Center
Ford's Colony Country Club Inc The Dining Room
Marriott's Manor Club at Ford's Colony
Fords Colony Country Club
Humelsine Pkwy
Olde Towne Rd
Fords Colony Dr
John Pott Dr
Sheffield Rd
Hempstead Rd
Devon Rd
Edinburgh Dr
Mayfair Ln
Great Glen
Warhill Trail
Swan Rd
Longhill Gate Rd
Theodore Allen Rd
Canterville Rd
Sugar Bush
Mahogany Run
Worksop
Portland
Royal
Leven Links
Jubilee
James Bray Dr
Kempe Dr
Edward Wyatt Dr
Henry Tyler Dr
Entry Hill
Eden Bridge
St Andrews Dr
N Berwick
Birdie
Eagle
Bogey
Par Dr
Buford Rd
Berkshire Rd
Hastings Ln
Tempsford Ln
Somerset Ct
Windsor Way
Belle Ct
Coach House Ln
Lane Pl Dr
Beeston Fields
Nottinghamshire
Country Club Dr
Williamsburg W Dr
Lexington Dr
Westbury
Cartgate
Walton Heath
Deal
Ainsdale
Worth
Season's Trce
Fall E
Winter E
N Trce
Heron Ct
Kestrel Ct
Teal Way
Pintail Trce
Pennington Pl
Gentry Ln
Cabell Ct
Tilghman Ct
Delaware Ct
Lafayette Blvd
Westmoreland Dr
Scotts Pond Dr
W Grace Ct
Thomas Ct
Ginger Ct
Lynnette Ct
Bivington
Cranbrook
Perkshire
Red
Highland
Alwoodley
Carmel Valley
Ford's Colony
Fords Colony Dr
Longhill Rd
Longhill Rd
Longhill Rd





Your Plan



We started when:

- Project Kick-Off: May 2013
- Stakeholder Interviews: July 2013



Remember Why We're Doing This



Total Number of Crashes: 102
Located Crashes: 67
Crash Severity:
- Property Damage Only - 41 crashes
- Injury - 57 crashes
- Pedestrian Injury - 4 crashes

Crash Type:
- Angle - 29 crashes
- Rear End - 49 crashes
- Sideswipe Same Direction - 2 crashes
- Fixed Object Off Road - 7 crashes
- Pedestrian - 3 crashes

Existing Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	37.6	A	31.9	B
Williamsburg W. Drive/Lane Place Drive	8.8	F	9.6	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	23.2	C	22.8	C
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.8	E	11.6	F
Overall	**22.1**	**C**	**20.9**	**D**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	29.0	B	25.7	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	22.1	C	20.3	D
Williamsburg W. Drive/Lane Place Drive	19.5	D	2.5	F
Olde Towne Road	13.4	E	6.0	F
Centerville Road	33.0	B	32.7	B
Overall	**25.7**	**C**	**12.4**	**F**

LOS A









LOS F

Future No-Build Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Old Towne Road	37.6	A	20.6	D
Williamsburg W. Drive/Lane Place Drive	6.4	F	3.8	F
Humelsine Parkway (Route 199) EB Off/On-Ramp	21.9	D	21.6	D
Humelsine Parkway (Route 199) WB Off/On-Ramp	14.3	E	11.2	F
Overall	**18.9**	**D**	**11.4**	**F**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	28.8	B	25.8	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	21.8	D	17.7	D
Williamsburg W. Drive/Lane Place Drive	17.9	D	1.2	F
Olde Towne Road	18.1	D	2.6	F
Centerville Road	33.0	B	29.7	B
Overall	**27.3**	**C**	**6.7**	**F**

LOS A









LOS F

Guiding Principles

Longhill Road is an important corridor that connects people with significant places in our community; therefore, design improvements to the corridor should:

- Respect the context of the area,
- Safely accommodate all users,
- Respond to existing and projected traffic volumes,
- Be visually appealing, and
- Minimize impact to the natural and built environments.

The resulting improvements will integrate with existing neighborhoods, offer consistence with the comprehensive plan, and promote quality growth and economic vitality.

Project Symposium – October 3, 2013

Symposium at a Glance

The Longhill Road Corridor Symposium, held at the James City County Recreation Center on October 3rd from 7-9 pm, served to inform the public and solicit their input for the corridor planning process. It was an action-packed event that adopted the popular "TED Talks" format with brief, direct, and on point presentations on each of the six planning themes: Safety, Traffic, Bike & Ped, Neighborhoods, the Environment, and Development Trends. Over 75 stakeholders from throughout the study area engaged in a series of thought provoking individual and group exercises designed to unleash the participant's top priorities, concerns, and preferences moving forward. This brochure represents a summary of the wealth of information generated during the symposium that will presented to the Project Advisory Committee (PAC) prior to the finalization of guiding principles.

Symposium Activities

- Planning Themes Presentations
- Activity A: Planning Questionnaire
- Activity B: Thought Wall
- Activity C: Priority Decision Tree
- Activity D: Build-A-Street
- Closing Remarks

activity summaries

Planning Questionnaire

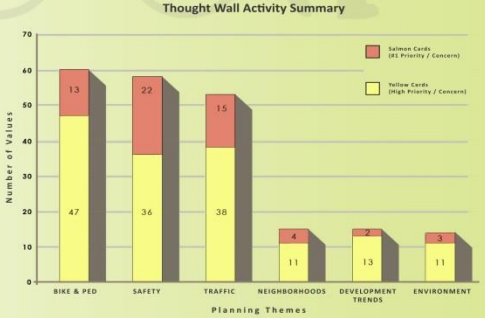
After they were seated at their tables, participants filled out a brief questionnaire outlining their greatest hopes and fears for the corridor. They voted upon, and expressed comments about, corridor features that should be protected, as well as some potential solutions to improve the corridor's functionality. These "Planning Postcards" provided insight into their motivating factors for staying connected to date and their motivation for continued investment in this project. This questionnaire and the results will be available on the project website at www.LonghillRoadCorridorStudy.com.

Thought Wall

After listening to the Planning Themes presentations on the six planning themes, participants were given four colored sheets and asked to identify their top priorities or concerns and share them on the "Thought Wall." Individually, they expressed these priorities/ concerns in bold print on their sheets of paper (salmon color for their #1 priority/concern and yellow color for a high priority/concern) and placed each sheet under the most appropriate planning themes on the designated "Thought Wall." The results were then stacked from the floor-up resulting in a large scale histogram representing the frequency of priority votes offered by individual participants. Based on a weighted scoring system, the top three planning themes were Bike & Ped, Safety, and Traffic. Safety had the most #1 priority/concern votes, followed closely by Traffic and Bike & Ped.

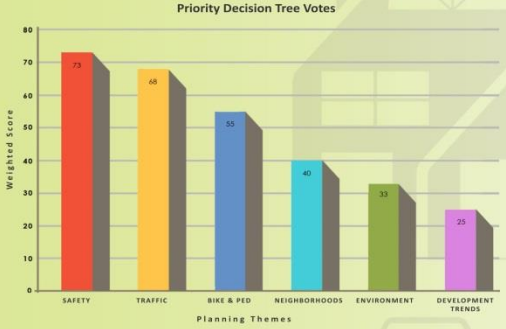






Priority Decision Tree

This exercise represented a group effort to examine the same planning themes, priorities and concerns as prioritized in the previous "Thought Wall" exercise. The final product was called a "priority decision tree" and consisted of a vertical stem and base with the six planning theme placards ordered from top to bottom in order of importance. Tables were directed to write on the placards the topics within those planning themes they believed were of the greatest priority or concern to their group. This exercise resulted in a robust discussion where the tables examined trade-offs and negotiated their perspectives as individuals within the group. Again, based on a weighted scoring system, the top three planning themes were Safety, Traffic, and Bike & Ped (although this time, Safety and Traffic outperformed Bike & Ped).







Build-A-Street

This exercise represented a group effort to identify an ideal cross-section for the corridor. They were presented with a toolbox of common corridor elements such as primary travel lanes, medians, sidewalks, street trees, bike lanes, multi-use paths, etc. and worked together to talk through and negotiate the trade-offs between right-of-way (ROW) and desired cross section features.

Table	# of Lanes	Left Turn Lane(s)	Median	Bike Lane(s)	Street Tree(s)	Planting Strip(s)	Shoulder	Multiuse Path(s)	Sidewalk(s)	Wild Card
1	4	X - 2	X - depressed with trees	-	X - 1	X - 1	-	X - 1	X - 1	-
2	4	X - 2way	-	X - 2	-	-	X - 2	X - 1	-	-
3	4	X - 2way where necessary	X - 1 where necessary	-	-	X - 1	X - 1	X - 1	-	-
4	4	X - 2way	-	X - 2 wide outside lanes	-	-	X - 2	-	-	-
5	4	X - 1 where necessary	-	-	-	-	X - 2 with street lights at intersections	X - 1	-	-
6	2	-	-	X - 1	X - 2	X - 1	-	X - 1	-	Stoplight at WISC/ Longhill Gate x-section & benches along path
7	2	X - 2way	-	X - 1	-	-	X - 2	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
8	2	X - 1 where necessary	X - planted median with curb & gutter	X - 2	X - 2	-	-	X - 1	-	Bus stop pull-offs with shelters
9	2	X - 1 where necessary	X - 1 where necessary	X - 1	X - 2 without curb & gutter	-	X - 1	X - 1	-	-
10	2	X - 2way	-	X - 2	X - 2	-	X - 2	-	X - 1	-
11	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-
12	2	X - 2way	-	-	X - 2	-	-	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
13 - 199 to Olde Towne	4	-	X - depressed	-	-	X - 1	-	X - 1	-	-
13 - Olde Towne to Centerville	2	X - 1 where necessary	X - 1 where necessary	X - 1	-	-	X - 2	-	X - 1	-
14 - 199 to Olde Towne	4	X - 1 where necessary	X - 1 where necessary	-	-	X - 1	-	X - 1	-	-
14 - Olde Towne to Centerville	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-

Build-A-Street Activity Summary









Thoughts Anyone?



You want the street to look like what?

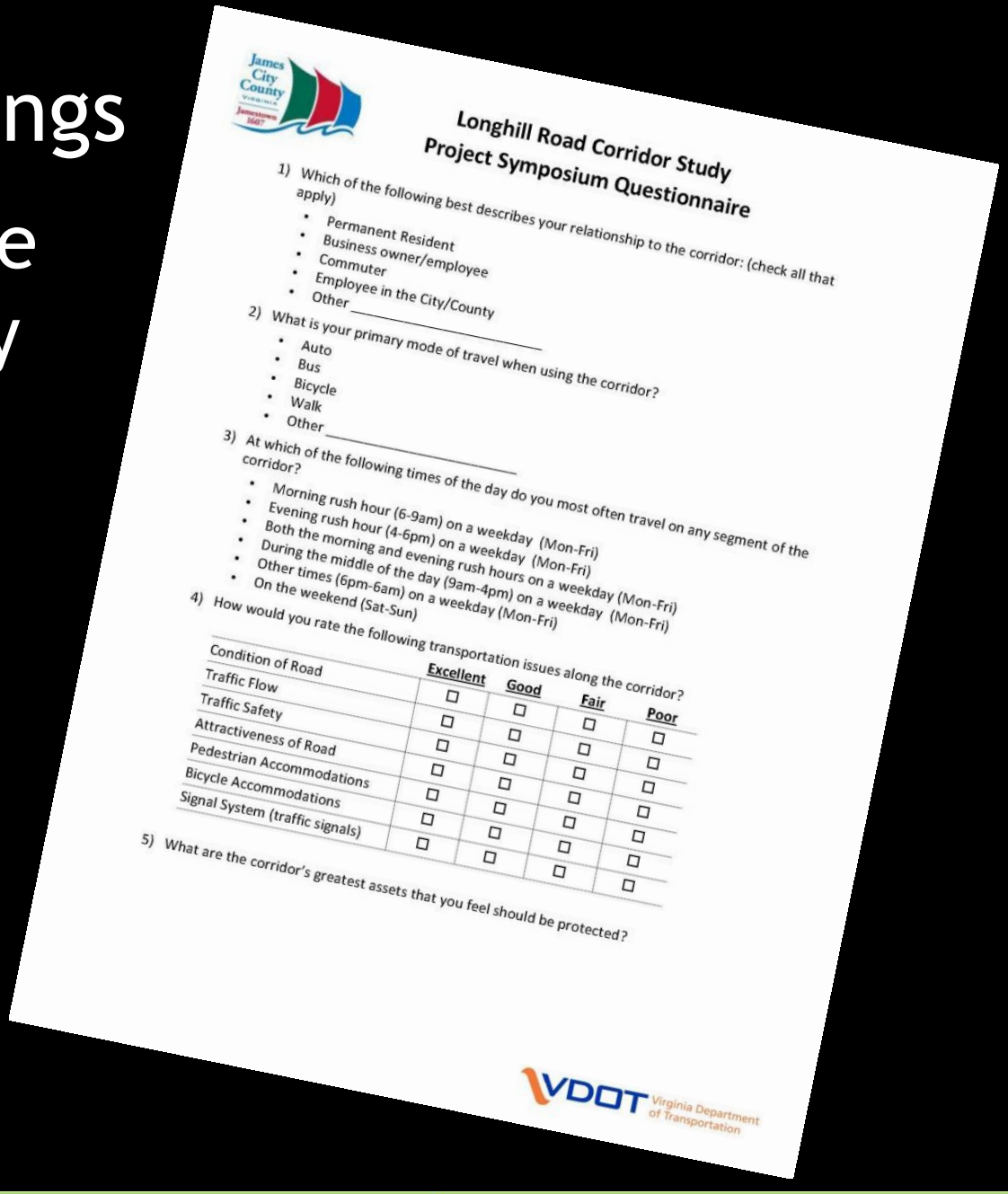


What's most important to you…



More than Meetings

- One Questionnaire and Online Survey
- Stakeholder interviews



Longhill Road Corridor Study
Project Symposium Questionnaire

1) Which of the following best describes your relationship to the corridor: (check all that apply)
   - Permanent Resident
   - Business owner/employee
   - Commuter
   - Employee in the City/County
   - Other _____

2) What is your primary mode of travel when using the corridor?
   - Auto
   - Bus
   - Bicycle
   - Walk
   - Other _____

3) At which of the following times of the day do you most often travel on any segment of the corridor?
   - Morning rush hour (6-9am) on a weekday (Mon-Fri)
   - Evening rush hour (4-6pm) on a weekday (Mon-Fri)
   - Both the morning and evening rush hours on a weekday (Mon-Fri)
   - During the middle of the day (9am-4pm) on a weekday (Mon-Fri)
   - Other times (6pm-6am) on a weekday (Mon-Fri)
   - On the weekend (Sat-Sun)

4) How would you rate the following transportation issues along the corridor?

	Excellent	Good	Fair	Poor
Condition of Road	☐	☐	☐	☐
Traffic Flow	☐	☐	☐	☐
Traffic Safety	☐	☐	☐	☐
Attractiveness of Road	☐	☐	☐	☐
Pedestrian Accommodations	☐	☐	☐	☐
Bicycle Accommodations	☐	☐	☐	☐
Signal System (traffic signals)	☐	☐	☐	☐

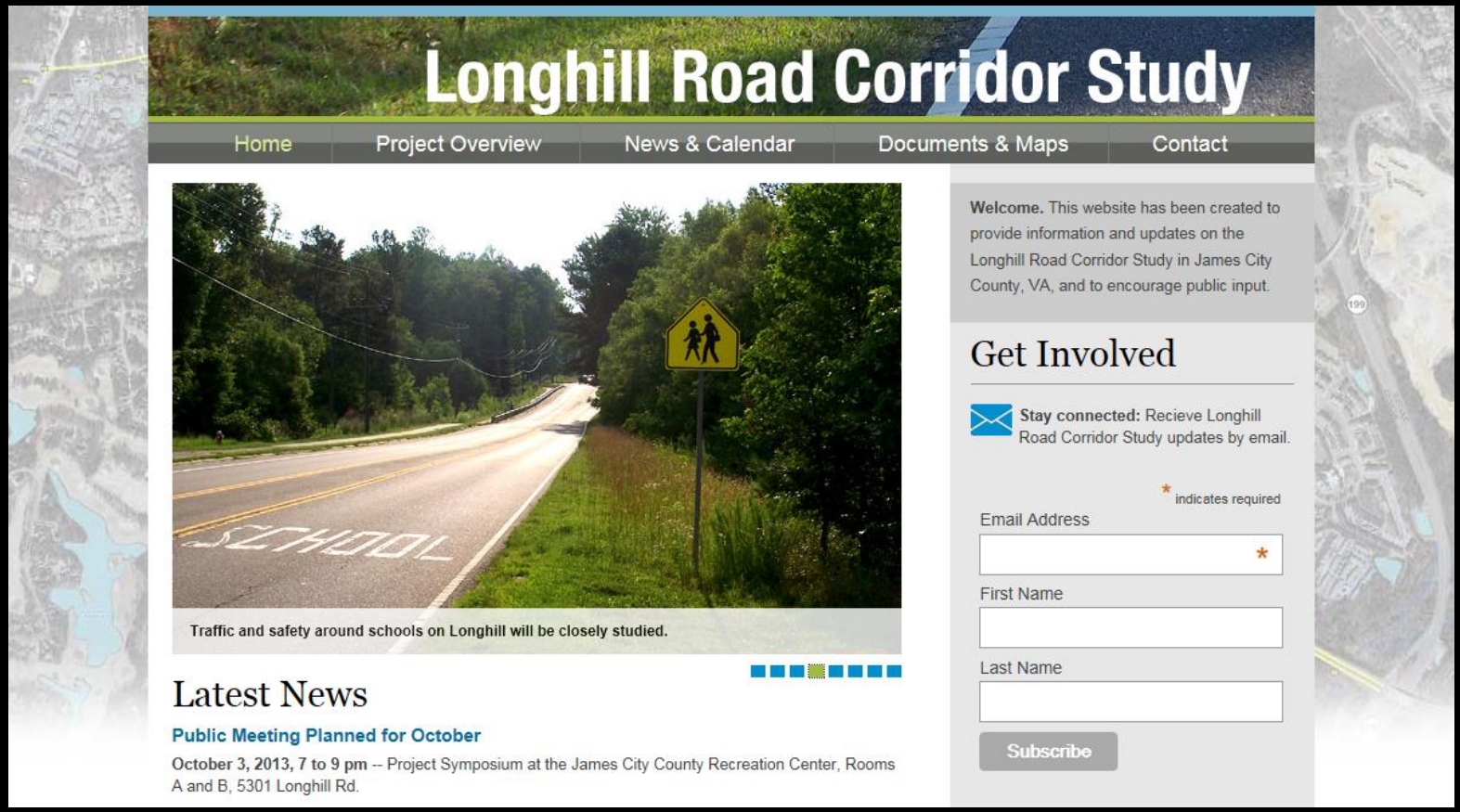
5) What are the corridor's greatest assets that you feel should be protected?

VDOT Virginia Department of Transportation

Public Involvement

- Project Website

  http://www.longhillroadcorridorstudy.com/



Public Workshop – November 21, 2013



A



D



C



D



D



D

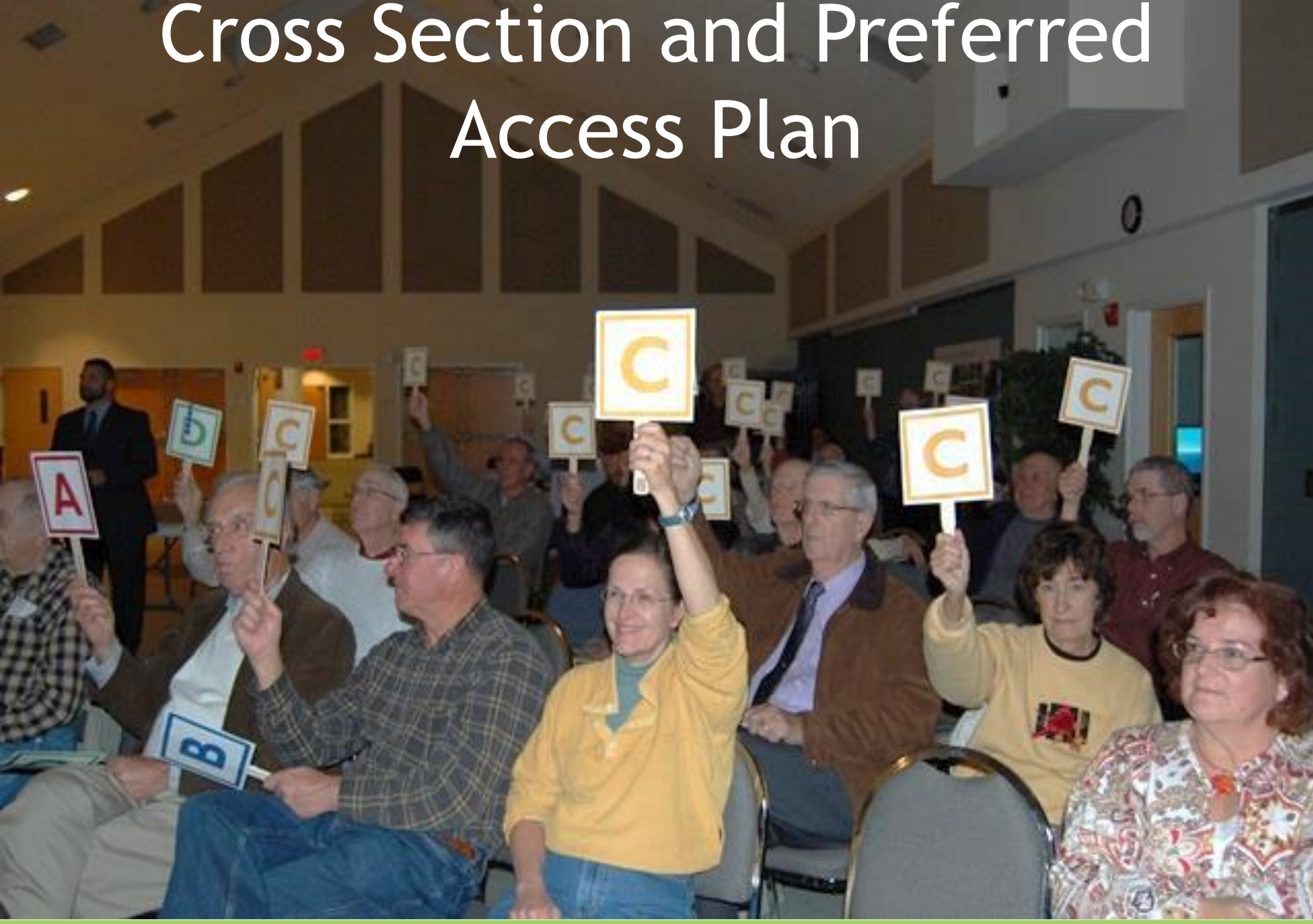


B





Cross Section and Preferred Access Plan



Public Workshop – February 19 & 20, 2013

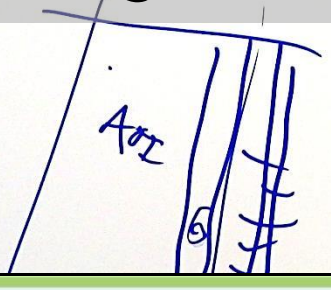


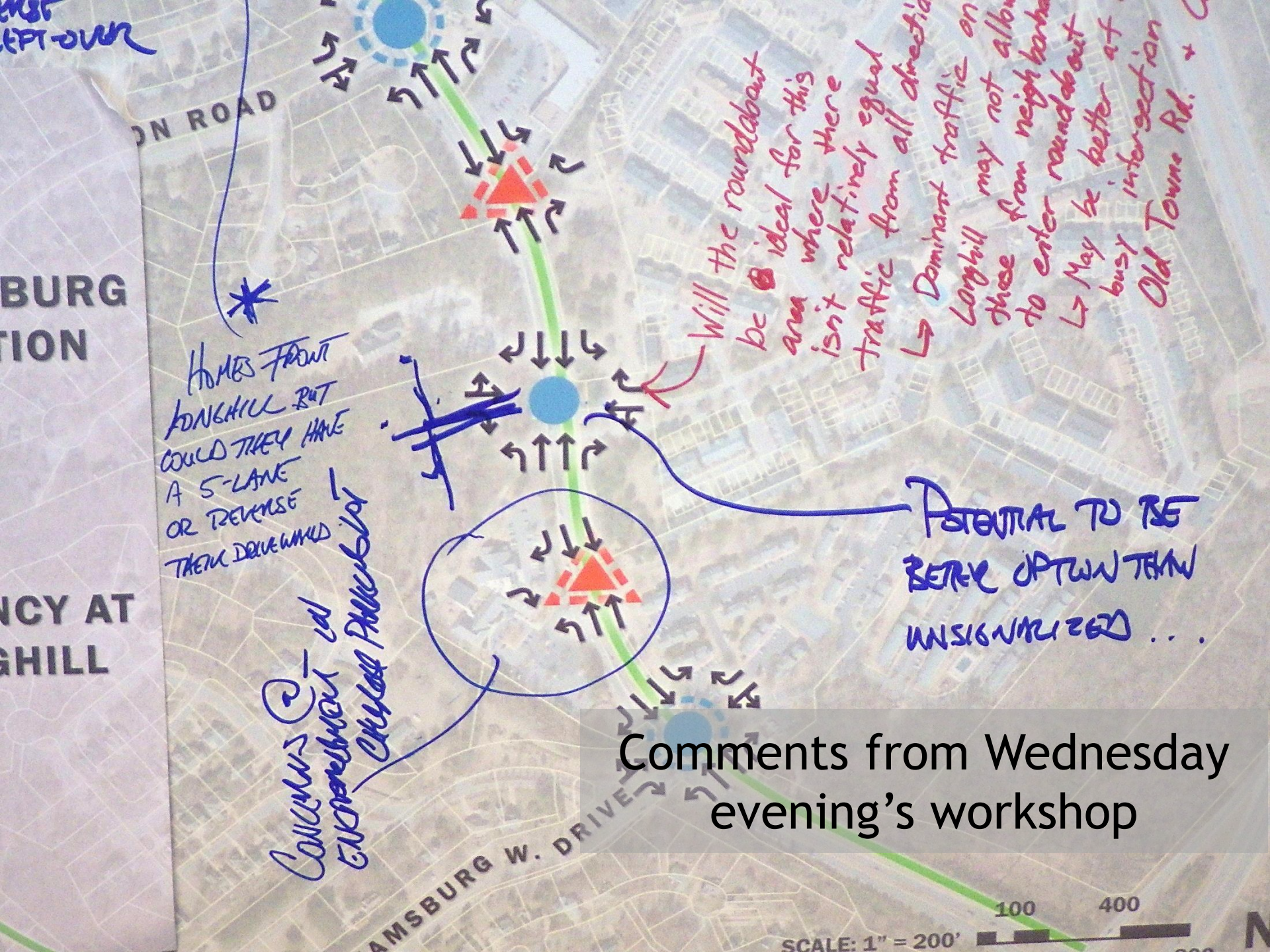
Comments from Wednesday evening's workshop



TYPICAL 4 LANE CROSS SECTION

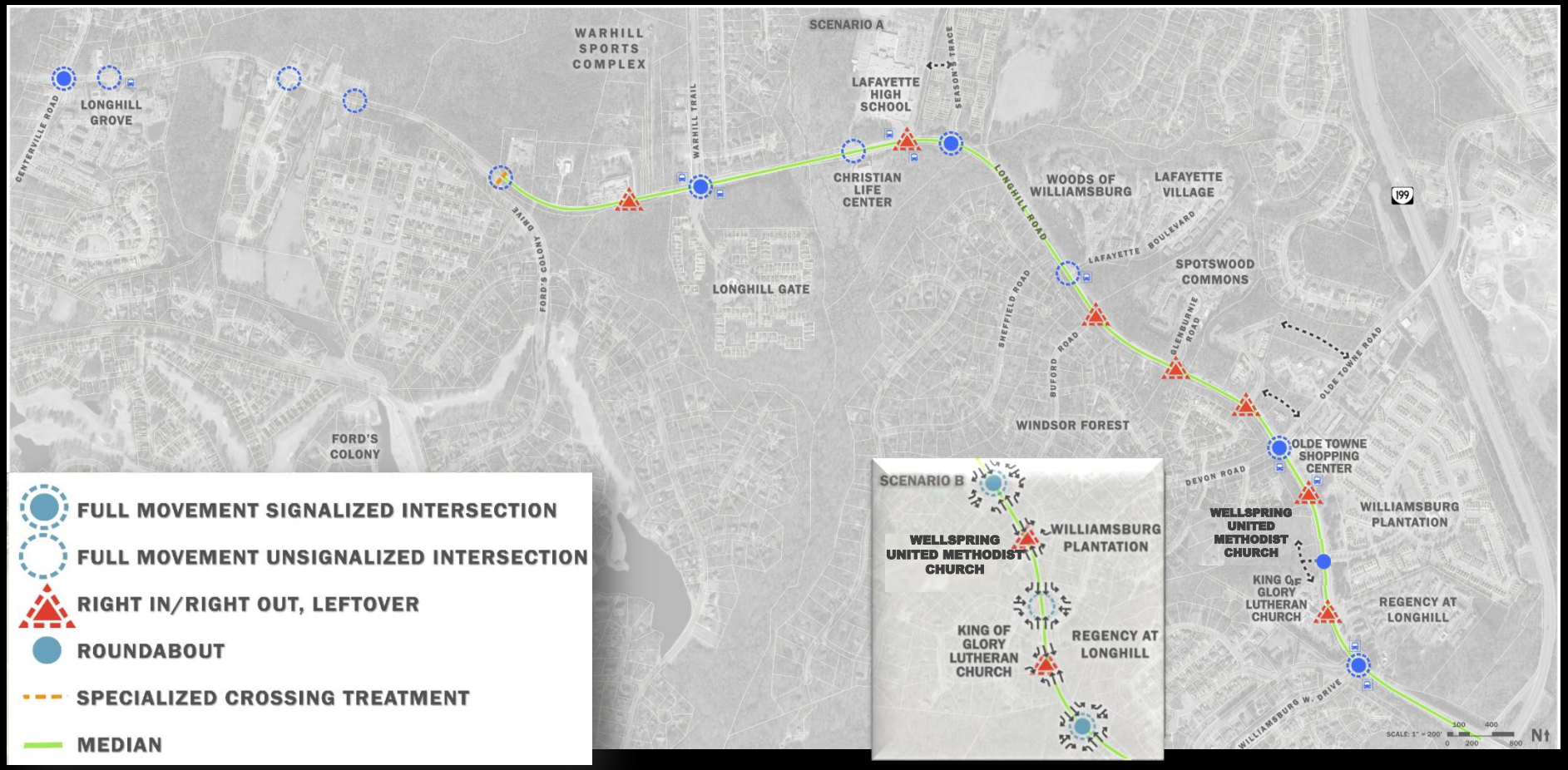
SS SECTION





Comments from Wednesday evening's workshop

Access Management Strategy



Access Management Techniques

- FULL MOVEMENT SIGNALIZED INTERSECTION
- FULL MOVEMENT UNSIGNALIZED INTERSECTION
- RIGHT IN/RIGHT OUT, LEFTOVER
- ROUNDABOUT
- SPECIALIZED CROSSING TREATMENT
- MEDIAN







Some Things We Heard…

Comment	Action Plan		
	Agree	Consider	Disagree
1. Provide roundabout at Centerville Rd / Longhill Rd			✓
2. Connection from Warhill Sports Complex to Longhill Road.		✓	
3. Install traffic signalization at Warhill Trail and Season's Trace before roadway widening.		✓	
4. Provide a roundabout at Season's Trace.			✓
5. Provide a full movement unsignalized intersection at Glenburnie Road.	✓		
6. Provide a roundabout at Williamsburg West Drive.			✓
7. Provide street lights along corridor.	✓		
8. Provide high visibility crosswalks.	✓		
9. Remove the sidewalk since a multi-use path is provided			✓
10. Modify shared bike lane (either remove or offer dedicated)		✓	

You told us what you liked and didn't like

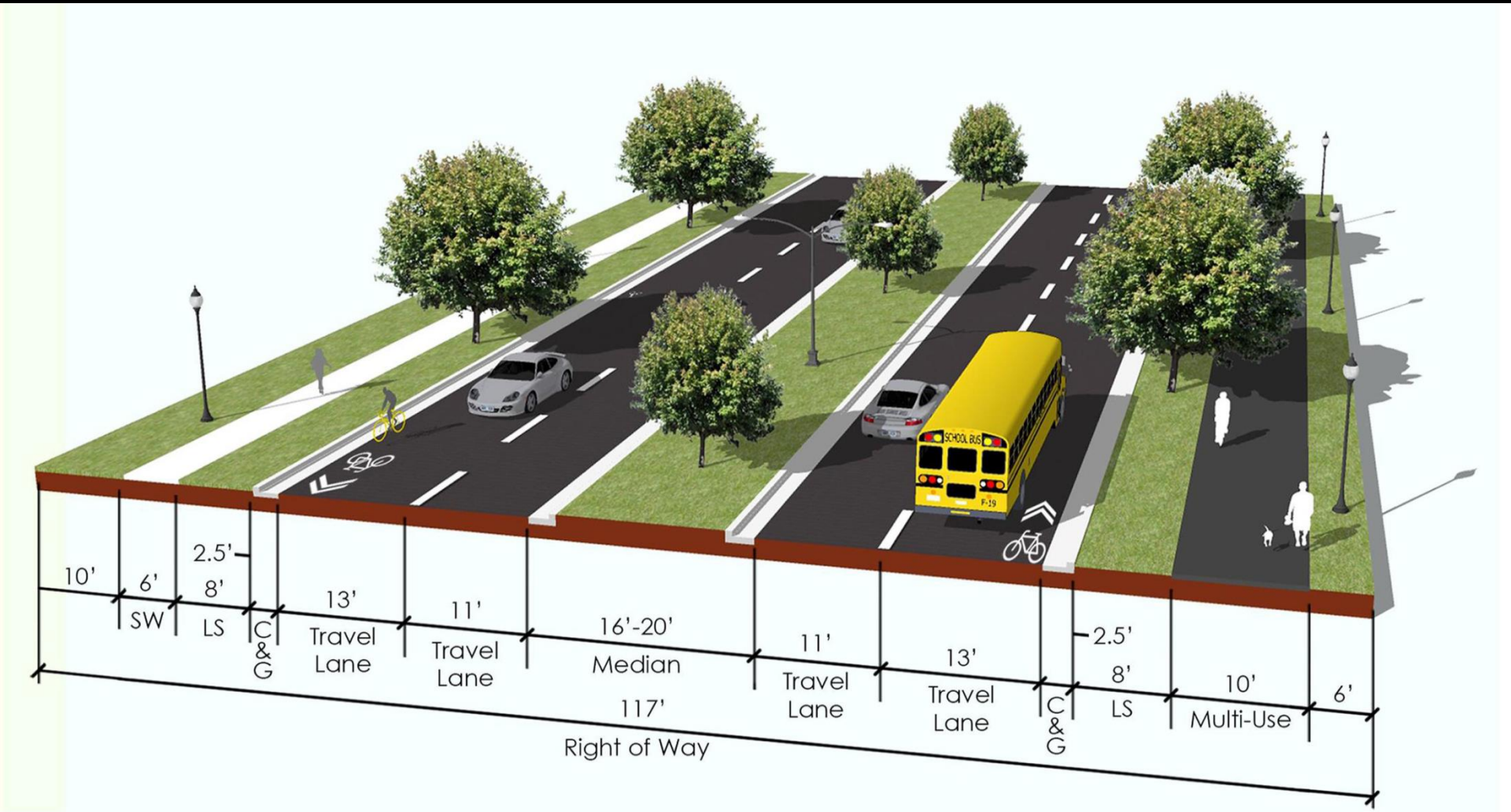




Recent Presentations

- Meetings
  - Technical Advisory Team (TAT) meeting
  - Project Advisory Committee (PAC) meeting
  - Policy Committee Briefing
  - King of Glory Lutheran Church field meeting
  - Williamsburg Montessori School field meeting
  - Season's Trace neighborhood meeting

Corridor Improvement Design Recommendations



Design Renderings – Sheet 1



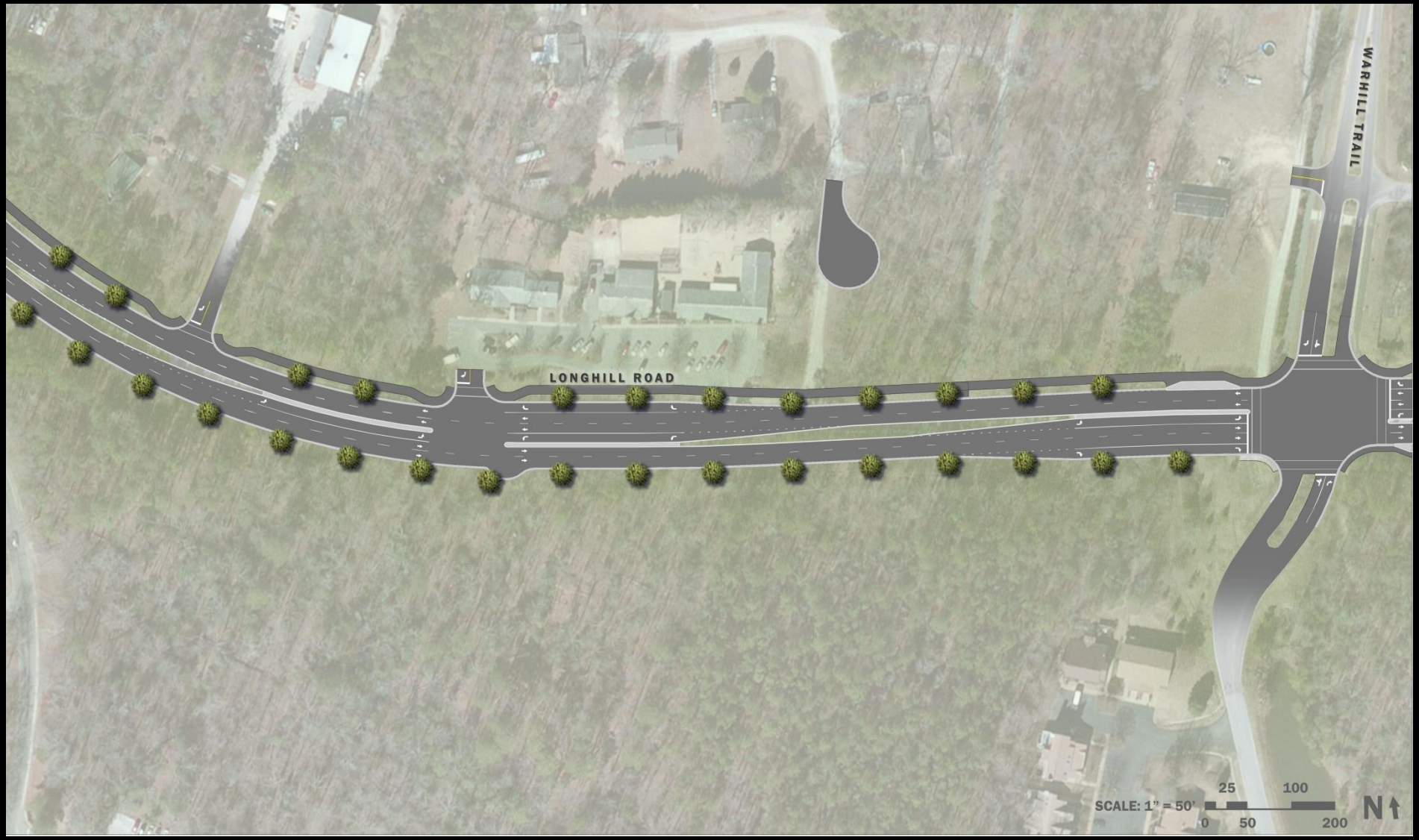
Design Renderings – Sheet 2



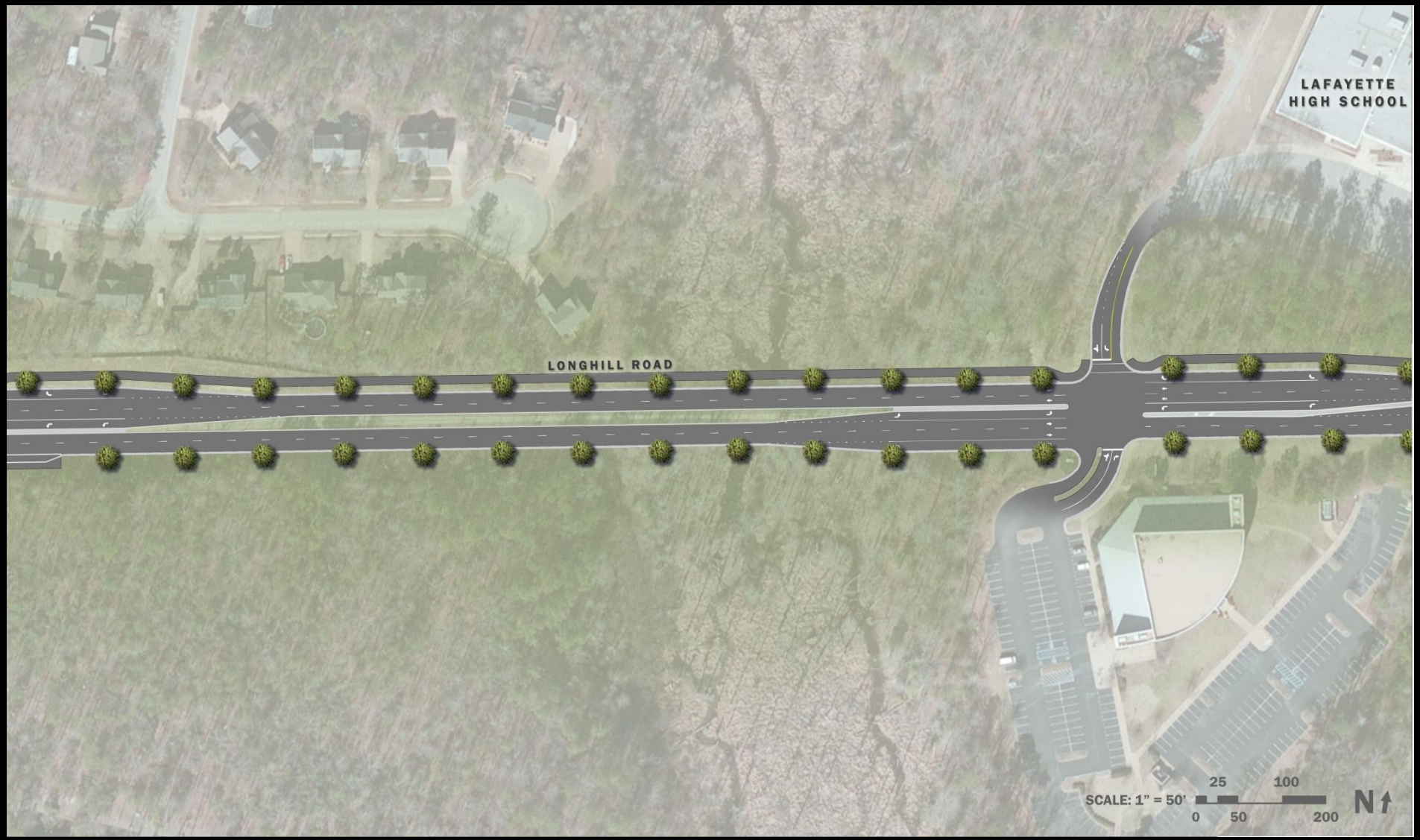
Design Renderings – Sheet 3



Design Renderings – Sheet 4



Design Renderings – Sheet 5



Design Renderings – Sheet 6



Design Renderings – Sheet 7



Design Renderings – Sheet 8



Design Renderings – Sheet 9



Design Renderings – Sheet 10



Future Build Arterial LOS

Eastbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Longhill Gate Road	42.2	A	38.3	A
Season's Trace	31.6	B	35.9	A
Old Towne Road	38.0	A	34.8	B
Williamsburg W. Drive/Lane Place Drive	20.9	D	14.0	E
Humelsine Parkway (Route 199) EB Off/On-Ramp	26.9	C	30.6	B
Humelsine Parkway (Route 199) WB Off/On-Ramp	17.9	D	13.3	E
Overall	**33.9**	**B**	**30.8**	**B**

Westbound Longhill Road				
Cross Street	AM		PM	
	ATS (mph)	LOS	ATS (mph)	LOS
Humelsine Parkway (Route 199) WB Off/On-Ramp	29.9	B	22.1	C
Humelsine Parkway (Route 199) EB Off/On-Ramp	19.6	D	13.8	E
Williamsburg W. Drive/Lane Place Drive	30.3	B	20.6	D
Olde Towne Road	17.6	D	15.1	E
Season's Trace	37.8	A	40.0	A
Warhill Trail	34.6	B	27.6	C
Centerville Road	33.3	B	32.1	B
Overall	**31.3**	**B**	**27.4**	**C**

LOS A

LOS F



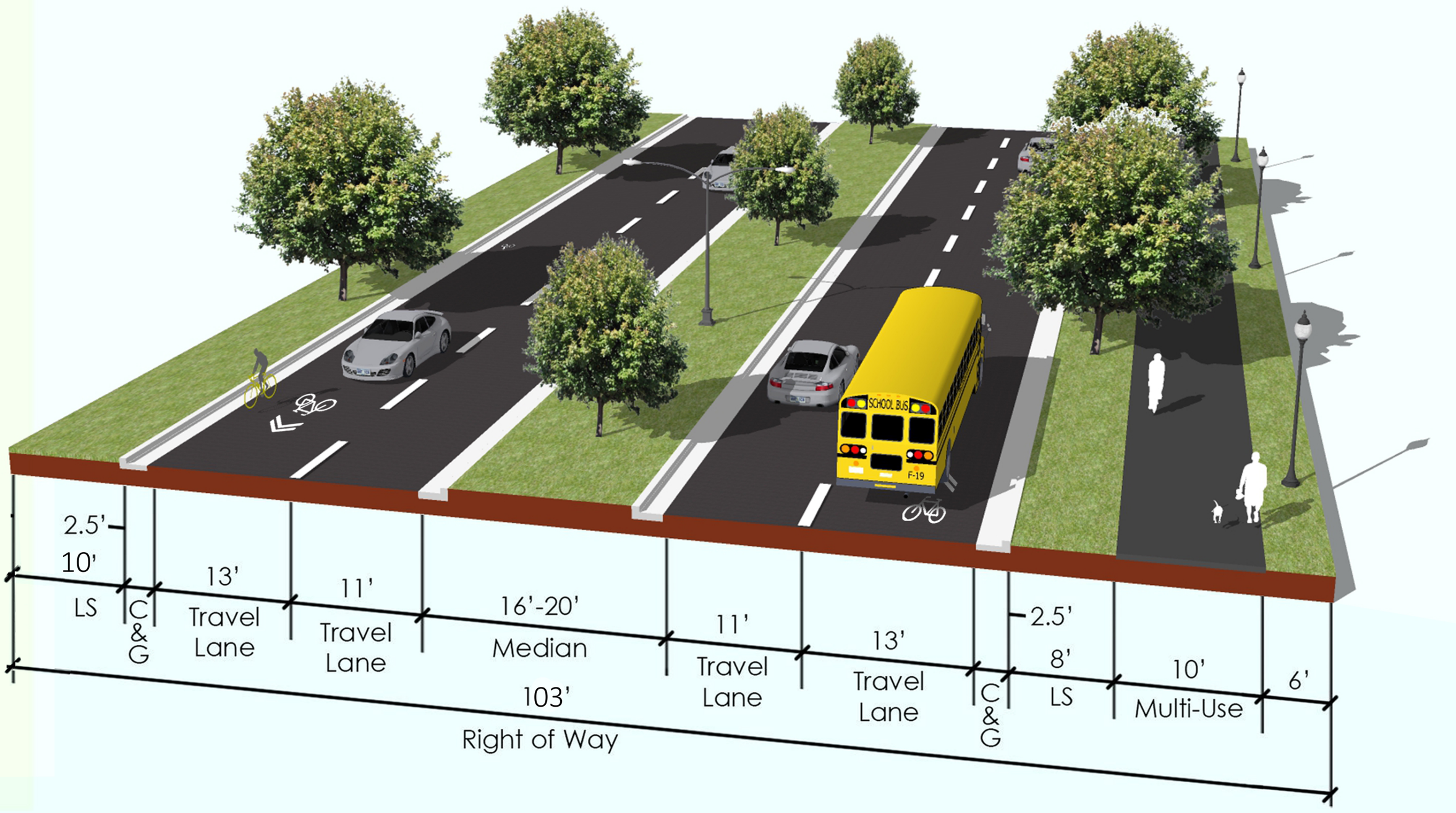






Next Steps

- Post Public Workshop PAC Meeting
- Prepare DRAFT FINAL Report
- FINAL Report
- Additional project update presentations are planned for both Policy Committee and Board of Supervisors
- Approval of the study by the James City County Planning Commission
- Presentation and approval of the study by the James City County Board of Supervisors



TYPICAL 4 LANE CROSS SECTION



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

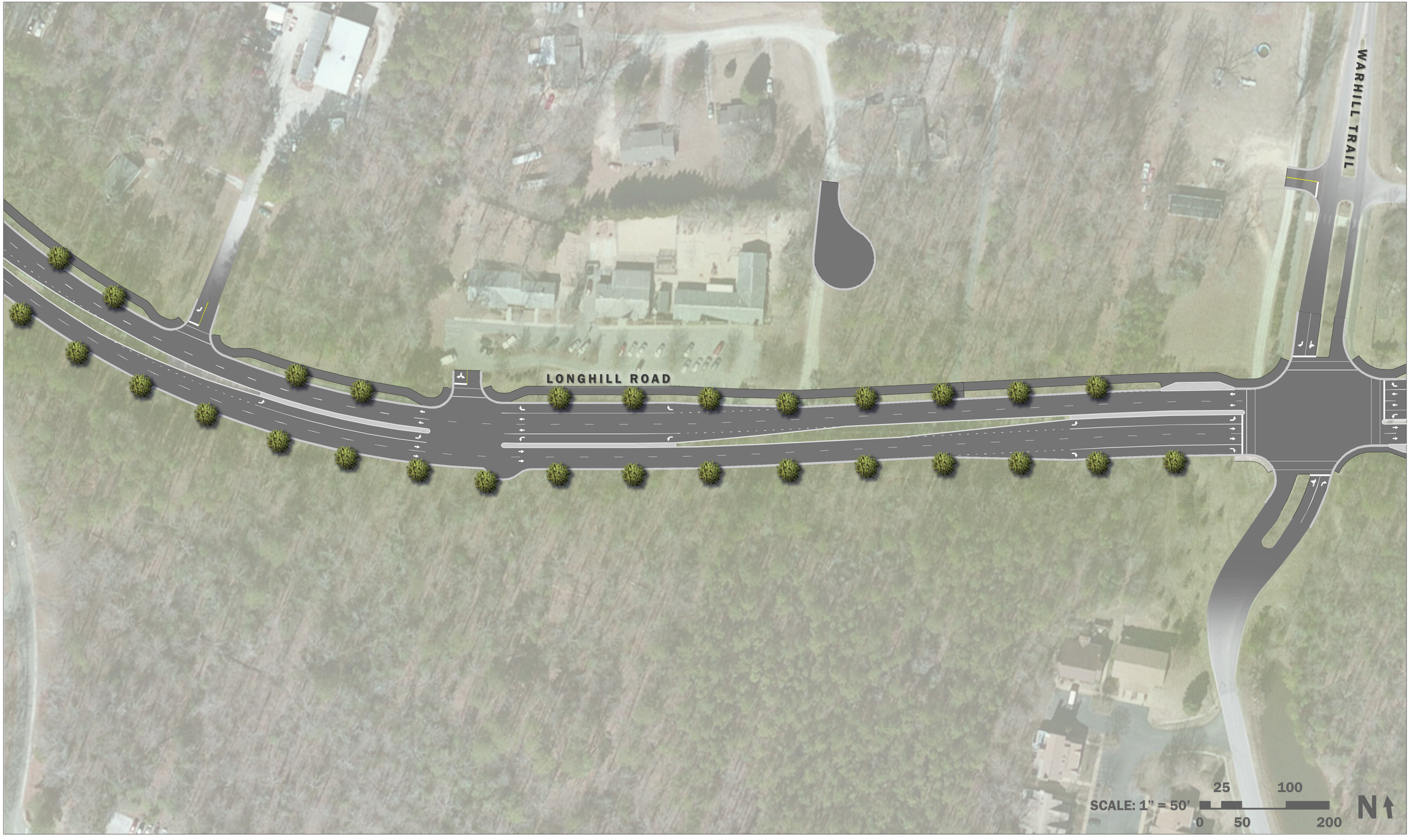
Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn



LONGHILL ROAD CORRIDOR - DESIGN CONCEPT

James City County VIRGINIA Jamestown 1607

Kimley»Horn

Collins, Carroll

Subject: FW: Longhill Road Study - public input item

From: Christopher Becke [mailto:chrisbecke@yahoo.com]
Sent: Monday, March 10, 2014 10:25 AM
To: Planning
Subject: Long term planning - County Roads

To Whom It May Concern:

I'd like to request that the Planning Division take into consideration additional through-roads in James City County.

As the Longhill Road Corridor study/project moves along, it appears to be addressing symptoms of congestion without addressing some of the root causes. Unlike other municipalities, where all roads lead everywhere, and single-entrance neighborhoods are rare (take a look at a map of Denver), we live in an area where many areas are dead-ends and/or do not allow through traffic, thus forcing congestion on the limited roads that do connect. We have large swaths of land and both natural and man-made barriers that limit access and crossing from one area to another such that it takes an increasingly long time to get anywhere in the Williamsburg area from point A to point B.

Some of the barriers are natural wetlands, reservoirs and rivers, but others are gated communities (Ford's Colony, Colonial Heritage) or infrastructure with limited crossing (railroad tracks, Route 64, 199).

If we do not pursue additional connectors in addition to the improvements we're considering, then problems such as those encountered on Longhill will not be abated and will make this area similar to Kissimee, Florida, or Pigeon Forge, TN, where the limited connectors are impassible during rush hour.

I would propose that the Planning Division look at two things:

First, take into consideration that any new major housing developments provide pass-through between major connectors. It would be nice if there were another few publicly available routes through our gated communities also, but I understand the political and legal difficulties with this.

Second, consider some additional through-roads and crossings. More roads crossing the railroad tracks between Richmond Road and Mooretown (in cooperation with the City of Williamsburg), additional crossings of 199, and perhaps some new roads through undeveloped areas, perhaps from Longhill to Centerville through the area west of Wisk, ,for example.

I'm just hoping someone is looking at creative solutions to our long-term regional transportation needs to make it easier to get around this area.

Thanks.

Christopher Becke
chrisbecke@yahoo.com

Collins, Carroll

Subject: FW: Longhill Road Study - public input item

From: Christopher Becke [mailto:chrisbecke@yahoo.com]
Sent: Monday, March 10, 2014 10:25 AM
To: Planning
Subject: Long term planning - County Roads

To Whom It May Concern:

I'd like to request that the Planning Division take into consideration additional through-roads in James City County.

As the Longhill Road Corridor study/project moves along, it appears to be addressing symptoms of congestion without addressing some of the root causes. Unlike other municipalities, where all roads lead everywhere, and single-entrance neighborhoods are rare (take a look at a map of Denver), we live in an area where many areas are dead-ends and/or do not allow through traffic, thus forcing congestion on the limited roads that do connect. We have large swaths of land and both natural and man-made barriers that limit access and crossing from one area to another such that it takes an increasingly long time to get anywhere in the Williamsburg area from point A to point B.

Some of the barriers are natural wetlands, reservoirs and rivers, but others are gated communities (Ford's Colony, Colonial Heritage) or infrastructure with limited crossing (railroad tracks, Route 64, 199).

If we do not pursue additional connectors in addition to the improvements we're considering, then problems such as those encountered on Longhill will not be abated and will make this area similar to Kissimee, Florida, or Pigeon Forge, TN, where the limited connectors are impassible during rush hour.

I would propose that the Planning Division look at two things:

First, take into consideration that any new major housing developments provide pass-through between major connectors. It would be nice if there were another few publicly available routes through our gated communities also, but I understand the political and legal difficulties with this.

Second, consider some additional through-roads and crossings. More roads crossing the railroad tracks between Richmond Road and Mooretown (in cooperation with the City of Williamsburg), additional crossings of 199, and perhaps some new roads through undeveloped areas, perhaps from Longhill to Centerville through the area west of Wisk, ,for example.

I'm just hoping someone is looking at creative solutions to our long-term regional transportation needs to make it easier to get around this area.

Thanks.

Christopher Becke
chrisbecke@yahoo.com

Collins, Carroll

From: LT <ltwoman20@aol.com>
Sent: Thursday, September 19, 2013 4:50 AM
To: LonghillStudy
Subject: Support for bike friendly options on Longhill Road

I can't attend the meeting and saw your flyers at the JCC Recreation Center. I reside on Ironbound Rd. near The Virginia Gazette and use portions of Longhill road daily. I am also an avid bicyclist and would like to see Longhill become bike-friendly. I would use it more often to link to WISK and Freedom Park. PLEASE! Pretty please...

Laura Townsend

Collins, Carroll

Subject: FW: Longhill - Public Comments to Add to the Collection
Attachments: Longhill Road Study; 199 access road?

From: Renee Dallman
Sent: Friday, October 18, 2013 9:14 AM
To: Ellen Cook
Subject: Facebook Comments

Oct. 3 Post



Like · Comment · Share 2

4 people like this. Top Comments

Write a comment...

Runjal Patel i think you should also do a study about south boundary street and Jamtown road (it one dangerous Intersection)
Like · Reply · October 3 at 11:36am

James City County Runjal Patel - That intersection is in the City and I will forward your suggestion on to them. Thanks!
Like · October 3 at 11:53am

Runjal Patel Thanks
Like · October 3 at 11:58am

Christy Almeda i second a jamestown rd/ 199 study!!!
Like · 1 · October 3 at 6:40pm

Write a reply...

Dupree Foster So in this picture, is the Dodge Ram running the Ford Focus off of the road or is the Ford Focus trying to illegally pass on the shoulder?? Because status quo shows that this portion of Longhill Rd is not wide enough for 2 vehicles traveling in the same direction to pass one another.
Like · Reply · 1 · October 3 at 1:01pm via mobile

692 people saw this post Boost Post

Sept. 18 Post


James City County
September 18
Do you drive, walk or bike along Longhill Road? We are conducting a study of the Longhill Road corridor to look at traffic congestion and safety, pedestrian and bicycle accommodations, transit operations and more.
Come out to a meeting on Oct. 3 from 7-9 p.m. to learn about the study, give input and help create a vision for the corridor's future. The meeting will be held at the James City County Recreation Center, Rooms A and B, 5301 Longhill Rd.
For more information, visit www.longhillroadcorridorstudy.com.


Like · Comment · Share
5 people like this.
Top Comments
Write a comment...
Jen Vasco There needs to be a light at the Warhill Sports Complex/ Wac, way too many people coming in and going out at one time
Like · Reply · 4 · September 18 at 9:36am via mobile
James City County Jen Vasco - I will forward your comment along. Thanks!
Like · 1 · September 18 at 9:38am
Write a reply...
LeAnne Deal Boyer It would be great to allow vehicles to take Opportunity Way off of Centerville to get to the WISC.
Like · Reply · September 18 at 4:10pm


James City County LeAnne Deal Boyer - I will forward your comment along - thanks!
Like · 1 · September 18 at 4:20pm
Write a reply...
Lori Ehrsam I agree with the others- I am always go into the Wac and its a bear. An entrance from centerville would be great! Or a light.
Like · Reply · September 18 at 11:04am via mobile
James City County Lori Ehrsam - Thanks! I am forwarding your comment along.
Like · September 18 at 11:07am
Write a reply...
Kara Shy Neumann I would hate to have a light there (Longhill at WISC/Longhill Gate), but there have been multiple times that I have nearly been hit head-on by people trying to pull into WISC while I'm turning into Longhill Gate, where I live. There needs to be a way for people to access WISC from Centerville Road and a lot of the problems on Longhill will be greatly diminished!
Like · Reply · September 18 at 9:46am via mobile
James City County Kara Shy Neumann - Thank you for your comment! I will forward it along.
Like · 1 · September 18 at 9:48am
Write a reply...
Car-free in Williamsburg This is a critical corridor for all modes of transportation and we will do our best to get the word out.
Like · Reply · September 18 at 9:44pm
Write a comment...

Collins, Carroll

From: JmanCW@aol.com
Sent: Tuesday, October 01, 2013 8:22 PM
To: LonghillStudy
Subject: Longhill Road Study

We are residents of Longhill Gate. We feel that expanding Longhill Road would be a very expensive and long-lasting project. We feel that a much less expensive but beneficial project would be to install a traffic activated light at the entrance to the Warhill Sports Complex. This would allow people to safely walk or bike to the sports complex which is often difficult today. On weekends when there are activities/games it is very dangerous leaving our subdivision with all the traffic entering and leaving the sports complex. It is an accident waiting to happen. On week days it is often difficult to cross Longhill Road from our subdivision because of the speeding traffic. A traffic signal for pedestrian crossing would be beneficial for walkers/bikers.

James and Nancy Jackson
8313 Barons Court

Collins, Carroll

Subject: FW: Longhill Public Input - comment from Wellspring Church

---

From: Sharon Buckley [mailto:buckleysk@cox.net]
Sent: Tuesday, March 11, 2014 6:37 PM
To: Ellen Cook
Subject: Re: Longhill Road Corridor Study

Ellen, Thanks very much for your response to my E-mail. I appreciate Carroll's efforts to accommodate Wellspring, KOG and the Wmsbg Plantation concerns in a very tight environment. My thought's are to move the Roundabout about 20 - 30 more feet in the direction of the Old Town intersection and split the shared Wellspring/KOG entrance nearer the Wellspring/KOG property line. This would shift the Wmsbg Plantation entrance from being directly opposite the Roundabout. Also moving the Roundabout further into the Wmsbg Plantation property might further ease our concerns. Again thanks for keeping me in the planning loop.

Bob Buckley

On Mar 11, 2014, at 3:52 PM, Ellen Cook <Ellen.Cook@jamescitycountyva.gov> wrote:

Mr. Buckley,

Thanks very much for your email! Kimley-Horn has indeed been working on some thoughts for this area, and we met with KOG folks last week in the field to see the topography of their property and look more closely at their expansion plans. Carroll and I discussed checking in with you next about the revisions, so we're definitely of the same mind as you in wanting to keep both churches up to speed. Yesterday Carroll sent KOG folks the email below, along with the attached drawing. We welcome your comments and thoughts – Carroll and I weren't sure if KOG might also be contacting you separately, and if they do, obviously please feel free to discuss the shared access issue with them. Another opportunity to have a group discussion will be at the next PAC meeting (which I'll be sending an email about shortly).

Again, many thanks for checking in – take care,

Ellen Cook
Senior Planner II

<image004.jpg>

Development Management
101-A Mounts Bay Road
Williamsburg, VA 23185
Direct Dial: 757-253-6693
Front Desk: 757-253-6685
jamescitycountyva.gov

From: Carroll.Collins@kimley-horn.com [mailto:Carroll.Collins@kimley-horn.com]
Sent: Monday, March 10, 2014 12:21 PM
To: jimbaldridge@cox.net; mconnolly@landtechresources.com; AIA@melgrewe.com
Cc: Ellen Cook
Subject: Roundabout Modification at KOG/Williamsburg Plantation Intersection

Jim, Matt, and Mel –

Please find attached a modified graphic reflecting the roundabout at the Longhill Road/Williamsburg Plantation/KOG Expansion driveway being moved to the east/northeast approximately 20 feet. This lessens the impact on the proposed KOG Building Expansion and Parking Area. This also begins to lessen the impact on the existing parking area to the south. However, another idea I have based on weekday traffic volumes along Longhill Road and traffic accessing the KOG site during the morning and evening peak periods, we probably don't need the exclusive right-turn lane into the site. Removing that from the intersection at that site driveway will also help minimize the impact to the existing parking area an allow more of the buffer between the road and the site to remain in place. Remember these are DRAFT concepts at this time and they are not set in stone.

Review at your convenience and let me know if you have any additional questions. If you have had any discussions with the representatives from Wellspring United Methodist regarding the shared access concept let Ellen Cook or myself know how that is going and if it is still a realistic option. I've also discussed with Ellen some other access ideas that would result in maintaining separate access points to Longhill Road for the two churches. We may end up proposing the two scenarios/options in the report understanding that the shared access negotiations may take longer and would not be resolved before the planning study is completed. At least that way there is a plan B if shared access isn't an option.

Thanks again for meeting in the field last week. It is always good to have engaged citizens involved in the process and it is always good to actually get to walk properties to better understand the lay of the land.

Regards,

Carroll

Carroll E. Collins, AICP
<image001.png>
Suite 500
4500 Main Street
Virginia Beach, VA 23462
TEL: 757-213-8600
DIR: 757-213-8616
CELL: 757-288-3116
FAX: 757-213-8601
EMAIL: carroll.collins@kimley-horn.com

-----Original Message-----
From: Sharon Buckley [mailto:buckleysk@cox.net]
Sent: Friday, March 07, 2014 9:00 AM
To: Ellen Cook
Subject: Longhill Road Corridor Study

Hi, Ellen

I thought the Contractor did a great job in their last Public meeting. During the presentation I was aware of the concerns of the Reps from King of Glory Lutheran whose property abuts the Wellspring United Methodist property. I am aware that their concern focused on the Roundabout location that affected their expansion plans. I believe they were going to send the Contractor a CAD version of their plan in order that the location of the Roundabout proposed could be modified. As this would probably have an impact on Wellspring's entrance/exit path, I would appreciate being informed of any adjustment being proposed for the siting of the Roundabout. At the meeting I inked in a shift of the Roundabout into the Timeshare property, but I am not opposed to moving the Roundabout further up Longhill toward the Oldtown intersection. Perhaps making the Joint entrance nearer Wellspring's present entrance/exit. I would appreciate receiving any information that is available on the current scheme of the Contractor for this segment of the Study.

Bob Buckley, Stakeholder for Wellspring United Methodist Church

<KOG_Intersection_DRAFT_Sheet_9_10MAR14.pdf>

Collins, Carroll

From: Mike Kordosky <mike.kordosky@gmail.com>
Sent: Thursday, September 19, 2013 12:30 PM
To: LonghillStudy
Subject: Comments on the study
Attachments: intersection.png

Hi,

I am a homeowner in the Windsor Forest neighborhood and am happy to see that JCC has commissioned a study of the Longhill corridor. I will probably be out of town for the October 3 meeting but have some thoughts and comments which I'll share in this email:

(0) There is a safety problem at the intersection of Longhill and Olde Towne Rd. Please refer to the attached picture. The issue is twofold: drivers traveling south on Longhill routinely stop just after the intersection to attempt to make a left turn into the 7-11 on the corner. This is a turn in traffic, across a double yellow, through a turn lane, a regular lane, and another turn lane. It is also an abrupt stop just after an intersection, when other drivers are accelerating forward and not expecting it. I don't know the statistics of that intersection but I've had a close call there and seen another. It's quite dangerous. Also, a similar problem occurs with customers leaving 7-11 to travel south on Longhill. It's very common to see a car pull out of the store, find it's way through stopped traffic (people let them cross in front), block access to lanes, then turn left to go south on Longhill. Often by that time the light has gone green, the turning driver is under pressure to get moving, and cars are coming south on Longhill. Even worse, sometimes the turning car is "hidden" behind cars in the northbound turn lane. It's dangerous and there is no reason for it.

What to do? Well, more enforcement could help. But, I think there is a simpler solution: put up pylons on the double yellow to block turns. The 7-11 might object, but people going south can still get to their store. They just have to make a protected left on Olde Towne and then a right into the store. People leaving to go south also just turn on Olde Towne and then again onto Longhill. That's what I do, it's not such a pain, and it doesn't lose them any of my business.

(1) Longhill carries a pretty high volume of traffic but I don't think it's too high. I can routinely get out onto it from my neighborhood in just a minute or two. This is going right and left from Buford or Sheffield. There are no traffic lights there.

(2) North of 199 it does get congested for about 30 minutes during the morning and evening rush. But, I don't think this is all that bad. I don't think we need a road widening to add more lanes. Instead, we might try to work on better synchronizing the lights between the 199 overpass and taking other "tuning" steps. For example, customizing red and green durations for those times of the day. I'd be interested to know how much of that has already been done and what the results have been.

(3) I think drivers go too fast along the stretch of Longhill near the Season's Trace neighborhood and Lafayette HS. The road is curvy there, not much shoulder, multiple turn lanes, and there are often teenage pedestrians. The speed limit is 35. Consider a reduction and some road modifications to slow people down. Perhaps rumble strips or a painted on narrowing?

(4) This may be out of scope: The southbound intersection of De Pue (aka Longhill) and Ironbound has a green-arrow-only left turn. I don't think it's needed. Sitting in that turn lane you have a clear view of oncoming traffic for about half a mile. The speed limit is 35 MPH and there's usually very little traffic. Nothing obstructs a safe left turn on a regular green. Can we get rid of the red arrow?

(5) Some people may ask for a light at the outlet of Warhill park. I am a regular, multi-time per week, user. I know it can be a bit congested when kid's ball games are ending, but the vast majority of the time it's fine. I don't believe that the inconvenience of occasional congestion is worth the inconvenience and expense of putting in a traffic light there.

(6) It would be nice to see the bus stops spruced up to move riders further from the side of the road and give them some shelter from the elements and cars whizzing by.

Thanks for the study.

Mike Kordosky

Collins, Carroll

From: Chris Lucas <astro_doc@yahoo.com>
Sent: Wednesday, April 30, 2014 11:44 PM
To: LonghillStudy
Cc: Lisa Lucas
Subject: Longhill Rd project LHS intersection

Dear Longhill Rd Study,
Congratulations on your excellent work so far. I much appreciate the informative emails & website. I regret that I've been unable to attend the meetings.

I've one major concern with the plan to date:
If you make the faculty/student exit from Lafayette High School right turn only, where do you propose they turn around to head east on Longhill? U-turn at the school bus intersection?

A glance at the district map shows many if not most of the Lafayette district lies east of the school:
http://www.edline.net/files/_fXLtL_/d9c9d8a4263c53ed3745a49013852ec4/HS_Zone_Map.pdf
So many will likely want to head left/east out of the school towards Williamsburg (which can easily be observed now at the start & end of school) If you force them right/west, I predict they'll u-turn wherever, which will not improve either safety or traffic flow. Perhaps a light is a better solution? Or continued manned traffic direction at the end (& start?) of school?

Sorry for the late comment & if this has been addressed and I missed it.

Thanks,
Chris Lucas
103 Muirfield

Collins, Carroll

Subject: FW: Longhill Public Input Item

From: Parr McQueen [mailto:jpmatchbox@gmail.com]
Sent: Monday, March 03, 2014 9:40 PM
To: LonghillStudy
Subject: New Idea

Hello,
In regard to you road and thinking about the many intersections where the mup has to cross the road, I remembered this video. Please watch it. https://www.youtube.com/watch?v=FlApbxLz6pA

The 90 angle into the lane is a very good idea. This would be perfect to implement into the intersection where the mup switches sides of the road at fords colony entrance.

Looking forward to hearing your input
Thanks
Parr

Collins, Carroll

From: Drew Mulhare <dmulhare@fchoa.net>
Sent: Thursday, May 08, 2014 12:01 PM
To: LonghillStudy
Subject: Pedestrian crosswalk and light WW Drive

Ellen and Tammy,
The Fords Colony HOA has been contacted by a resident requesting the HOA to petition the County and VDOT to install a pedestrian crosswalk and pedestrian crossing signal across Longhill Rd at the intersection with Williamsburg West Drive. He daughter crossed the intersection, heading from Ford's Colony northeast toward the apartments, with the appropriate green light, and was struck by a vehicle. Our resident points out that, in addition to being a busy intersection, with access to a sidewalk, the County transit bus stops both east and westbound at this intersection.

Is a pedestrian crosswalk at this intersection planned in the corridor study? Likewise, is a pedestrian crossing light planned?

If not, can this email be used as a request on behalf of the FCHOA to request that this be appropriately considered/studied by the County and/or VDOT?

Thank you.

Best Always, Drew

Drew R. Mulhare, CMCA, LSM, PCAM, Broker (VA)
General Manager
Ford's Colony Homeowners Association
Office 757-258-4230, fax-4065, cell-757-503-5995
100 Manchester Drive
Williamsburg, VA 23188
dmulhare@fordscolony.com
"Make the Decision to be Happy"

This communication contains information from Realtec Community Services, Inc.(RCS), a service provider or agent for the Ford's Colony at Williamsburg Homeowners Association (FCHOA), and a number of unit owner subassociations, collectively "Clients") . Nothing in this communication is intended to operate as an electronic signature under applicable law and email transmission shall not be used to conclude or create any binding agreement on behalf of RCS or its Clients. The information contained herein may be confidential. Except for personal use by the intended recipient, or as expressly authorized by the sender, any person who receives this information is prohibited from disclosing, copying, distributing, and/or using it. If you have received this communication in error, please immediately delete it and all copies, and promptly notify the sender. Email transmission cannot be guaranteed to be secure or error-free. RCS and its Clients are not liable for any errors or omissions or viruses contained in this message which arise as a result of email transmission or any interpretation thereof. Any views or opinions contained herein are the views of the author and do not necessarily represent those of RCS or its Clients, unless otherwise noted.

Collins, Carroll

Subject: FW: To add to public comment collection

From: Reed NESTER [mailto:RNESTER@williamsburgva.gov]
Sent: Friday, February 21, 2014 10:18 AM
To: Ellen Cook
Subject: Longhill Road Project

Ellen,

I read with interest the reports on your last meeting. The WY Daily had two cross sections in their story. Is there a map that shows a plan view of the corridor, detailing where the multi-use path is located?

Is there a reason that bike lanes are not being proposed? The Regional Bikeway Plan, I believe, shows Longhill Road as both Bike Lanes and Multi-use Path. From my perspective as a cyclist that frequently rides this corridor, I think that a designated bike lane would be better than a shared lane with sharrows.

Reed

Reed T. Nester, AICP
Planning Director
City of Williamsburg
401 Lafayette Street
Williamsburg, Virginia 23185-3617
(757) 220-6133
rnester@williamsburgva.gov

City of Williamsburg
www.williamsburgva.gov
Facebook Twitter YouTube City411

Collins, Carroll

From: Joel Reeves <joel.e.reeves@gmail.com>
Sent: Friday, May 02, 2014 5:10 PM
To: LonghillStudy
Subject: Longhill Road study
Attachments: reeves comment.pdf

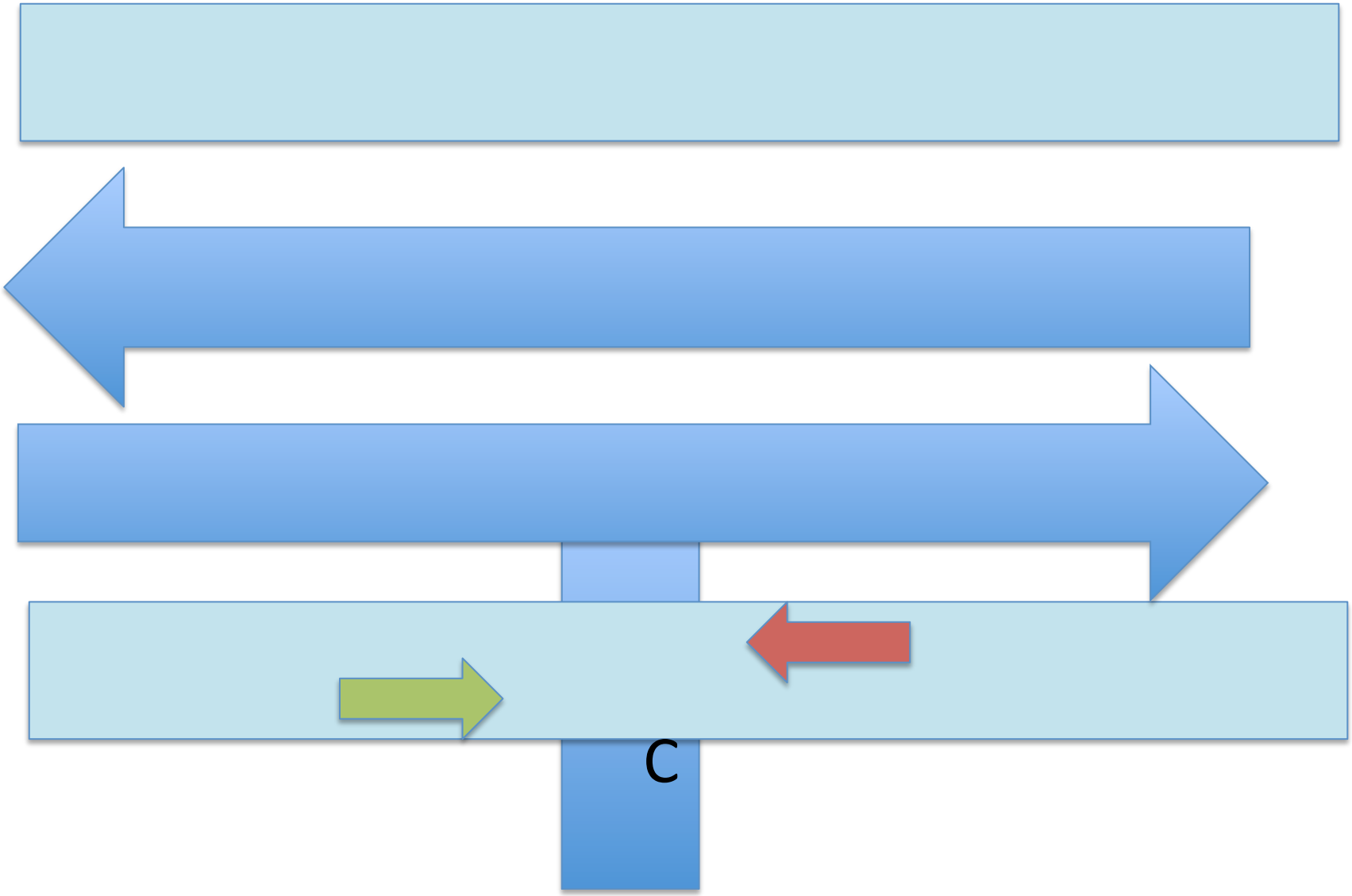
I have some comments on the redesign of Longhill Road

1. I see you are not proposing that the multi use path be positioned on the same side of the road. I think this is a mistake as cyclists, runners,walkers and other users will unnecessarily have to cross Longhill rather than staying along a consistent path. Cyclists hate to stop, requiring them to switch side requires they stop

2. I would urge positioning multi-use paths on BOTH sides of the road. One of the most dangerous situations for a cyclist on the path is approaching a cross street from the right, a car waiting on a cross street for traffic to clear before making a right turn, while waiting the driver of the car's total focus is traffic approaching from his left, he rarely looks to the right before making his right turn. It becomes very difficult to catch the attention of the driver, his head is turned away. As a cyclist, even on a separated multi-use path, I prefer to travel in the same direction as traffic on the main road to increase chances crossing traffic is aware of my presence. A car stopped waiting, will see you approaching from his left, you make eye contact and proceed to cross in front of him safely. (see attached diagram)

Joel Reeves
162 Fords Colony Dr
Williamsburg VA 23188
joel.e.reeves@gmail.com

Car waiting at point C, intends making a right turn onto Longhill. His entire focus is to his left, a cyclist (red) approaching from the cars right cant cross in front of the car safely with the driver of the cars total focus to his left. A cyclist (green) easily makes eye contact with the driver and crosses safely in front of him.



Collins, Carroll

Subject: FW: Public input - one additional item

From: Dr. Donald W Cherry [mailto:cherries@widomaker.com]
Sent: Tuesday, September 24, 2013 10:49 AM
To: Luke Vinciguerra
Subject: longhill

Luke,
The county needs to pull out the info I provided on "Road Diet" for Longhill. A two lane road with a center turn lane for it's entirety and bike lanes both sides would fit just fine. You could landscape the 3rd lane where turning lanes are not needed. Road Diet article says it will handle up to 22,000 vehicles per day including peak hours of traffic. This would be much less intrusive than four lanes .
Please submit to VDOT and planning my suggestion. Don

Collins, Carroll

From: Patricia A.Spayd <patricia.spayd@gmail.com>
Sent: Tuesday, September 17, 2013 11:42 AM
To: LonghillStudy
Subject: Longhill Road Study - and the Communal Slow Down of These Drivers

Hello Planning Divison folks,
My name is Patricia Spayd. I've lived here in Williamsburg or almost 4 years. I have some observations to share with you on Longhill Road - as well as some merge areas within Williamsburg.

First of all, I use Longhill Road a lot and used to live in Ford's Colony. The road traffic has that bad bottleneck when crossing the bridge over Rt 199. Traffic lines up in the left lane to get through the stop light at Williamsburg West. The right lane turns into the apartment complex which is a total waste of a through lane which could be directed to Longhill. What?? Yes, we in Virginia have no concept of "EVERY OThER CAR MERGE" . This is just not done here as it is in Pennsylvania and Europe. Seamless and efficient.

Personally, I get in that right lane and ride it past the Rt 199 bridge stoplight and merge left on the main Longhill before the SLOW RIDES in the middle (left Longhill through lane) lane decide to take their foot off the brake and drive. People are just exceptionally SLOW and tentative through here. They leave 5 or 6 car lengths between each vehicle, then putter along on turning from the Longhill Exit off Rt 199. There is usually a string of traffic at rush hour times, I get in the RIGHT lane at the light to make the left legal turn, and then have passed all the poke a-longs and have merged into the main traffic line. SLOW FOLKS just line up and sit there. Many are really old and just don't take the thought that there are plenty of cars lined to make the light and only X amount of time before the light changes and leaves drivers sitting through 2 light changes to get onto Longhill Road from Rt 199 exit.

Secondly, I go to Wellspring UMC and we are taking our lives in our hands to get in and out of our church as we have no turn lane and the traffic from the stop light at 7-ll is like running a gauntlet of rapid fire tourists in big SUVs! YIKES !!!!

On a third note: You have the same stupid lining up stunt on the entrance to Rt 199 WEST from Monticello. That dumb left arrow moves traffic over out of the main logical path and just pushes them into the other merge lane on the entrance ramp. Fourth: SAME thing with Monticello going West toward Centerville Road just past Monticello Marketplace. Wrong placing to arrows. WE NEED " EVERY OTHER CAR MERGE!" The same for the the Monticello going EAST through W&M forest. EVERY OTHER CAR MERGE. People just line up in one lane and leave the other lane vacant, which causes a back up because we need the EVERY OTHER CAR MERGE!" sign. Just like a zipper, when this happens traffic flows efficiently and quickly. I've driven in Europe many times, and also this is done in Pennsylvania - especially when there is road construction!! I notice that on Rt 199 there was a 3 mile backup in the left lane because the right lane was "EVENTUALLY" closed, but drivers hustled over in the left and leaving the right lane free and clear all that way up to the actual cones on the road at Rt 5. DUHHHEEEE. A mere sign "EVERY OTHER LANE MERGE" would be so easy to set up and solve this Communal Stallout affecting residents here in Williamsburg. I get so frustrated to see a high and dry empty lane and everyone is crammed and backed up in the other lane, then they are angry to see me fly past in the legal open lane and merge in a mile or two down the highway. Well, use both lanes," every other car merge!" ALIEN CONCEPT here.

Fifth: Yet another misplaced traffic arrow is on Longhill BYPASS heading toward Eastern State Hospital and in front of the big Gym and Community Center. The arrow to continue on Longhill Bypass pushes traffic to the left turn past the Mews Apt complex. This conflcts with the left turn arrow to go behind the gym. I stay to the far right to avoid the cars turning left, people seem to be confused to go left, then there is the left turn - but to go straight after dodging left is bizarre. Stay right and avoid left turning cars. Amazing.

Well - that is my experience here. Lots of misplaced arrows and lots of missing "MERGE EVERY OTHER CAR" - 4 words....
Kind regards,

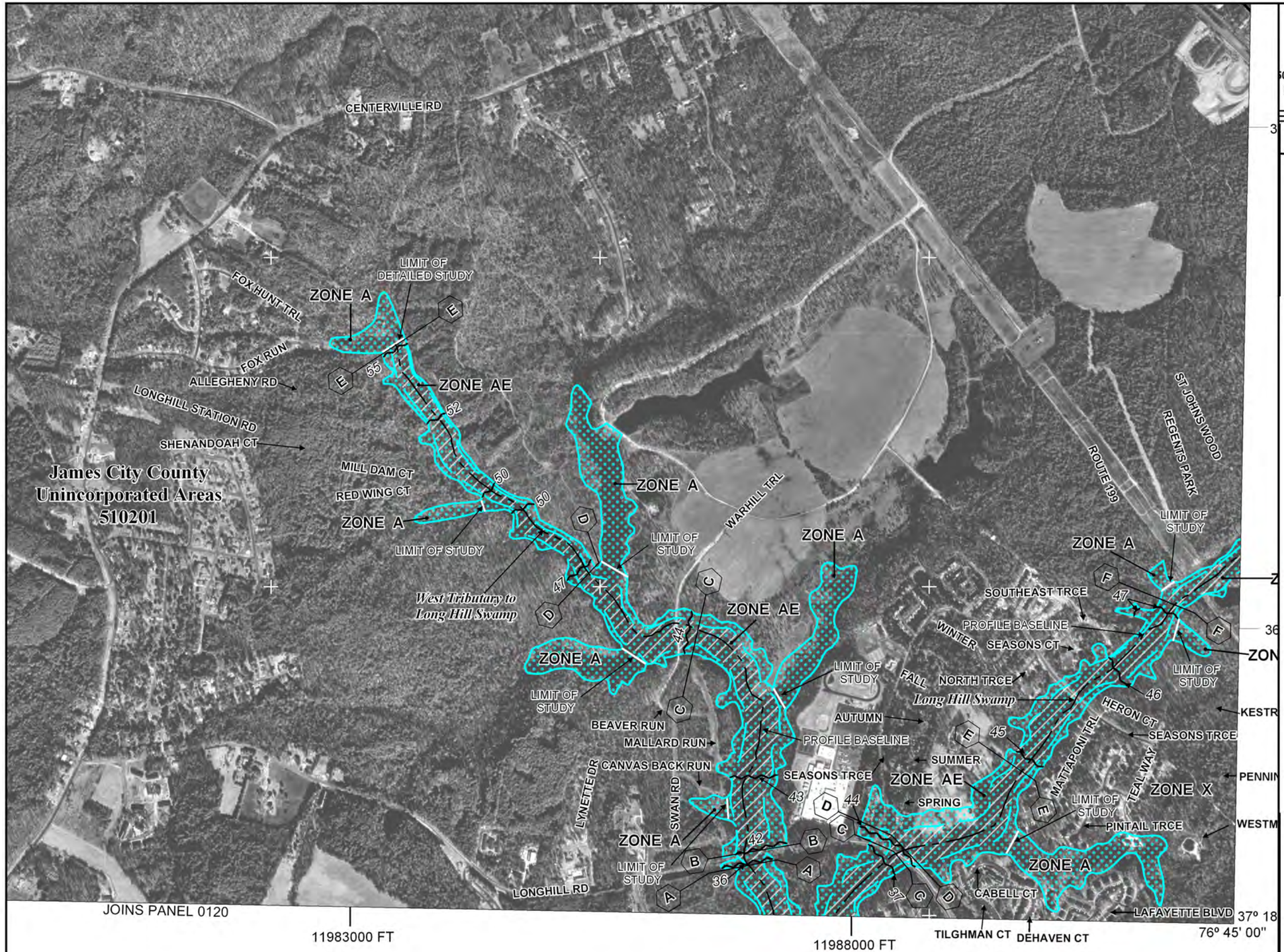
Patricia Spayd
757-903-2368

Appendix C

Environmental Screening

Federal Emergency Management Agency (FEMA)

Flood Insurance Rate Maps (FIRMs)



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110C

FIRM

FLOOD INSURANCE RATE MAP

JAMES CITY COUNTY, VIRGINIA

AND INCORPORATED AREAS

PANEL 110 OF 240

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JAMES CITY COUNTY	510201	0110	C

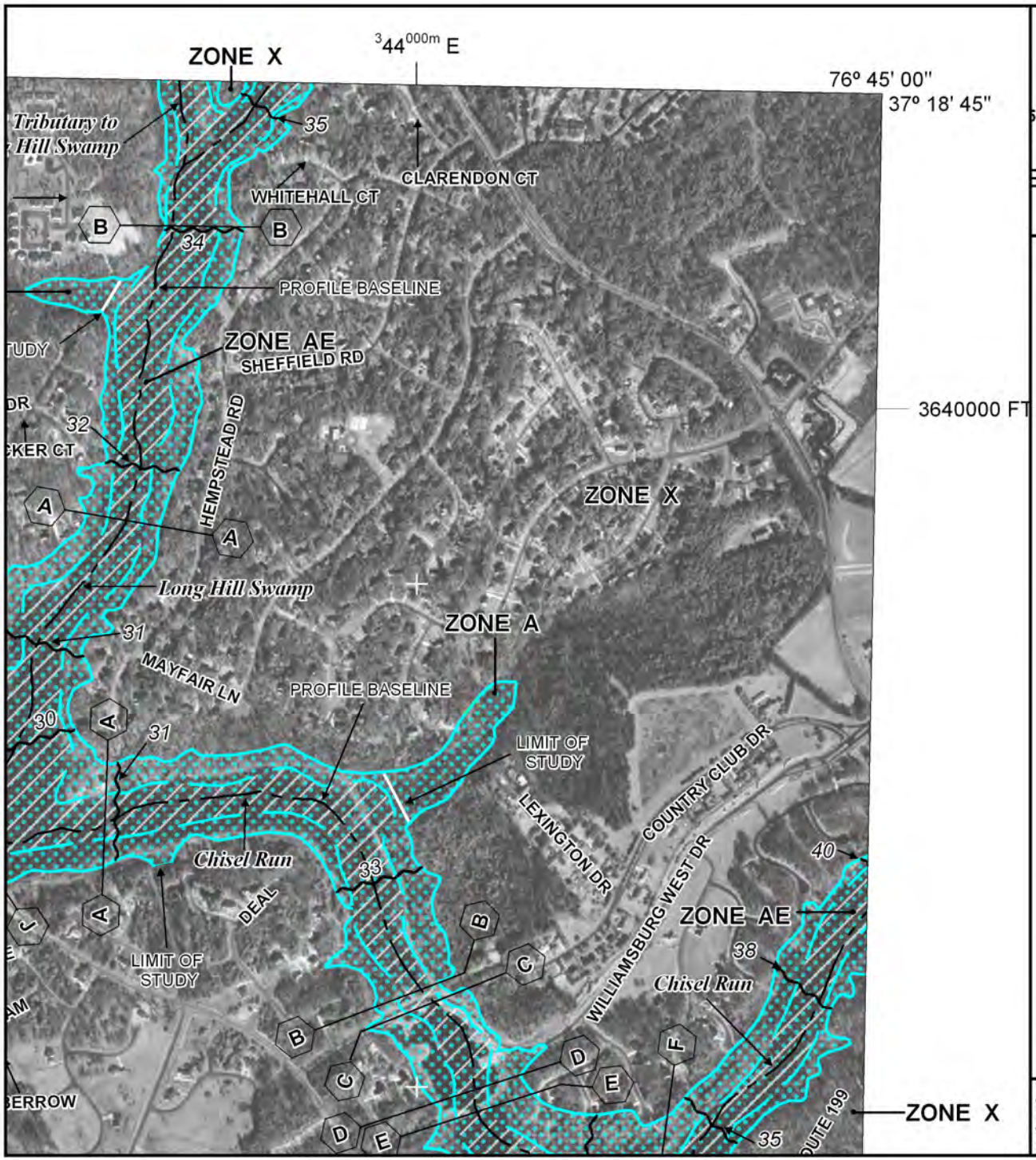
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
51095C0110C

EFFECTIVE DATE
SEPTEMBER 28, 2007

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0120C

FIRM

FLOOD INSURANCE RATE MAP

JAMES CITY COUNTY, VIRGINIA

AND INCORPORATED AREAS

PANEL 120 OF 240

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JAMES CITY COUNTY	510201	00120	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
51095C0120C

EFFECTIVE DATE
SEPTEMBER 28, 2007

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

IS NOT SHOWN ON THIS MAP
IN AREAS OUTSIDE OF JAMES CITY COUNTY

(EL 987) Base Flood Elevation value where elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A Cross section line

23 - - - - - 23 Transect line

97° 07' 30", 32° 22' 30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Weste

ROUTE 199
CHISEL RUN
JAMES CITY COUNTY
CITY OF WILLIAMSBURG
ZONE A
LIMIT OF DETAILED STUDY
ZONE X
PROFILE BASELINE
ZONE AE
RICHMOND RD
City of Williamsburg
510294
$41^{30}{}^{000m}$ N
50
Chisel Run
LIMIT OF STUDY
47
ZONE A
45
42
LIMIT OF STUDY
LONGHILL RD
ZONE AE
ZONE X
JAMES CITY COUNTY
YORK COUNTY
40
ROUTE 199
$41^{29}{}^{000m}$ N
ZONE A
FOSTER RD
East Tributary to Chisel Run
ZONE AE
PROFILE BASELINE
41
MINSON RD
LIMIT OF DETAILED STUDY
ZONE A
FLOOD HAZARD INFO
IS NOT SHOWN ON TH
IN AREAS OUTSIDE OF
$41^{28}{}^{000m}$ N
James City County
Unincorporated Areas
510201
ZONE X
ONS PANEL 0120

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0140C

FIRM

FLOOD INSURANCE RATE MAP

JAMES CITY COUNTY, VIRGINIA AND INCORPORATED AREAS

PANEL 140 OF 240

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
JAMES CITY COUNTY	510201	0140	C
WILLIAMSBURG, CITY OF	510294	0140	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
51095C0140C

EFFECTIVE DATE
SEPTEMBER 28, 2007

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Bald Eagle Protection Guidelines for Virginia

BALD EAGLE PROTECTION GUIDELINES FOR VIRGINIA

Prepared by

Virginia Field Office
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, VA 23061
804-693-6694

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, VA 23230
804-367-1000

Last Updated: 5/8/2001

INTRODUCTION

The Virginia Department of Game and Inland Fisheries (VDGIF) and the U.S. Fish and Wildlife Service (USFWS) are responsible for the conservation and management of the bald eagle (*Haliaeetus leucocephalus)* throughout Virginia. To provide consistent management of the bald eagle in Virginia, the VDGIF and USFWS have developed the following general guidelines. These guidelines indicate the zones around eagle nests, night roosts, and shoreline use areas in which the provisions of various laws and their implementing regulations may apply. All proposed activities that may affect or result in the take of a bald eagle in Virginia will be evaluated by the VDGIF and USFWS on a case-by-case basis, using site-specific information. The recommendations given in these guidelines may be modified as necessary in individual cases, based on a number of factors such as topography, existing forest canopy, and observed reactions of eagles to disturbance at a particular site.

In Virginia, adult bald eagles typically remain on or near their breeding territories year round. Nest building and repair begins as early as November and peaks in mid-winter, but may occur during any month of the year. Courtship flights and related mating behavior are most frequently observed during January and February, and eggs are usually laid between mid-January and late March. Most eggs hatch between early March and early May and eaglets stay in the nest for 11 to 12 weeks after hatching. Most young are capable of sustained flight by mid-July, but remain dependent on the parents and stay in the general vicinity of the nest for several more weeks. Eagles are most sensitive to disturbance from mid-December to early July, the period when they

are building their nests, incubating and raising young, and while the young are learning to fly.

Virginia also has several areas along the major tidal river systems where non-breeding eagles are known to concentrate for roosting and feeding. Some of these areas are used by eagles in the summer and some are used in the winter. These eagle concentration areas are extremely important, because they are used by eagles from throughout the East Coast, as well as resident eagles.

FEDERAL LAWS PROTECTING THE BALD EAGLE

Endangered Species Act (ESA) (87 Stat. 884; 16 U.S.C. 1531 et seq.; 50 CFR Part 17) – Section 7(a)(2) requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any federally listed threatened or endangered species. If a federal agency determines that its action "may affect" a listed threatened or endangered species, the agency is required to consult with the USFWS regarding the degree of impact and measures available to avoid or minimize the adverse effects.

Section 9 of the ESA makes it illegal for any person subject to the jurisdiction of the United States to "take" any federally listed endangered or threatened species of fish or wildlife without a special exemption. "Person" is defined under the ESA to include individuals, corporations, partnerships, trusts, associations, or any other private entity; local, state, and federal agencies; or any other entity subject to the jurisdiction of the United States. Under the ESA, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Section 10(a)(1)(B) of the ESA establishes an incidental take permit provision that authorizes the USFWS, under some circumstances, to permit the taking of federally listed wildlife by private individuals if such taking is "incidental to, and not the purpose of carrying out otherwise lawful activities."

Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended; 16 U.S.C. 668; 50 CFR Part 22) – This 1940 Act prohibits the taking of bald and golden eagles or their nests and eggs. Under this Act, taking is defined as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 701 et seq.; 50 CFR Parts 10, 20, 21) – This Act, passed into law in 1918, was established to protect migratory birds and prohibits the taking of any migratory bird, nest, egg, or part, except as permitted by the USFWS. The prohibitions under this law and its implementing regulations generally include activities or attempted activities that pursue, hunt, shoot, wound, kill, trap, capture, possess, or

collect any migratory bird species and their nests and eggs.

VIRGINIA LAWS AND REGULATIONS PROTECTING THE BALD EAGLE

Virginia's Endangered Species Act (§29.1-563 - §29.1-570) – This law provides that VDGIF is the state regulatory authority over federally or state listed endangered or threatened fish and wildlife in the Commonwealth, defining *fish or wildlife* as "*. . . any member of the animal kingdom, vertebrate or invertebrate, except for the class Insecta, and includes any part, products, egg, or the dead body or parts thereof.*" It prohibits the taking, transportation, processing, sale, or offer for sale within the Commonwealth of any fish or wildlife listed as a federally endangered or threatened species, except as permitted by the Board of Game and Inland Fisheries for zoological, educational, scientific, or captive propagation for preservation purposes.

The Act further authorizes the Board to adopt the federal list of endangered and threatened species, to declare by regulation that species not listed by the federal government are endangered or threatened in Virginia, and to prohibit by regulation the taking, transportation, processing, sale, or offer for sale of those species. Implementing regulations passed pursuant to this authority (4 VAC 15-20-130 through 140) further define "take" and other terms similarly to the federal Endangered Species Act.

Federal Endangered Species Act Cooperative Agreement – Federally listed endangered or threatened species also are placed under VDGIF jurisdiction via a cooperative agreement signed in 1976 with the USFWS pursuant to Section 6 of the ESA. This Cooperative Agreement recognizes VDGIF as the Virginia agency with regulatory and management authority over federally listed or threatened animals excluding insects, and provides for federal/state cooperation regarding the protection and management of those species.

State Protection of Wildlife Species – In addition to these endangered species laws, regulations, and cooperative agreement, the Code of Virginia (§29.1-521) and VDGIF regulations (4 VAC 15-30-10) provide legal protection to all native birds and to their nests, eggs, and young.

GENERAL CONSERVATION RECOMMENDATIONS

The following recommendations are *generally* appropriate to avoid take of bald eagles, and thus avoid the need for any state or federal permits or Section 7 consultation (if a federal action is involved). Activities and projects that do not conform with these recommendations will likely require some form of approval or permit from the VDGIF and/or USFWS, and should always be coordinated with these agencies to ensure compliance with state and federal laws.

Guidelines for Eagle Nests

Primary Management Zone – This is defined as the area 750 feet (229 meters) in radius around an occupied nest. The precise size of this zone should depend on site conditions and the

individual eagles' tolerance for human activity. The following activities within this zone should not occur at any time:

- land clearing, clear cutting, mining, and other habitat modification activities;
- development of residential, recreational, agricultural, commercial, or industrial structures, power lines, roads, trails, or any other construction activity;
- use of chemicals toxic to wildlife, such as pesticides and herbicides.

The following activities should not occur during the breeding/nesting season (December 15 - July 15), unless the nest is determined to be unoccupied in a particular year (VDGIF usually has this information after March 31):

- maintenance of existing buildings and roads;
- use of motorized vehicles and heavy equipment;
- aircraft flyovers within 1000 vertical feet of the ground;
- human entry and activities, including recreation, such as hiking, camping, picnicking, hunting, fishing, boating, jet skiing, etc.;
- loud noise generating activities, including blasting.

Limited selective timber harvest to within 300 feet (91 meters) of the nest tree, after consultation with the VDGIF/USFWS biologists, may be possible *outside* the breeding/nesting season, if a forest canopy is maintained.

Secondary Management Zone – This is defined as the area from 750 feet (229 meters) to 1,320 feet (400 meters) in radius around an occupied nest. The precise size of this zone should depend on site conditions and the individual eagles' tolerance for human activity. Restrictions in this zone are necessary to minimize disturbance that could compromise eagle use of the nest. Most activities within this zone should be restricted during the breeding/nesting season, and allowable activities should be determined by VDGIF/USFWS on a case-by-case basis. Development and vegetation clearing should be minimized and line-of-sight vegetation buffers to the nest should be maintained. The following activities within this zone should generally not occur at any time:

- development of multi-story buildings; high density housing (construction of single story, low density residential houses may be acceptable); large commercial, industrial, or agricultural facilities; high traffic roads; and facilities that would generate loud noise;
- use of chemicals toxic to wildlife, such as pesticides and herbicides.

The following activities should not occur during the breeding/nesting season (December 15 - July 15), unless the nest is determined to be unoccupied in a particular year (VDGIF usually has this information after March 31):

- aircraft flyovers within 1000 vertical feet of the ground;
- construction activities;
- recreational activities that generate loud noise, such as motorized boats, jet skis, etc.;
- other loud noise generating activities, including blasting.

Outside of the breeding/nesting season, most other activities can be conducted within the secondary management zone as determined on a case-by-case basis by VDGIF/USFWS.

Nest/Nest Tree Removal – The eagle nest and the tree/structure in which it is located cannot be removed as long as any portion of the nest remains in the tree/structure.

Abandoned Nest – For three consecutive nesting seasons after the last season in which the nest was occupied (and any portion of the nest is present), the primary and secondary management zone guidelines described above should be followed. In April of the third year after the nest was last occupied, a determination of nest abandonment should be made by VDGIF/USFWS before restricted activities within these zones are undertaken.

Guidelines for Eagle Concentration Areas

Management zones, for communal night roosting sites and documented high use shoreline foraging areas, should generally be treated the same as for nests. Seasonal occupation varies depending on the specific roost or shoreline area, but is generally defined as summer (May 1 - September 30) and winter (November 1 - February 28). Appropriate human use and building/land disturbance restrictions should be determined on a case-by-case basis by VDGIF/USFWS.

DEFINITIONS

Active nest – A nest that is seen to have an adult eagle in incubating or brooding position, or that contains eggs or young.

Breeding/nesting season – December 15 through July 15 in Virginia. This period includes courtship, nest building/repairs, breeding, incubation, raising young, late nesting, and fledgling use of the nest.

Fledgling – Young bird capable of flight.

Occupied nest – A nest where there is evidence that a pair of adult eagles was present during the breeding season, even if there is no evidence that eggs were laid.

Productive/successful nest – An eagle nest that fledges young.

REFERENCES

Cline, K. 1985. Bald eagles in the Chesapeake: A management guide for landowners. National Wildlife Federation, Washington, D.C.

Therres, G. D., M. A. Byrd, and D. S. Bradshaw. 1993. Effects of development on nesting bald eagles: Case studies from Chesapeake Bay. Transactions of the 58th North American Wildlife and Natural Resources Conference. Pg. 62-69.

U.S. Fish and Wildlife Service. 1987. Habitat management guidelines for the bald eagle in the southeast region. Third revision. Atlanta, GA.

Watts, B.D., K.W. Cline, and M.A. Byrd. 1994. The bald eagle in Virginia: An information booklet for land planners. Center for Conservation Biology, College of William and Mary, Williamsburg, VA.

Virginia Department of Game and Inland Fisheries (DGIF)

Virginia Fish and Wildlife Information Service (VAFWIS)

Site Location

37,18,59.8 -76,47,20.2
is **the Search Point**

Show Position Rings
(•) Yes ( ) No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles radius

Search Point is at map center

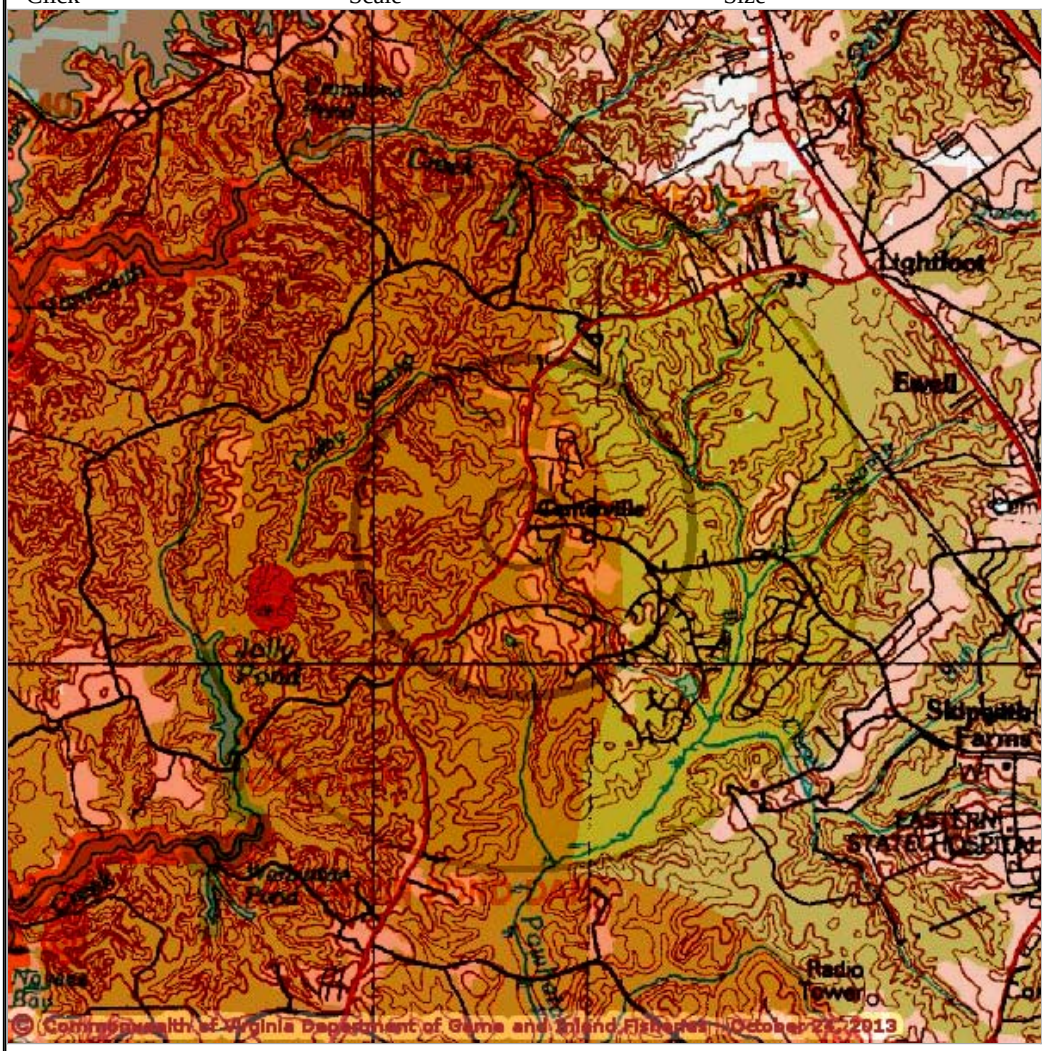
Base Map Choices
Topography

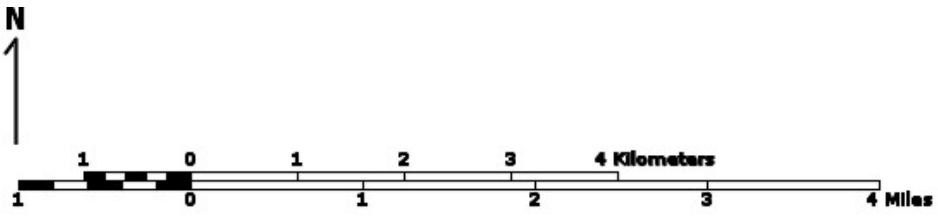
Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

Refresh Browser Page

Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 37,18,59.8 -76,47,20.2
Map Location 37,18,59.8 -76,47,20.2

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 336684 and top 4136296. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The

T & E Waters

Federal

State

Predicted Habitat WAP Tier I & II

Aquatic

Terrestrial

Trout Waters

Class I - IV

Class V - VI

Anadromous Fish Reach

Confirmed

Potential

123 Impediment

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2013-10-24 20:54:23 (qa/qc December 5, 2012 8:04 - tn=495906.0 dist=3218.688 I)
$poi=37.3166111 -76.7889444

| DGIF | Credits | Disclaimer | Contact shirl.dressler@dgif.virginia.gov |Please view our privacy policy |
© 1998- 2013 Commonwealth of Virginia Department of Game and Inland Fisheries

Friendly

VaFWIS Search Report Compiled on 10/24/2013, 5:36:16 PM

Help

Known or likely to occur within a **2 mile radius around point 37,18,55.1 -76,47,14.5** in **095 James City County, VA**

View Map of Site Location

438 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 27) (27 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
010032	FESE	II	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
040110	SE	I	Rail, black	Laterallus jamaicensis		BOVA
050034	SE	I	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis		HU6
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Potential	BOVA,Habitat,HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
010038	FC	IV	Alewife	Alosa pseudoharengus	Yes	BOVA,SppObs,HU6
040144	FC	IV	Knot, red	Calidris canutus rufus		HU6
010045	FC		Herring, blueback	Alosa aestivalis		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus	Yes	BOVA,BBA,BAEANests,HU6
100003	FS	II	Skipper, rare	Problema bulenta		HU6
100001	FS	IV	fritillary, Diana	Speyeria diana		BOVA
030067	CC	II	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin		BOVA
030063	CC	III	Turtle, spotted	Clemmys guttata	Yes	BOVA,SppObs,HU6
010077		I	Shiner, bridle	Notropis bifrenatus	Yes	BOVA,Habitat,SppObs,HU6
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
040038		II	Bittern, American	Botaurus lentiginosus		BOVA
040052		II	Duck, American black	Anas rubripes		BOVA,HU6
040029		II	Heron, little blue	Egretta caerulea caerulea		BOVA
040105		II	Rail, king	Rallus elegans		BOVA,HU6
040186		II	Tern, least	Sterna antillarum		BOVA
040187		II	Tern, royal	Sterna maxima maximus		BOVA
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA,HU6
040266		II	Wren, winter	Troglodytes troglodytes		BOVA

To view **All 438 species** View 438

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=4 VAC 15-360-10 section 5 Collection Concern

Thursday, October 24, 2013 5:36:34 PM | DGIF | Credits | Disclaimer | Please view our privacy policy |

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage

N/A

Colonial Water Bird Survey (4 records)

View Map of All Query Results Colonial Water Bird Survey

Colony_Name	N Obs	Latest Date	N Species			View Map
			Different Species	Highest TE *	Highest Tier **	
Powhatan Creek 2	1	May 4 2003	1			Yes
Colby Swamp	1	May 3 2003	1			Yes
Colby Swamp at Jolly Pond	1	Jun 1 1993	2			Yes
LONGHILL SWAMP	5	Jun 1 1991	1			Yes

Displayed 4 Colonial Water Bird Survey

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests (1 records)

View Map of All Query Results Bald Eagle Nests

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
JC0802	8	Apr 18 2011	RECENTLY ACTIVE	Yes

Displayed 1 Bald Eagle Nests

Species Observations (36 records - displaying first 20 , 2 Observations with Threatened or Endangered species)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
15625	SppObs	Mar 19 1973	VIMS	16	FC	I	Yes
29729	SppObs	Dec 30 1899	Mitchell, J. C.	1	SS	III	Yes
339512	SppObs	Oct 1 1996	D. GONZALES, M. FAROOQI	7		IV	Yes
340657	SppObs	Oct 1 1996	WWS DGIF D. GONZALES, M. FAROOQI	7		IV	Yes
339511	SppObs	Oct 11 1995		10		IV	Yes
340656	SppObs	Oct 11 1995	WWS DGIF	10		IV	Yes
339510	SppObs	Oct 24 1994		6		IV	Yes
340655	SppObs	Oct 24 1994	WWS DGIF	6		IV	Yes
339509	SppObs	Apr 22 1992		7		IV	Yes
340654	SppObs	Apr 22 1992	WWS DGIF	7		IV	Yes
60695	SppObs	Oct 25 1969	WILLIAMS, J W	1			Yes
28090	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
365515	SppObs	Dec 30 1899		1			Yes
365530	SppObs	Dec 30 1899		1			Yes
365557	SppObs	Dec 30 1899		1			Yes
366914	SppObs	Dec 30 1899		1			Yes
19250	SppObs	Dec 30 1899		1			Yes
27192	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
28238	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
28755	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes

Displayed 20 Species Observations

Selected 36 Observations View all 36 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species (1 Reach)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species		View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name	
(20802062)		010077 || || I || Shiner, bridle || Notropis bifrenatus	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Yes

Virginia Breeding Bird Atlas Blocks (5 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map

		Different Species	Highest TE *	Highest Tier **	
56074	Norge, CE	3			Yes
56073	Norge, CW	4	FS	II	Yes
56072	Norge, NE	2			Yes
56071	Norge, NW	1			Yes
56076	Norge, SE	78		IV	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
095	James City	420	FESE	I

USGS 7.5' Quadrangles:
Norge

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
JL28	Chickahominy River-Yarmouth Creek	75	FCSE	I
JL29	Chickahominy River-Morris Creek	63	FCSE	I
JL31	Powhatan Creek	71	FCST	II

Compiled on 10/24/2013, 5:36:18 PM I495889.0 report=all searchType= R dist= 3218.688 poi= 37,18,55.1 -76,47,14.5

PixelSize=64; Anadromous=0.060956; BBA=0.227175; BECAR=0.099775; Bats=0.064395; Buffer=0.21671; County=0.332847; HU6=0.765496; Impediments=0.054171; Init=0.292015; PublicLands=0.076911; Quad=0.103657; SppObs=2.093656; TEWaters=0.052226; TierReaches=1.068964; TierTerrestrial=0.183594; Total=5.633691; Trout=0.054805; huva=0.100443

© 1998- 2013 Commonwealth of Virginia Department of Game and Inland Fisheries

¿

¿

¿ If you have difficulty reading or accessing documents, please Contact Us for assistance.

Site Location

37,18,49.7 -76,45,37.2
is **the Search Point**

Show Position Rings
(•) Yes ( ) No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles radius

Search Point is at map center

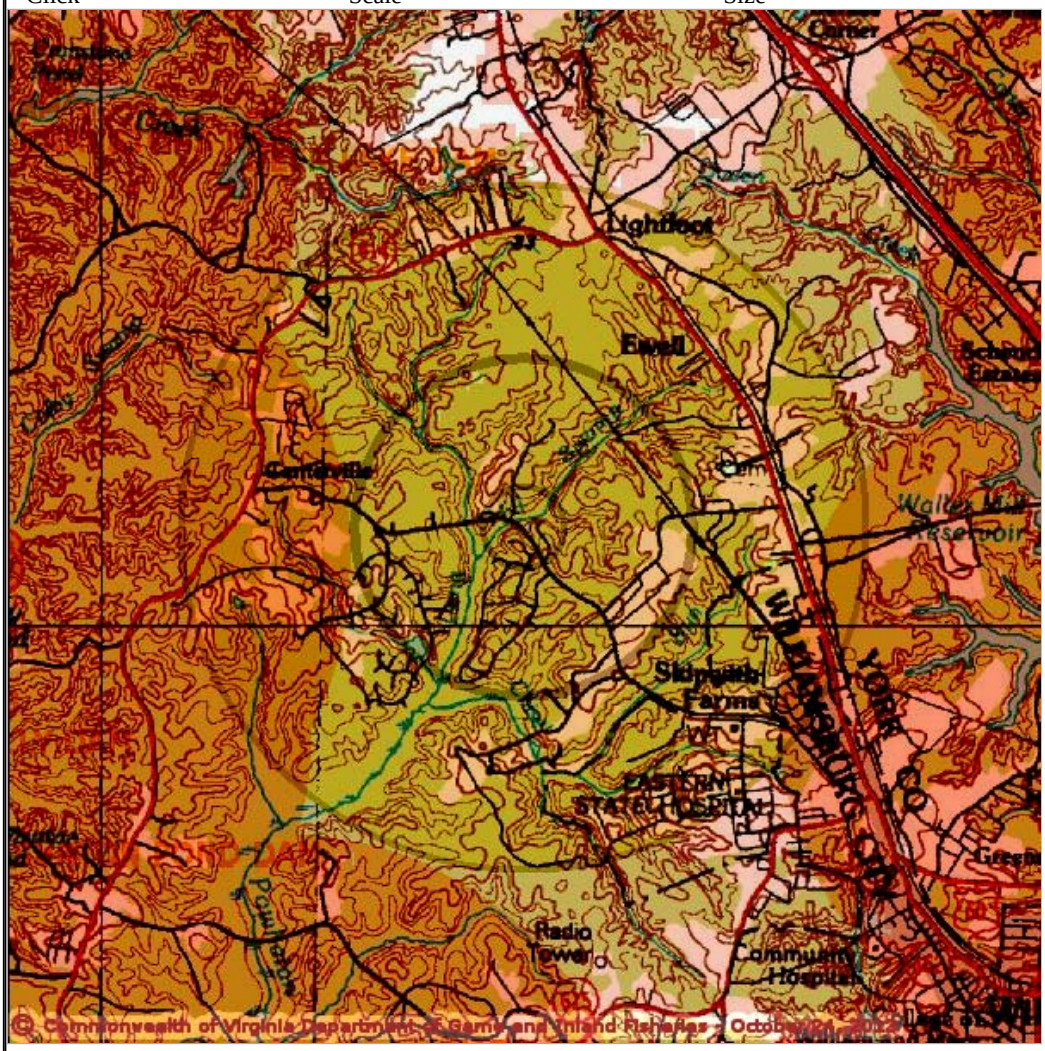
Base Map Choices
Topography

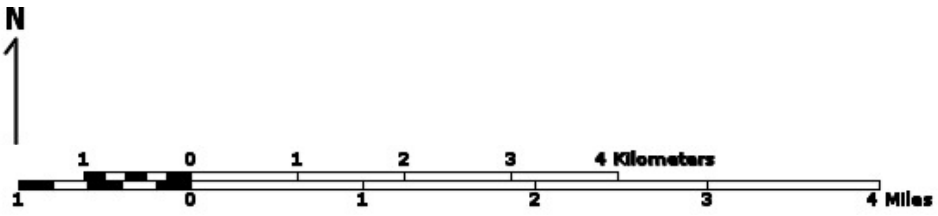
Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

Refresh Browser Page

Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 37,18,49.7 -76,45,37.2
Map Location 37,18,49.7 -76,45,37.2

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 339214 and top 4135938. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The

T & E Waters

Federal

State

Predicted Habitat WAP Tier I & II

Aquatic

Terrestrial

Trout Waters

Class I - IV

Class V - VI

Anadromous Fish Reach

Confirmed

Potential

23 Impediment

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2013-10-24 19:16:42 (qa/qc December 5, 2012 8:04 - tn=495893.0 dist=3218.688 I)
$poi=37.3138056 -76.7603333

| DGIF | Credits | Disclaimer | Contact shirl.dressler@dgif.virginia.gov |Please view our privacy policy |
© 1998- 2013 Commonwealth of Virginia Department of Game and Inland Fisheries

VaFWIS Search Report Compiled on 10/24/2013, 5:39:07 PM

Help

Known or likely to occur within a **2 mile radius around point 37,18,50.7 -76,46,01.3** in **095 James City County, 199 York County, 830 Williamsburg City, VA**

View Map of Site Location

494 Known or Likely Species ordered by Status Concern for Conservation (displaying first 36) (36 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
010032	FESE	II	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA,HU6
030074	FESE		Turtle, Kemp's ridley sea	Lepidochelys kempii		BOVA
030071	FTST	I	Turtle, loggerhead sea	Caretta caretta		BOVA
040120	FTST	I	Plover, piping	Charadrius melodus		BOVA
040110	SE	I	Rail, black	Laterallus jamaicensis		BOVA,HU6
050034	SE	I	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis		HU6
020052	SE	II	Salamander, eastern tiger	Ambystoma tigrinum		BOVA
030013	SE	II	Rattlesnake, canebrake	Crotalus horridus		BOVA
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii		HU6
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Potential	BOVA,Habitat,HU6
020002	ST	II	Treefrog, barking	Hyla gratiosa		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
010038	FC	IV	Alewife	Alosa pseudoharengus		BOVA,HU6
040144	FC	IV	Knot, red	Calidris canutus rufus		BOVA,HU6
010045	FC		Herring, blueback	Alosa aestivalis		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus	Potential	BOVA,BBA,HU6
100003	FS	II	Skipper, rare	Problema bulenta		HU6
100001	FS	IV	fritillary, Diana	Speyeria diana		BOVA
030067	CC	II	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin		BOVA,HU6
030063	CC	III	Turtle, spotted	Clemmys guttata	Yes	BOVA,SppObs,HU6
010077		I	Shiner, bridle	Notropis bifrenatus		BOVA,HU6
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
040038		II	Bittern, American	Botaurus lentiginosus		BOVA

040052		II	Duck, American black	Anas rubripes		BOVA,HU6
040029		II	Heron, little blue	Egretta caerulea caerulea		BOVA
040114		II	Oystercatcher, American	Haematopus palliatus		BOVA
040105		II	Rail, king	Rallus elegans		BOVA,HU6
040381		II	Sparrow, saltmarsh sharp -tailed	Ammodramus caudacutus		BOVA
040186		II	Tern, least	Sterna antillarum		BOVA
040187		II	Tern, royal	Sterna maxima maximus		BOVA
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA,HU6
040266		II	Wren, winter	Troglodytes troglodytes		BOVA

To view **All 494 species** View 494

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=4 VAC 15-360-10 section 5 Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage

N/A

Colonial Water Bird Survey (2 records)

View Map of All Query Results Colonial Water Bird Survey

Colony_Name	N Obs	Latest Date	N Species			View Map
			Different Species	Highest TE*	Highest Tier**	
Chisel Run	1	Mar 20 2003	1			Yes
LONGHILL SWAMP	5	Jun 1 1991	1			Yes

Displayed 2 Colonial Water Bird Survey

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations (36 records - displaying first 20 , 1 Observation with Threatened or Endangered species)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species Different Species	Highest TE*	Highest Tier**	View Map
29729	SppObs	Dec 30 1899	Mitchell, J. C.	1	SS	III	Yes
340657	SppObs	Oct 1 1996	WWS DGIF D. GONZALES, M. FAROOQI	7		IV	Yes
339512	SppObs	Oct 1 1996	D. GONZALES, M. FAROOQI	7		IV	Yes
339511	SppObs	Oct 11 1995		10		IV	Yes
340656	SppObs	Oct 11 1995	WWS DGIF	10		IV	Yes
340655	SppObs	Oct 24 1994	WWS DGIF	6		IV	Yes
339510	SppObs	Oct 24 1994		6		IV	Yes
339509	SppObs	Apr 22 1992		7		IV	Yes
340654	SppObs	Apr 22 1992	WWS DGIF	7		IV	Yes
605907	SppObs	Jul 10 2008	Joseph ; Mitchell| Joseph; Mitchell	1			Yes
601583	SppObs	Apr 7 2008	Joseph ; Mitchell| Joseph; Mitchell	1			Yes
426720	SppObs	Aug 21 2003	VCU - INSTAR	2			Yes
60695	SppObs	Oct 25 1969	WILLIAMS, J W	1			Yes

28090	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
365554	SppObs	Dec 30 1899		1			Yes
598	SppObs	Dec 30 1899	VDGIF	1			Yes
27331	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
28979	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
29589	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes
29663	SppObs	Dec 30 1899	Mitchell, J. C.	1			Yes

Displayed 20 Species Observations

Selected 36 Observations View all 36 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Yes

Virginia Breeding Bird Atlas Blocks (6 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
56074	Norge, CE	3			Yes
56072	Norge, NE	2			Yes
56076	Norge, SE	78		IV	Yes
57073	Williamsburg, CW	18		IV	Yes
57071	Williamsburg, NW	1	FS	II	Yes
57075	Williamsburg, SW	14		IV	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier

095	James City	420	FESE	I
199	York	431	FESE	I
830	Williamsburg City	361	FSSE	I

USGS 7.5' Quadrangles:
Norge
Williamsburg

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
JL28	Chickahominy River-Yarmouth Creek	75	FCSE	I
JL29	Chickahominy River-Morris Creek	63	FCSE	I
JL31	Powhatan Creek	71	FCST	II
YO65	York River-Skimino Creek	73	FESE	I
YO67	Queen Creek	68	FCSS	II

Compiled on 10/24/2013, 5:39:07 PM I495890.0 report=all searchType= R dist= 3218.688 poi= 37,18,50.7 -76,46,01.3

PixelSize=64; Anadromous=0.031316; BBA=0.101109; BECAR=0.036083; Bats=0.022284; Buffer=0.21951; County=0.152328; HU6=0.734251; Impediments=0.022223; Init=0.295557; PublicLands=0.047134; Quad=0.0939; SppObs=1.155973; TEWaters=0.035437; TierReaches=0.053705; TierTerrestrial=0.110909; Total=3.015731; Trout=0.034094; huva=0.086681

Site Location

37,17,36.1 -76,43,34.2
is **the Search Point**

Show Position Rings
(•) Yes ( ) No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

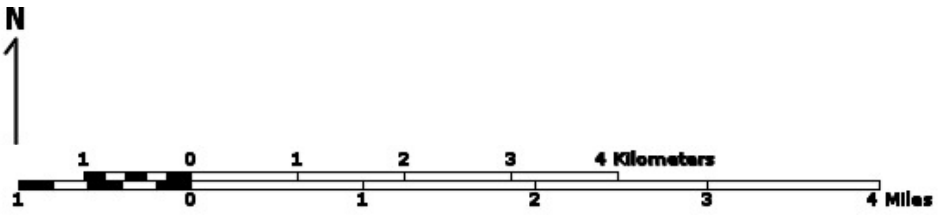
Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

Refresh Browser Page

Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 37,17,36.1 -76,43,34.2
Map Location 37,17,36.1 -76,43,34.2

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 342200 and top 4133613. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West.Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The

T & E Waters

Federal

State

Predicted Habitat WAP Tier I & II

Aquatic

Terrestrial

Trout Waters

Class I - IV

Class V - VI

Anadromous Fish Reach

Confirmed

Potential

23 Impediment

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2013-10-24 17:42:25 (qa/qc December 5, 2012 8:04 - tn=495891.0 dist=3218.688 I)
$poi=37.2933611 -76.7261667

| DGIF | Credits | Disclaimer | Contact shirl.dressler@dgif.virginia.gov |Please view our privacy policy |
© 1998- 2013 Commonwealth of Virginia Department of Game and Inland Fisheries

VaFWIS Search Report Compiled on 10/24/2013, 5:41:10 PM

Help

Known or likely to occur within a **2 mile radius around point 37,17,36.1 -76,43,34.2** in **095 James City County, 199 York County, 830 Williamsburg City, VA**

View Map of Site Location

500 Known or Likely Species ordered by Status Concern for Conservation (displaying first 36) (36 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
010032	FESE	II	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA,HU6
030074	FESE		Turtle, Kemp's ridley sea	Lepidochelys kempii		BOVA
030071	FTST	I	Turtle, loggerhead sea	Caretta caretta		BOVA
040120	FTST	I	Plover, piping	Charadrius melodus		BOVA
040110	SE	I	Rail, black	Laterallus jamaicensis		BOVA
050034	SE	I	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis		HU6
020052	SE	II	Salamander, eastern tiger	Ambystoma tigrinum		BOVA
030013	SE	II	Rattlesnake, canebrake	Crotalus horridus		BOVA,HU6
040096	ST	I	Falcon, peregrine	Falco peregrinus		BOVA
040129	ST	I	Sandpiper, upland	Bartramia longicauda		BOVA
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus		BOVA
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Potential	BOVA,Habitat,HU6
020002	ST	II	Treefrog, barking	Hyla gratiosa		BOVA,HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
010038	FC	IV	Alewife	Alosa pseudoharengus		BOVA,HU6
040144	FC	IV	Knot, red	Calidris canutus rufus		BOVA,HU6
010045	FC		Herring, blueback	Alosa aestivalis		BOVA
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus	Yes	BOVA,BAEANests,HU6
100003	FS	II	Skipper, rare	Problema bulenta		HU6
100001	FS	IV	fritillary, Diana	Speyeria diana		BOVA
030067	CC	II	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin	Potential	BOVA,Habitat,HU6
030063	CC	III	Turtle, spotted	Clemmys guttata		BOVA,HU6
010077		I	Shiner, bridle	Notropis bifrenatus		BOVA
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius		BOVA
040319		I	Warbler, black-throated green	Dendroica virens		BOVA
020063		II	Toad, oak	Anaxyrus quercicus		HU6

040038		II	Bittern, American	Botaurus lentiginosus		BOVA
040052		II	Duck, American black	Anas rubripes		BOVA,HU6
040029		II	Heron, little blue	Egretta caerulea caerulea		BOVA
040114		II	Oystercatcher, American	Haematopus palliatus		BOVA
040105		II	Rail, king	Rallus elegans		BOVA
040381		II	Sparrow, saltmarsh sharp-tailed	Ammodramus caudacutus		BOVA
040186		II	Tern, least	Sterna antillarum		BOVA
040187		II	Tern, royal	Sterna maxima maximus		BOVA
040320		II	Warbler, cerulean	Dendroica cerulea		BOVA,HU6
040266		II	Wren, winter	Troglodytes troglodytes		BOVA

To view **All 500 species** View 500

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=4 VAC 15-360-10 section 5 Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams (1 records)

View Map of All Anadromous Fish Use Streams

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
P130	Queen creek	Potential	0			Yes

Impediments to Fish Passage (2 records)

View Map of All Fish Impediments

ID	Name	River	View Map
404	MOTOAKA DAM	COLLEGE CREEK	Yes
658	WALLER MILL DAM	QUEENS CREEK	Yes

Colonial Water Bird Survey (2 records)

View Map of All Query Results Colonial Water Bird Survey

Colony_Name	N Obs	Latest Date	N Species			View Map
			Different Species	Highest TE*	Highest Tier**	

Lake Matoaka	1	May 4 2003	1			Yes
Chisel Run	1	Mar 20 2003	1			Yes

Displayed 2 Colonial Water Bird Survey

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests (1 records)

View Map of All Query Results
Bald Eagle Nests

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
YK0703	10	Apr 19 2011	RECENTLY ACTIVE	Yes

Displayed 1 Bald Eagle Nests

Species Observations (45 records - displaying first 20)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species Different Species	Highest TE*	Highest Tier**	View Map
613843	SppObs	Jun 17 2011	Morgan; Niccoli	1		IV	Yes
610778	SppObs	Feb 19 2010	Daniel; Cristol| Andrew; McGann	1		IV	Yes
610777	SppObs	Feb 12 2010	Daniel; Cristol| Andrew; McGann	1		IV	Yes
610776	SppObs	Jan 19 2010	Daniel; Cristol| Andrew; McGann	1		IV	Yes
610775	SppObs	Jan 8 2010	Daniel; Cristol| Andrew; McGann	1		IV	Yes
603998	SppObs	Sep 24 2008	Ashley; Haines	13		IV	Yes
339375	SppObs	Apr 19 2000	D. FOWLER, B. MEHL	11		IV	Yes
365643	SppObs	Dec 30 1899		3		IV	Yes
610781	SppObs	Jun 26 2010	Daniel; Cristol	1			Yes
610780	SppObs	Jun 20 2010	Daniel; Cristol	1			Yes
610779	SppObs	Jun 12 2010	Daniel; Cristol	1			Yes

603173	SppObs	Aug 6 2008	Jason Hill and Mike Hutch	5			Yes
605907	SppObs	Jul 10 2008	Joseph ; Mitchell| Joseph; Mitchell	1			Yes
603969	SppObs	Apr 7 2008	Joseph ; Mitchell| Joseph; Mitchell	1			Yes
601583	SppObs	Apr 7 2008	Joseph ; Mitchell| Joseph; Mitchell	1			Yes
426720	SppObs	Aug 21 2003	VCU - INSTAR	2			Yes
303316	SppObs	Jul 29 2003	Alex Barron	4			Yes
86580	SppObs	Sep 29 1997	Michael McCoy	1			Yes
86049	SppObs	Mar 28 1996	Edward Stephens	1			Yes
86048	SppObs	Mar 28 1996	Edward Stephens	1			Yes

Displayed 20 Species Observations

Selected 45 Observations View all 45 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Yes
030067	CC	II	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin	Yes

Virginia Breeding Bird Atlas Blocks (4 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
56074	Norge, CE	3			Yes
56076	Norge, SE	78		IV	Yes
57073	Williamsburg, CW	18		IV	Yes
57075	Williamsburg, SW	14		IV	Yes

Public Holdings: (1 names)

Name	Agency	Level
Colonial National Historical Park	National Park Service	Federal

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
095	James City	420	FESE	I
199	York	431	FESE	I
830	Williamsburg City	361	FSSE	I

USGS 7.5' Quadrangles:
Norge
Williamsburg

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
JL31	Powhatan Creek	71	FCST	II
JL33	James River-Lower Chippokes Creek	82	FESE	I
JL34	College Creek	73	FCSS	II
YO67	Queen Creek	68	FCSS	II

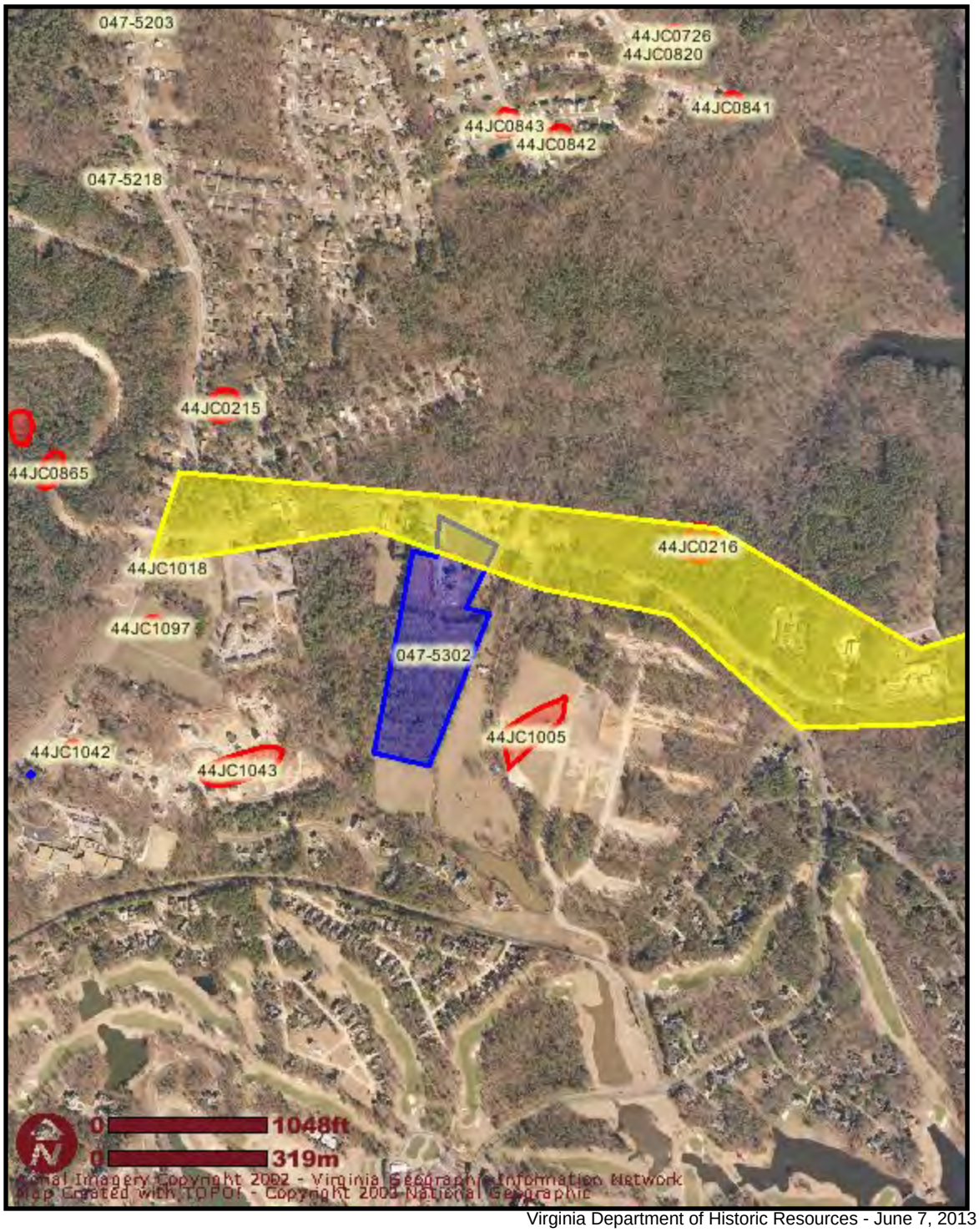
Compiled on 10/24/2013, 5:41:11 PM I495891.0 report=all searchType= R dist= 3218.688 poi= 37,17,36.1 -76,43,34.2

PixelSize=64; Anadromous=0.043407; BBA=0.091432; BECAR=0.077511; Bats=0.029456; Buffer=0.216248; County=0.149477; HU6=0.67174; Impediments=0.032519; Init=0.291706; PublicLands=0.088195; Quad=0.123111; SppObs=1.843627; TEWaters=0.043022; TierReaches=0.064758; TierTerrestrial=0.18744; Total=3.891987; Trout=0.040974; huva=0.110909

Virginia Department of Historic Resources (DHR)

Data Sharing System Results

Virginia Department of Historic Resources Data Sharing System, 06/12/2013



LEGEND
Architecture Labels
Archaeology Labels
Interstates
Architecture (polygon)
Archaeology (polygon)
County Boundary
VBMP Imagery
24k TOPO

Virginia Department of Historic Resources - June 7, 2013 4:32 pm

Longhill 1

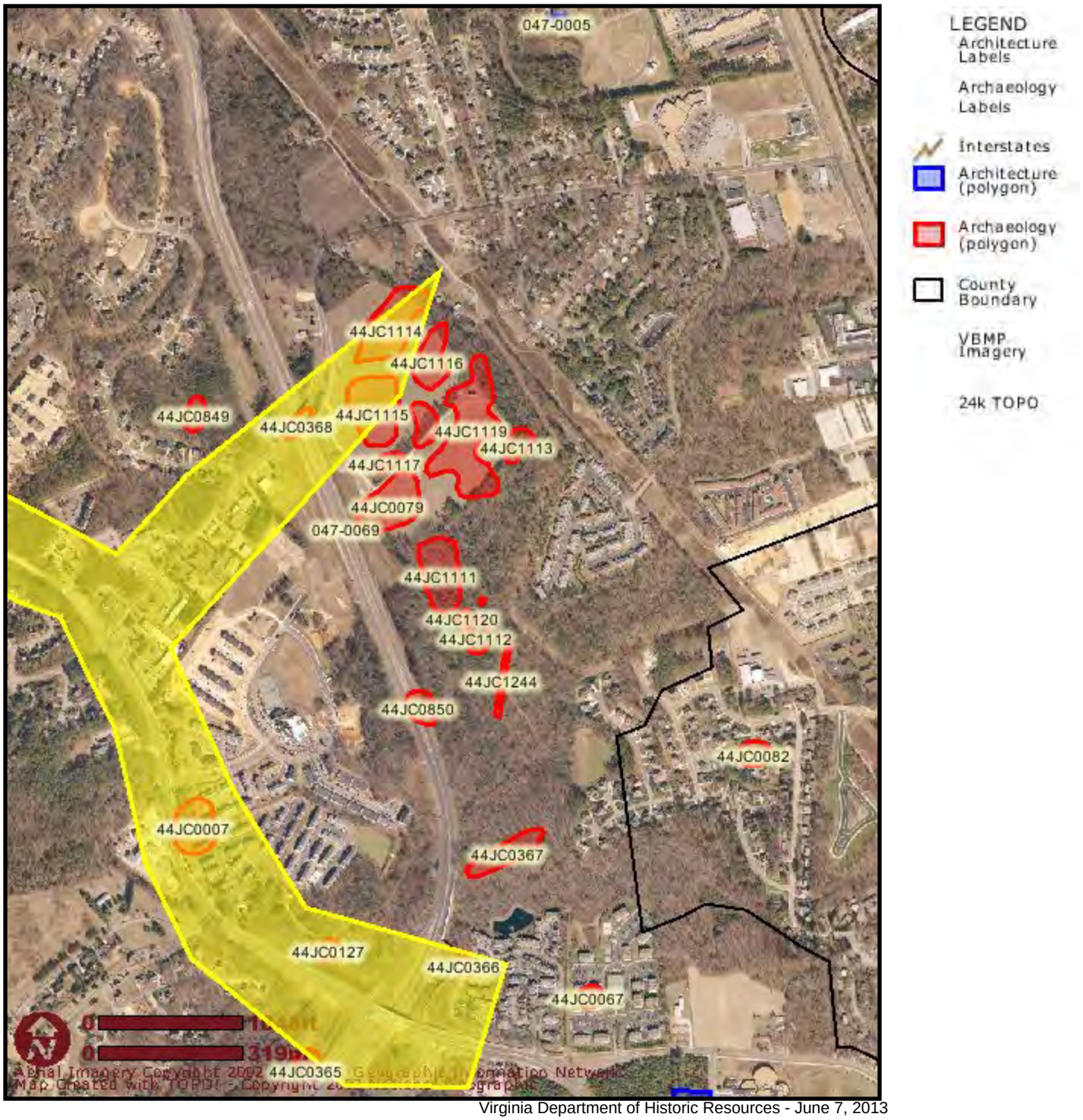
Virginia Department of Historic Resources Data Sharing System, 06/12/2013



Virginia Department of Historic Resources - June 7, 2013 4:32 pm

Longhill map 2

Virginia Department of Historic Resources Data Sharing System, 06/12/2013



Virginia Department of Historic Resources - June 7, 2013 4:32 pm

Longhill map 3

Report Generated on: 6/12/2013

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: 44JC0007

DHR Site Number: 44JC0007 **Other DHR Number:**
Resource Name: Lightfoot
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Euro-American	18th Century
Native American	Prehistoric/Unknown

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Indeterminate **Example:**
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): NORGE **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: **Drainage:**
Aspect: **Nearest Water Source:**
Elevation (in feet): **Distance to Water(in feet):**
Slope: **Site Soils:**
Adjacent Soils:
Landform: other

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 300 feet by feet **Acreage:**

Survey Strategy: Subsurface Testing

Site Condition: Unknown Portion of Site Destroyed

City/County: **James City**

Threats to Resource:

Survey Description:

Plowzone approximately 10" thick with l
subsurface features extending nearly l
3' into the subsoil.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** VDHR

Assemblage Description:
colonial and prehistoric material (see reports listed below l
for detailed information)

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? **Depository:**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:**

DHR Library Reference Number:

Reference for reports and publications:

Quarterly Bulletin ASV, V20 #4 June 1966 pp. 103-114; l
Quarterly Bulletin ASV, V22 #2 December 1967 pp. 55-72

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes			9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1967/99/99

Organization and Person:
Organization: **First:** William M. **Last:** Kelso
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:
survey began in 1964

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

City/County: **James City**

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0010**

DHR Site Number: 44JC0010 **Other DHR Number:**
Resource Name: Longhill Road
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Indeterminate	19th Century

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Funerary **Example:** Cemetery
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): NORGE **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: **Drainage:**
Aspect: **Nearest Water Source:**
Elevation (in feet): **Distance to Water(in feet):**
Slope: **Site Soils:**
Adjacent Soils:
Landform: other

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: feet by feet **Acreage:**

Survey Strategy: Informant

Site Condition: Site Totally Destroyed

City/County: **James City**

Threats to Resource:

Survey Description:

I visited the site because of l
persistent rumors in Wmbgs. that l
construction crew had bulldozed an old l
cemetery near an old house. In May l
1971, an old cemetery had indeed been l
found during clearing of this land. l
Dr. Norman Barka was consulted by l
School Board, and excavation of one l
grave was done under his direction to l
attempt to find identity of burials l
and their age. In the presumed l
absence of a church, it was concluded l
that the site was a domestic one and l
the burials in a family cemetery. No l
stones were found on site. The l
surface collection I made there in l
October was examined by Dr. Barka, and l
dated as from early to mid-19th l
century stuff. Five graves (Dr. B. l
estimated that 12 or more were l
present) were removed by Mr. Page of l
Bucktrout Funeral Home, to another l
location on the same property in Sept. l
Others have not been found to date. l
Mr. Page insisted on giving me the l
"hardware" from the graves he moved - l
casket handles, decorative metal work, l
glass, and "Rest in Peace" and "At l
Rest" plaques from caskets. He said l
that absolute date could be determined l
by consulting catalogues of funery l
suppliers from 19th C. This site is l
probably within a mile or so of the l
site dug and reported by Kelso, as l
"Lightfoot Site." Very near the l
reburial spot is a deep pit, perhaps l
10 feet across which the construction l
workers said was a mash pit. It l
seemed too deep to be icehouse l
remains.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** Private Ownership

City/County: **James City**

Assemblage Description:
19th century artifacts, "hardware" from graves

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? **Depository:**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? **Depository:**

DHR Library Reference Number:
Reference for reports and publications:

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes	James City-Wmbgs. School Board		9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1971/10/11

Organization and Person:
Organization: **First:** R. **Last:** Perry
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

City/County: **James City**

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0127**

DHR Site Number: 44JC0127 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Native American	Late Archaic
Native American	Woodland

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Settlement Patterns **Example:** Camp
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres): NAD / /

NAD **ZONE** **EAST** **NORTH**

Boundary UTM Coordinates (for 10 acres or more):

NAD **ZONE** **EAST** **NORTH**

Physiographic Province:
Aspect:
Elevation (in feet):
Slope:
Landform: other

Drainage:
Nearest Water Source:
Distance to Water(in feet):
Site Soils:
Adjacent Soils:

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 246 feet by 138 feet **Acreage:**

Survey Strategy: Subsurface Testing

Site Condition: Surface Deposits Present And With Subsurface Integrity

City/County: **James City**

Threats to Resource:

Survey Description:

(1996) Site 44JC127 was identified by Howard MacCord in 1979 during an initial reconnaissance survey for the proposed Route 199 extension (MacCord 1979) and underwent additional PHase I investigation in 1995 (Higgins et al. 1996). Site 44JC127 was subject to Phase II evaluation in December and January of 1996 (Higgins and Deitrick 1996). The additonal 1996 Phase I work consisted of shovel testing at intervals of 75 ft or less and surface collection. The 1996 Phase II study consisted of systematic, close interval shovel testing and 1m x 2m unit excavation.
(1979) Site appears to be remnant of area removed by gravel mining operations in area 60 x 60 meters to west and north.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** WMCAR

Assemblage Description:
(1996)Phase uno: three pieces of quartzite debitage and one piece of argillite debitage.
Phase dos: 73 pieces of debitage, eithgt pieces of fire-cracked rock, five lithic tools (i.e., one pitted cobble, Halifax side-notched point, two bifaces, one core), and nine ceramic sherds.
(1979) approx. 30 pieces grit tempered buff colored handmade pottery collected by H.A. MacCord.

Specimens Reported? Yes

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** WMCAR

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** WMCAR & VDOT

DHR Library Reference Number:

Reference for reports and publications:

1) "Archaeological Reconnaissance Survey Report for the Proposed Route 199 Project (MacCord, 1979); 2) "Additional Phase I Archaeological Survey for the Proposed Route 199 Project, James City County, Virginia (Higgins et al. 1996), WMCAR; 3) "Phase II Archaeolgical Evaluation of Site 44JC127 Proposed Route 199 Project, James City County, Virginia" (Higgins and Deitrick 1996), WMCAR. 4) Archaeological Data Recovery Plan for Mitigation of Effects to Sites 44JC127 and 44JC850 Associated with the Proposed Route 199 Project, James City County, Virginia. April 30, 1996, WMCAR.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes	WMCAR		9999/99/99

City/County: **James City**

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1995/10/99

Organization and Person:
Organization: **First:** Thomas F. **Last:** Higgins III
Sponsor Organization:
DHR Project Review File No: 1993-0103-S

CRM Event Notes or Comments:
WMCAR

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1979/06/15

Organization and Person:
Organization: **First:** Lyle E. **Last:** Browning
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Other **Date:** 1997/07/04

Organization and Person:
Organization: **First:** **Last:** WMCAR
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:
Middle Woodland temporal designation modified to Woodland citing insufficient diagnostic examples in the survey forms.

Cultural Resource Management Event: Survey:Phase II/Intensive **Date:** 1996/01/99

Organization and Person:
Organization: **First:** Thomas F. **Last:** Higgins III
Sponsor Organization:
DHR Project Review File No: 1993-0103-S

CRM Event Notes or Comments:
WMCAR - recommended eligible

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

City/County: **James City**

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0216**

DHR Site Number: 44JC0216 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation **Temporal Designation**

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Other
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): NORGE **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD **ZONE** **EAST** **NORTH**

Boundary UTM Coordinates (for 10 acres or more):

NAD **ZONE** **EAST** **NORTH**

Physiographic Province: **Drainage:**
Aspect: **Nearest Water Source:**
Elevation (in feet): **Distance to Water(in feet):**
Slope: **Site Soils:**
Adjacent Soils:
Landform: other

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: feet by feet **Acreage:**

Survey Strategy: Historic Map Projection

Site Condition: Site Condition Unknown

City/County: **James City**

Threats to Resource:

Survey Description:

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? **Specimens Depository:**

Assemblage Description:

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? **Depository:**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:**

DHR Library Reference Number:

Reference for reports and publications:

Site depicted on J.F. Gilmer's 1863 and 1864 l
maps of "Vicinity of Richmond and Part of the Peninsula"

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation? **Depository** **Type of Photos** **Photo Date**

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Other **Date:** 1983/08/99

Organization and Person:
Organization: **First:** Martha **Last:** McCartney
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

City/County: **James City**

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0365**

DHR Site Number: 44JC0365 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Indeterminate	19th Century: 2nd half
Indeterminate	20th Century

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Camp
Comments/Remarks:
Settlement patterns.

Thematic Context: Domestic **Example:** Farmstead
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province:
Aspect:
Elevation (in feet):
Slope:
Landform: other

Drainage:
Nearest Water Source:
Distance to Water(in feet):
Site Soils:
Adjacent Soils:

SITE CONDITION/SURVEY DESCRIPTION

City/County: **James City**

Site Dimensions: feet by feet **Acreage:**

Survey Strategy: Subsurface Testing

Site Condition: No Surface Deposits but With Subsurface Integrity

Threats to Resource:

Survey Description:

['85] Dimensions: approx. 150' N-S x 150' E-W. Limited shovel testing l revealed sparse concentration of fire-cracked rock; site is projected base on l similar landforms immediately upstream and downstream from this location. ['95] Site 44JC0365 was identified by the Colonial Williamsburg Foundation l (CWF) in 1985 during a Phase I cultural resources survey of the proposed l Route 199 corridor and underwent limited Phase II evaluation by CWF in 1987. l A more intensive Phase II study of the site was undertaken by WMCAR in 1995. l The additional Phase II study consisted of systematic shovel testing at 8m l intervals, and the excavation of four 1m x 2m units placed at artifact l concentrations.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? **Specimens Depository:**

Assemblage Description:

['85] Fire-cracked rock.
['95] 21 of the 153 shovel tests dug in 1995 were positive, l yielding 63 prehistoric artifacts and 28 historic artifacts. l The prehistoric artifacts from the shovel test included 56 l pieces of debitage, three ceramic sherds, two pieces of l fire-cracked rock, and one Rossville point. The historic l artifacts were mainly small pieces of brick but included four l pieces of window glass, five pieces of fence wire, and one l porcelain sherd. The 1995 test units yielded 590 prehistoric l artifacts including 565 pieces of debitage, 11 ceramic sherds, l eight pieces of fire-cracked rock, five bifaces, and one core. l Historic artifacts from the test units were limited to four l pieces of brick, one piece of coal, and a fragment of bottle l glass.
Depository: WMCAR.

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** WMCAR

City/County: **James City**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:**

DHR Library Reference Number:

Reference for reports and publications:

See Phase I report for the Route 199 Extension by the l
Colonial Williamsburg Foundation.

Report (s) ? Yes **Depository:** WMCAR

DHR Library Reference Number:

Reference for reports and publications:

See the report _Phase II Archaeological Evaluation of Site l
44JC365, Proposed Route 199 Project, James City County, l
Virginia_ (Higgins and Deitrick 1996), WMCAR.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes	WMCAR		9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1985/04/04

Organization and Person:
Organization: **First:** Colonial Williamsburg Found. (CW **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Survey:Phase II/Intensive **Date:** 1995/10/99

Organization and Person:
Organization: **First:** WMCAR-Thomas F. Higgins III **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: DHR Staff: Potentially Eligible **Date:** 1988/01/19

Organization and Person:
Organization: **First:** **Last:**
Sponsor Organization:
DHR Project Review File No: 1042-JC

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

City/County: **James City**

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency: State (indeterminate)

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0366**

DHR Site Number: 44JC0366 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Native American	Prehistoric/Unknown

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Camp
Comments/Remarks:
Settlement patterns.

Thematic Context: Domestic **Example:** Farmstead
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province:
Aspect:
Elevation (in feet):
Slope:
Landform: other

Drainage:
Nearest Water Source:
Distance to Water(in feet):
Site Soils:
Adjacent Soils:

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: feet by feet **Acreage:**

City/County: **James City**

Survey Strategy: Subsurface Testing

Site Condition: Unknown Portion of Site Destroyed

Threats to Resource:

Survey Description:

['85] Limited shovel testing revealed quartz core; site is projected based on l similar landforms immediatey upstream and downstream from this location. ['95] The site was identified during a Phase I survey for the proposed Route l 199 project in 1985, and was subject to Phase II evaluation in 1987, and l Phase III data recovery in 1988 (Hunter and Higgins 1985; Hunter et al. 1987; l Hunter et al. 1993). Additional Phase I shovel testing in 1995 identified l portions of the site within the revised right-of-way. Shovel tests were l placed at intervals of 75 feet or less.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? **Specimens Depository:**

Assemblage Description:
['85] Quartz core. See Phase I report for complete inventory.
['95] During the 1996 additional survey, five shovel tests were placed at l Site 44JC366 and one was positive. The positive shovel test contained one l possible wrought nail.
Depository: WMCAR.

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** WMCAR

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** WMCAR

DHR Library Reference Number:

Reference for reports and publications:

_A Phase II Evalutation Study of Archaeological Resources Within the Proposed l Route 199 Corridor (Hunter et al, 1987).

Report (s) ? Yes **Depository:** WMCAR

DHR Library Reference Number:

Reference for reports and publications:

_Phase III Data Recovery of Significant Archaeological l Resources Within the Proposed Route 199 Corridor, JAmes l City County, Virginia (Hunter et al., 1993).

City/County: **James City**

Report (s) ? Yes **Depository:** WMCAR

DHR Library Reference Number:

Reference for reports and publications:

Additional Phase I Archaeological Survey for the Proposed l Route 199 Project, James City County, Virginia (Higgins l et al., 1996), WMCAR.

Report (s) ? Yes **Depository:**

DHR Library Reference Number:

Reference for reports and publications:

See Phase I report for the Route 199 Extension by the l Colonial Williamsburg Foundation.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes	CWF		9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1985/04/04

Organization and Person:
Organization: **First:** Colonial Williamsburg Found. (CW **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1995/10/99

Organization and Person:
Organization: **First:** WMCAR-Thomas F. Higgins III **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Survey:Phase II/Intensive **Date:** 1987/99/99

Organization and Person:
Organization: **First:** Hunter et al. **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Archaeological Data Recovery **Date:** 1993/99/99

City/County: **James City**

Organization and Person:
Organization: **First:** Hunter et al. **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event:	Other	**Date:**	1997/04/08

Organization and Person:
Organization: **First:** WMCAR **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:
WMCAR site form identifies prehistoric temporal l affiliation as Middle and Late Woodland; CWF site form l identifies prehistoric temporal affiliation as possibly l Woodland.

Cultural Resource Management Event:	DHR Staff: Potentially Eligible	**Date:**	1988/01/19

Organization and Person:
Organization: **First:** **Last:**
Sponsor Organization:
DHR Project Review File No: 1042-JC

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0368**

DHR Site Number: 44JC0368 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Indeterminate	19th Century: 4th quarter
Indeterminate	20th Century: 1st half
Native American	Prehistoric/Unknown

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Camp
Comments/Remarks:
Settlement patterns.

Thematic Context: Domestic **Example:** Farmstead
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD **ZONE** **EAST** **NORTH**

Boundary UTM Coordinates (for 10 acres or more):

NAD **ZONE** **EAST** **NORTH**

Physiographic Province:
Aspect:
Elevation (in feet):
Slope:
Landform: other

Drainage:
Nearest Water Source:
Distance to Water(in feet):
Site Soils:
Adjacent Soils:

SITE CONDITION/SURVEY DESCRIPTION

City/County: **James City**

Site Dimensions: feet by feet **Acreage:**

Survey Strategy: Subsurface Testing

Site Condition: Unknown Portion of Site Destroyed

Threats to Resource:

Survey Description:

['85] House site indicated by domestic l vegetation and trash accumulations on l surface. Collapsed well feature, 12' l diameter present. Limited shovel l testing revealed concentration of l domestic artifacts.
['95] Site 44JC368 was identified in l 1985 during Colonial Williamsburg's l (CWF) Phase I Archaeological survey of l Route 199 and was subject to a Phase l II evaluation study in 1987 (Hunter l and Higgins 1985:39,40; Hunter et al. l 1987:114-117). The portions of site l 44JC368 found during the additional l 1996 survey were identified by l pedestrian survey, and screened (1/4") l shovel testing within the proposed l Route 199 right-of-way. Shovel tests l were placed at 75 ft. or less.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? **Specimens Depository:**

Assemblage Description:

['85] Coarseware, pearlware, whiteware, glass, tin, and misc. iron. See l Phase I report for complete inventory.
['95] Eleven artifacts from the 1996 survey included one piece of quartz l debitage, one bolt fragment, one piece of a nail, and eight pieces of bottle l and table glass.

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** WMCAR

City/County: **James City**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** CWF ?

DHR Library Reference Number:

Reference for reports and publications:

See Phase I report for the Route 199 Extension by the l Colonia Williamsburg Foundation.

Report (s) ? Yes **Depository:** WMCAR

DHR Library Reference Number:

Reference for reports and publications:

_A Phase II Evaluation of Archaeological Resources Within l the Proposed Route 199 Corridor (Hunter et al., 1987).

Report (s) ? Yes **Depository:** WMCAR

DHR Library Reference Number:

Reference for reports and publications:

Additional Phase I Archaeological Survey for the Proposed l Route 199 Project, James City County, Virginia (Higgins l et al, 1996), WMCAR.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes	CWF		9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1995/10/99

Organization and Person:
Organization: **First:** WMCAR **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Survey:Phase II/Intensive **Date:** 1987/99/99

Organization and Person:
Organization: **First:** Hunter et al. **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1985/03/19

City/County: **James City**

Organization and Person:
Organization: **First:** Colonial Williamsburg Found. (CW **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0383**

DHR Site Number: 44JC0383 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Native American	Woodland

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Camp, temporary
Comments/Remarks:
Limited activity site

LOCATION INFORMATION

USGS Quadrangle(s): NORGE **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: **Drainage:**
Aspect: **Nearest Water Source:**
Elevation (in feet): **Distance to Water(in feet):**
Slope: **Site Soils:**
Adjacent Soils:
Landform: other

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 50 feet by 50 feet **Acreage:**

Survey Strategy: Subsurface Testing

Site Condition: Site Condition Unknown

City/County: **James City**

Threats to Resource:

Survey Description:

Shovel testing revealed scatter of l
prehistoric artifacts sealed by l
colluvial deposits. Intact feature l
may be present. No evidence of l
plowing or other disturbance. l

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? **Specimens Depository:**

Assemblage Description:
Coarse sand-tempered (some crushed quartz), net-impressed l
ceramics, shell-tempered, unidentifiable surface treatment, l
quartzite flakes. See Phase I report for complete inventory.

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? **Depository:**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** CWF

DHR Library Reference Number:

Reference for reports and publications:

See Phase I report for the Rt. 199 extension by the l
Colonial Williamsburg Foundation.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
No			9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event:	Survey:Phase I/Reconnaissance	Date:	1985/03/11

City/County: **James City**

Organization and Person:
Organization: **First:** Colonial Williamsburg Found. (CW **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC0384**

DHR Site Number: 44JC0384 **Other DHR Number:**
Resource Name:
Temporary Designation:
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Native American	Woodland

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Camp, temporary
Comments/Remarks:
Limited activity site

LOCATION INFORMATION

USGS Quadrangle(s): NORGE **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres):

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: **Drainage:**
Aspect: **Nearest Water Source:**
Elevation (in feet): **Distance to Water(in feet):**
Slope: **Site Soils:**
Adjacent Soils:
Landform: other

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 60 feet by 60 feet **Acreage:**

Survey Strategy: Subsurface Testing

Site Condition: Site Condition Unknown

City/County: **James City**

Threats to Resource:

Survey Description:

Shovel testing revealed presence of l
prehistoric ceramics. Site may have l
fair amount of colluvium; needs l
further testing.

CURRENT LAND USE

Land Use: **Example:** **Dates of Use:**

Comments/Remarks:

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? **Specimens Depository:**

Assemblage Description:
Shell tempered, smoothed or scraped exterior
See phase I report for l
complete inventory.

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? **Depository:**

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** CWF

DHR Library Reference Number:

Reference for reports and publications:

See Phase I report for the Rt. 199 extension by the l
Colonial Williamsburg Foundation.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes			9999/99/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1985/03/13

City/County: **James City**

Organization and Person:
Organization: **First:** Colonial Williamsburg Found. (CW **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:

Honorif: **First:** **Last:**
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type:

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC1018**

DHR Site Number: 44JC1018 **Other DHR Number:**
Resource Name:
Temporary Designation: X-1
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
African American	18th Century: 4th quarter
African American	19th Century

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Dwelling, single

Comments/Remarks:
A house is shown in this location on the 1863 GIlmer Map. In addition, the location is shown adjacent the 19th-century Centerville free black settlement. The ethnicity is also indicated by evidence from a title search.

December 2011: Site 44JC1018 appears to represent a typical late 18th and 19th century farmstead associated first with a tavern and then adapted for reuse by the poorer free black occupants. The site consisted of a simple complex including a main dwelling, well, icehouse, and a fence line. The remnants of a possible fence were located near the northwestern edge of the cleared area, with the line probably continuing into the adjacent tract.

LOCATION INFORMATION

USGS Quadrangle(s): NORGE **Restrict UTM Data?**

Center UTM Coordinates (for less than 10 acres): NAD 18/341410/4131200/3

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: Coastal Plain
Aspect: Facing east
Elevation (in feet): 100.00
Slope: 2-6%
Landform: urban
Drainage: James River
Nearest Water Source: unnamed tributary of Powhatan Creek
Distance to Water(in feet): 900
Site Soils: Emporia fine sandy loam
Adjacent Soils: Slagle fine sandy loam

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 200 feet by 175 feet **Acreage:**

City/County: **James City**

Survey Strategy: Subsurface Testing
Surface Testing

Site Condition: Unknown Portion of Site Destroyed

Threats to Resource: Transportation Expansion
Development

Survey Description:

1999: The site was found by shovel-testing on 50-ft. intervals, with soils screened through 0.25-inch mesh. Phase II was conducted through eight 2.5-ft. squares, one 5-ft. square and a 2.5-by-5-ft. extension dug to one side to fully uncover a pit feature revealed in that square. The pit was tested and several other features were recorded but not excavated.

2005 JRIA Addition testing: Additional fieldwork for a Phase II significance evaluation of Site 44JC1018 was conducted through a series of small excavation squares used to sample the deposits and to confirm the presence or absence of subsurface features. Eighteen 3.00-foot square units and trenches were excavated to sterile subsoil. Soils were screened through ¼-inch wire mesh, and all artifacts were recovered.

The placement of test squares was determined by the results of the shovel testing conducted during the Phase I survey of the property, i.e., the locations of the largest numbers of artifacts, the earliest artifacts and indications of subsurface features. The James River Institute for Archaeology (JRIA) recorded another large pit or cellar feature located in the center of the second area of high artifact concentrations. After removal of topsoil in this area, the subsurface pit is approximately 10 by 12 feet in diameter with irregular shaped sides. This feature may be another clay borrow pit. Such features were generally used to obtain clay to use for daubing, especially for lining wooden chimneys, after which the open pit was typically refilled with trash.

December 2011: Circa~ conducted Phase III excavations on this site. This included excavation of 75 features.

CURRENT LAND USE

Land Use: Other **Example:** Other **Dates of Use:** 2011/12/99

Comments/Remarks:

The site was a plowed field at one time but is currently not
being used. The site has now grown over in young scrub pine and is a transition between old field and forest.

December 2011: In the early 2000s, this site was situated within a fallow, overgrown agricultural field flanked by Centerville Road to the west, Longhill Road to north, and late 20th century apartment buildings to the south and east. Currently, a gas station has been constructed on the site.

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** Cultural Resources, Inc., Williamsburg
James River Institute for Archaeology
Circa~

Assemblage Description:

1999: Numerous fragments of handmade brick, ball clay pipe fragments, bottle glass, window glass, table glass,sherds of pearlware, whiteware, coarse and refined earthenwares, porcelain, creamware, American blue and gray stoneware, American brown stoneware, black glazed redware, Albany Slip & Bristol glazed stoneware and other ceramics and misc. objects.

2005: In total, 2,787 historic artifacts were recovered from test unit excavation. The 2,787 historic artifacts included 390 (14%) ceramic sherds, 14 (.50%) white ball clay pipe stems and bowls, 1,362 (49%) glass fragments, 525 (19%) cut nail fragments, 53 (1.7%) miscellaneous fragments, 404 (14.4%) reddish brown handmade brick fragments, and 39 (1.4%) oyster shell fragments.

One thousand three hundred and sixty-two fragments of glass were recovered. Vessel forms included containers, window glass, table glass, jars, lamp chimney, and buttons. Nine hundred and twelve fragments or 67% of the glass assemblage dates from the early to mid 19th century while the remainder dates from circa post 1900 to present day.

Ceramic sherds recovered included 11 (2.8%) coarse earthenware, four (1.2%) refined earthenware, six (1.6%) creamware, 237 (60.8%) pearlware, 77 (19.7%) whiteware, two (.50%) yellow ware, 15 (3.8%) porcelain, and 38 (9.7%) stoneware. Of this number, 42 or 10.7% were potted in America, 15 or 3.8% in China, and 333 or 85.5% in England. Vessel forms included bowls, cups, saucers, plates, basins, flatwares, and hollowwares. Of the sherds recovered, 266 or 68.2% date from circa 1750-1835 and 124 or 31.8% date circa post 1840 to 1880. It is interesting to note that the earlier sherds mostly came from England while the sherds that date circa post 1840 were mostly potted in America, England, and China. White ball clay pipe stems indicated date ranges from circa 1710 to 1750.

December 2011:
In total, 8,824 artifacts were recovered from Phase III feature excavation. Of these, one or 0.01% was associated with Native American occupation of the site and 8,823 or 99.98% dated to the historic period. Native American material included one (0.01%) quartzite reduced cobble. Historic material included 3,497 (39.63%) domestic artifacts, 1,941 (21.99%) architectural artifacts, 2,971 (33.66%) metal artifacts, 183 (2.79%) faunal artifacts, 221 (2.50%) fuel-related artifacts, and 10 (0.11%) animal artifacts. Domestic artifacts included 673 (7.62%) ceramic sherds, 2,604 (29.51%) glass fragments, 35 (0.39%) white ball clay pipe bowl fragments, 51 (0.57%) white ball clay pipe stems, one (0.01%) white ball clay pipe stem fragment, two (0.02%) Pamplin pipe bowl fragments, two (0.02%) Pamplin pipe stem fragments, one (0.01%) pipe bowl fragment, one (0.01%) opaque white glass button fragment, one (0.01%) two-piece brass button, one (0.01%) porcelain doorknob, one (0.01%) doorknob fragment, three (0.03%) doorbell fragments, one (0.01%) clear canning jar lid, five (0.05%) opaque white canning jar lid liners, eight (0.09%) zinc canning jar lid fragments, one (0.01%) leather attachment head tack, two (0.02%) leather fragments, 77 (0.87%) leather shoe fragments, one (0.01%) leather shoe heel, three (0.03%) electric fragments, one (0.01%) plastic bottle lid, one (0.01%) shotgun shell cap, three (0.03%) shotgun shell fragments, one (0.01%) wheel, one (0.01%) teapot spout, six (0.06%) rubber fragments, one (0.01%) cast iron fragment, one (0.01%) cast iron skillet, three (0.03%) cast iron hub fragments, one (0.01%) oil lamp fragment, two (0.02%) knife sharpening stone fragments, one (0.01%) lead pistol shot, and one (0.01%) fired lead shot. Domestic ceramic sherds included 336 (3.80%) pearlware sherds, 11 (0.125%) coarse earthenware sherds, three (0.03%) refined earthenware sherds, 83 (0.94%) stoneware sherds, one (0.01%) stoneware jug, one (0.01%) slipware sherd, 199 (2.25%) whiteware sherds, four (0.04%) bisques porcelain sherds, 22 (0.24%) porcelain sherds, seven (0.07%) porcelain beer bottle stoppers, five (0.05%) creamware sherds, and one (0.01%) yellowware sherd. Domestic glass fragments included 1,472 (16.68%) clear bottle glass fragments, 16 (0.18%) clear glass fragments, 18 (0.20%) clear tableware glass fragments, 63 (0.71%) clear jars, 71 (0.80%) clear bottles, 30 (0.33%) clear hurricane lamp globe fragments, 17 (0.19%) clear tableware fragments, seven (0.07%) clear canning glass fragments, two (0.02%) clear jar fragments, five (0.05%) clear flat glass fragments, 290 (3.28%) aqua bottle glass fragments, 30 (0.33%) aqua bottles, 28 (0.31%) aqua canning jar glass fragments, 17 (0.19%) solarized amethyst tableware glass fragments, 253 (2.86%) solarized amethyst bottle glass fragments, 10 (0.11%) solarized amethyst bottles, 80 (0.90%) amber bottle glass fragments, 18 (0.20%) amber bottles, 54 (0.61%).dark green bottle glass fragments, two (0.02%) dark green bottles, three (0.03%) bright green bottle glass fragments, seven (0.07%) bright green bottles, nine (0.10%) olive green bottle glass fragments, one (0.01%) lime green bottle glass fragments, two (0.02%) medium green bottle glass fragments, one (0.01%) green bottle glass fragment, 24 (0.27%) cobalt blue bottle glass fragments, two (0.02%) light green bottle glass fragments, two (0.02%) cobalt blue bottles, 15 (0.16%) bottle glass fragments, four (0.04%) opaque white tableware glass fragments, two (0.02%) carnival glass tableware fragments, 33 (0.37%) pink tableware glass fragments, one (0.01%) glass stopper, two (0.02%) tableware glass fragments, one (0.01%) opaque white lamp shade glass fragment, nine (0.10%) opaque white glass fragments, and three (0.03%) bottle glass wire bale attachment fragments. Architectural artifacts included one (0.01%) clear window glass fragment, 350 (3.96%) aqua window glass fragments, 843 (9.55%) cut nail fragments, 81 (0.91%) cut nails, 38 (0.43%) wire nail and nail fragments, 427 (4.83%) reddish brown handmade brick fragments, one (0.01%) reddish orange handmade brick fragment, one (0.01%) buff handmade brick fragment, one (0.01%) burned brick fragments, eight (0.09%) sand-tempered mortar fragments, 176 (1.99%) shell-tempered plaster fragments, four (0.04%) shell- and sand-tempered plaster fragments, two (0.02%) terra cotta tile fragments, two (0.02%) wooden boards, and six (0.06%) plate glass fragments. Metal artifacts included one (0.01%) brass washer, 74 (0.83%) iron strap fragments, 139 (1.57%) tin bucket fragments, 142 (1.60%) iron fragments, two (0.02%) iron lid fragments, one (0.01%) stamped brass thin bucket fragment, two (0.02%) lead shot, one (0.01%) coin, five (0.05%) iron bolt fragments, two (0.02%) iron nuts, two (0.02%) iron eye bolt fragments, one (0.01%) iron cotter pin fragment, one (0.01%) fencing staple fragment, two (0.02%) iron S-hook and hook fragments, 14 (0.15%) cut spike fragments, six (0.06%)

iron wire fragments, one (0.01%) iron spring fragment, one (0.01%) screw fragment, 2,162 (24.50%) tin can fragments, six (0.06%) iron tin can key openers, four (0.04%) iron chain link fragments, eight (0.90%) iron bucket fragments, 14 (0.15%) iron pipe fragments, one (0.01%) tin box fragments, one (0.01%) knife handle fragment, seven (0.07%) iron angle fragments, one (0.01%) brass lock fragment, nine (0.10%) brass sheet fragments, seven (0.07%) brass flashlight fragments, one (0.01%) metal spring, two (0.02%) iron washers, one (0.01%) lead weight, two (0.02%) metal bottle lids, one (0.01%) iron pliers fragment, one (0.01%) iron spike fragment, one (0.01%) stainless steel wire fragment, one (0.01%) thin metal cap, one (0.01%) battery fragment, one (0.01%) pan, one (0.01%) iron bail handle, one (0.01%) iron bucket rim, nine (0.10%) iron buckets, three (0.03%) pan fragments, two (0.02%) metal can necks, one (0.01%) steel nut, four (0.04%) stainless steel fragments, one (0.01%) brass screw, one (0.01%) brass zipper, one (0.01%) tin can, one (0.01%) road sign fragment, two (0.02%) iron files, eight (0.90%) iron saw blade and blade fragments, one (0.01%) iron spoke fragment, one (0.01%) iron hub gear fragment, one (0.01%) stainless steel tie down ring, one (0.01%) iron strap hinge fragment, four (0.04%) tin jar lid fragments, one (0.01%) iron knife blade fragment, 22 0.24%) tin fragments, three (0.03%) tin bottle cap fragments, two (0.02%) iron chisel fragments, one (0.01%) iron shim, one (0.01%) brass rivet fragment, 193 (2.18%) enameled metal bucket fragments, 19 (0.21%) enameled pan fragments, one (0.01%) enameled pan handle, one (0.01%) enameled pan, one (0.01%) sheet metal fragment, four (0.04%) brass fragments, three (0.03%) cut spikes, one (0.01%) iron hinge, one (0.01%) iron hinge fragment, one (0.01%) iron plane fragment, 10 (0.11%) iron handle fragments, one (0.01%) iron bar fragment, four (0.04%) galvanized pan fragments, one (0.01%) iron shovel fragments, two (0.02%) iron rod fragments, five (0.05%) iron farm implement fragments, one (0.01%) iron plow, one (0.01%) iron wagon wheel fragment, three (0.03%) iron wagon wheels, one (0.01%) iron bracket fragment, two (0.02%) iron pot fragments, one (0.01%) horseshoe fragment, one (0.01%) iron buckle, two (0.02%) iron wagon fragments, seven (0.07%) pewter fragments, one (0.01%) enameled pot fragment, and one (0.01%) iron spike. Faunal artifacts included two (0.02%) clam shell fragments, 178 (2.01%) oyster shell fragments, and three (0.03%) walnut fragments. Fuel-related artifacts included 64 (0.72%) charred wood fragments, 91 (1.03%) coal clinkers, two (0.02%) coal fragments, and 64 (0.72%) wood fragments. Animal artifacts included four (0.04%) fowl bone fragments, one (0.01%) bone fragment, and five (0.05%) swine tusks.

Specimens Reported? Yes

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** Cultural Resources Inc., Williamsburg
James River Institute for Archaeology
Circa~

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** VDHR

DHR Library Reference Number: JC-229

Reference for reports and publications:

Phase I and II Archaeological Investigations of The Liguria Tract, 44JC1018, James City County, Virginia. Cultural Resources, Inc.
Prepared by: Douglas C. McLearen, Matthew R Laird, Ph.D., Carol D. Tyrer. July 1999

Report (s) ? Yes **Depository:** VDHR

DHR Library Reference Number: JC-235

Reference for reports and publications:

Additional Phase II Archaeological Investigations of The Liguria Tract, 44JC1018, James City County, Virginia

Carol D. Tyrer and Matthew R. Laird, Ph.D.
August 2005

Report (s) ? Yes **Depository:** VDHR

DHR Library Reference Number:

Reference for reports and publications:

Circa~ Cultural Resource Management, L.L.C.
2010 Treatment Plan for Site 44JC1018 The Ligeria Tract James City County, Virginia.

City/County: **James City**

Report (s) ? Yes **Depository:** VDHR

DHR Library Reference Number:

Reference for reports and publications:

Circa~
2011 Phase III Archaeological Excavations at Site 44JC1018
The Liguria Tract James City County, Virginia.

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
	CRI, Williamsburg	B&W 35mm Photos	1999/01/25
	Circa~	B&W digital images	2010/06/99

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 1999/01/25

Organization and Person:
Organization: Cultural Resource **First:** **Last:**
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event: PIF Deferred **Date:** 2005/06/15

Organization and Person:
Organization: **First:** **Last:** VDHR
Sponsor Organization:
DHR Project Review File No: 1999-0521

CRM Event Notes or Comments:
unable to concur, limited additional phase II evaluation recommended

Cultural Resource Management Event: Other **Date:** 2005/99/99

Organization and Person:
Organization: James River Inst **First:** Carol D. **Last:** Tyrer
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:
2005: JRIA conducted additional testing at this site.

Cultural Resource Management Event: DHR Staff: Eligible **Date:** 2005/09/14

Organization and Person:
Organization: VDHR **First:** **Last:**
Sponsor Organization:
DHR Project Review File No: 1999-0521

CRM Event Notes or Comments:

City/County: James City

NATIONAL REGISTER ELIGIBILITY RATING SHEET

ARCHEOLOGICAL SITE INVENTORY NUMBER: 44JC1018
Site Name (If available):
DATE RATED: 14 September 2005
REASON for COMMITTEE OPINION: Requested by Bacon Environmental
DOCUMENTATION: Additional Phase II Archaeological Investigations of the Liguria Tract, 44JC1018, James City County, Virginia
A. CATEGORIES
VDHR Theme(s): Settlement Patterns, Minority Communities
NRHP Property Type: Archaeological Site
Period(s) of Significance: 1800-1875
Area(s) of Significance: Historic Archaeology
B. NRHP CRITERIA
Criterion A: X
Criterion D: X
C. LEVEL OF SIGNIFICANCE: _X__ State
D. ASSIGNMENT of BASIC POINTS
1. Representation in archeological data base (1 to 10)
__8___
2. Integrity
a. Horizontal (1 to 10)
__5___
b. Vertical (1 to 10)
__7___
3. Research Potential (1 to 20)
__12___
4. Unusually good representative of type (1 to 3)
__0____
5. Illustrates history/Cultural minorities (1 to 3)
__1____
6. Offers Exceptional Potential for Study and Interpretation (1 to 3)
___0___
TOTAL POINTS: 32

RECOMMENDATION: __X__ ELIGIBLE

DHR CONCURRENCE: __X__ YES ____ NO

COMMITTEE MEMBERS PRESENT: ____ERE_____RWK_____JLW_____
JUSTIFICATION: Site represents a domestic occupation dating between 1800 and 1875, possibly associated with the adjacent freedman settlement of Centerville. Supplemental evaluation identified several features and recovered artifacts similar to those recovered from Centerville sites in some ways and vastly different in others (for example, the ceramics recovered from 44JC1018 are predominately flatwares and of British manufacture, while the ceramics recovered from Centerville are predominately hollowwares and of domestic manufacture). Site presents some interesting comparative possibilities.

Cultural Resource Management Event: Archaeological Data Recovery **Date:** 2011/12/99

Organization and Person:
Organization: Circa~ **First:** Carol D. **Last:** Tyrer
Sponsor Organization:
DHR Project Review File No: 1991-0521

CRM Event Notes or Comments:
December 2011: In the summer and fall of 2010, Circa~ completed Phase III archaeological excavations at Site 44JC1018, located in James City County, Virginia prior to construction of a gas station on the site.

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

City/County: **James City**

Individual Category Codes:
Owner of property
Honorif: **First:** Whit **Last:** Richardson
Suffix:
Title:
Company/
Agency:

Address: 196 West Queens Drive

City: Williamsburg **State:** Virginia **Zip:** 23185
Phone/Ext: - -
- -
Notes:

Individual Category Codes:
Occupant, Former
Honorif: Ms. **First:** Anna **Last:** Liguria
Suffix:
Title:
Company/
Agency:

Address:

City: **State:** **Zip:**
Phone/Ext:

Notes:

Ownership Type: Private

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC1114**

DHR Site Number: 44JC1114 **Other DHR Number:**
Resource Name:
Temporary Designation: CL5
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Euro-American	18th Century: 4th quarter
Euro-American	19th Century
Euro-American	20th Century

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Trash scatter
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?** No

Center UTM Coordinates (for less than 10 acres): NAD 18/4130820/345340

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: Coastal Plain
Aspect: Flat
Elevation (in feet): 110.00
Slope: 2-6%
Drainage: James River
Nearest Water Source: Chisel Run
Distance to Water(in feet): 3,400
Site Soils: Suffolk Fine Sandy Loam
Adjacent Soils: Kempsville-Emporia Fine Sandy Loam
Landform: terrace

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 650 feet by 430 feet **Acreage:** 6.41

City/County: **James City**

Survey Strategy: Subsurface Testing
Surface Testing

Site Condition: Surface Deposits Present But With No Subsurface Integrity

Threats to Resource:

Survey Description:

SURVEY DESCRIPTION
ARCHAEOLOGICAL SITE CL5

CL5

Isolated finds area CL5, located within the northernmost field of the project area, extended from the edge of Olde Towne Road, eastward to the forested area that bordered a housing development. This area was comprised of 35 positive shovel tests and 15 positive supplemental shovel tests (25' intervals). The artifacts recovered included fragments of creamware, pearlware, whiteware, Albany slipware, modern bottle glass, coal, slate, window glass, nineteenth century wine bottle glass, and handmade brick. These artifacts date CL5 to between the last quarter of the eighteenth century to the twentieth century. This location was classified as a trash scatter due to the thin distribution of artifacts, their wide date range, and the absence of known subsurface features. No further work is recommended.

CURRENT LAND USE

Land Use: Subsistence/A **Example:** Agricultural field **Dates of Use:** 2003/01/01

Comments/Remarks:
Fallow Field

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** Archaeological & Cultural Solutions, Inc.

Assemblage Description:

City/County: James City

Artifact Inventory Site CL5

Tr. 2/12	1	Bottle frag.; amber, modern
Tr. 2/12 East	1	American gray stoneware hollowware frag.; 1720-1900
	1	Glass frag.; colorless, modern
	1	Brick frag.; handmade
	1	Strap frag.; iron
	1	Coal frag.
Tr. 3/9	1	Window glass frag.; colorless, 19th/20th c.
	2	Coal frags.
Tr. 3/9 East	1	Brick frag.; handmade
	1	Oyster shell frag.
Tr. 3/11	1	Pearlware frag.; 1780-1840
Tr. 3/11 West	1	Creamware frag.; 1770-1820
	1	Nail frag.; wire
Tr. 3/11 South	1	Creamware frag.; 1770-1820
	2	Bottle glass frags.; modern
	1	Slate frag.
	1	Coal frag.
	1	Bog iron frag.
Tr. 4/9	1	Nail, wrought; pre-1790
Tr. 4/12	1	Oyster shell frag.
Tr. 5/7	1	Pharmaceutical bottle frag.; colorless, 19th c.
Tr. 5/11	1	Brick frag.; handmade
	3	Coal frags.
Tr. 5/11 West	1	Bottle frag.; colorless, 19th/20th c.
Tr. 5/11 South	1	Window glass frag.; colorless, 19th c.
	2	Brick frags.; handmade
Tr. 6/5	2	Nail frags.; wire, heavily corroded
Tr. 6/9	1	Brick frag.; handmade
Tr. 6/9 North	1	Bottle frag.; pale aqua, 19th c.
Tr. 6/9 East	1	Whiteware frag.; 1840+
Tr. 6/12	1	Chunk; quartzite
Tr. 6/13	1	Bottle frag.; colorless, 20th c.
Tr. 7/8	1	Bottle frag.; aqua, 19th c.
	1	Bottle frag.; 1916+
	1	Oyster shell frag.

Tr. 7/8 East	2	Brick frags.; handmade
	1	Hook; “S” shaped, iron
	1	Coal frag.
Tr. 7/9	2	Tableware frags.; colorless, 19th c.
Tr. 7/9 South	1	Whiteware frag.; 1840+
	1	Brick frag.; handmade
Tr. 8/4	1	Wine bottle frag.; olive, 19th c.
	1	Coal frag.
Tr. 8/8	1	Whiteware plate frag.; 1840+
1	Tableware frag.; solarized, 1880+	
Tr. 8/9	2	Coal frags.
Tr. 9/3	1	Oyster shell frag.
Tr. 9/4	1	Oyster shell frag.
Tr. 9/8	1	Window glass frag.; olive, 18th c.
	1	Brick frag.; handmade
	2	Coal frags.
Tr. 9/10	1	Brick frag.; handmade
Tr. 10/Surface	1	Insulator; porcellaneous, 20th c.
Tr. 10/6	1	Albany slipware frag.; 1850+
Tr. 10/7	1	Brick frag.; handmade
Tr. 11/3	1	Shotgun cartridge; plastic, modern
Tr. 11/5	1	Delftware frag.; cobalt blue handpainted decoration, 18th c.
Tr. 11/7	1	Coal frag.
Tr. 11/8	1	Window glass frag.; colorless, 19th/20th c.
	1	Oyster shell frag.
Tr. 11/9	1	Window glass frag.; colorless, 19th/20th c.
Tr. 12/3 East	1	Bottle frag.; light green, 1916+
	1	Bottle frag.; colorless, 20th c.
Tr. 12/ 6	2	Brick frags.; handmade
Tr. 12/7	2	Brick frags.; handmade, 1 burnt
Tr. 12/7 South	1	Bottle frag.; colorless, modern
Tr. 12/7 West	1	Wine bottle frag.; olive, 19th c.

City/County: James City

Tr. 12/8	1	Mortar frag.
Tr. 12/9	1	Creamware frag.; 1770-1820
Tr. 12/11	1	Brick frag.; handmade
Tr. 12/11 North	2	Brick frags.; handmade
Tr. 13/3	1	Tableware frag.; colorless, modern
Tr. 13/5	3	Coal frags.
Tr. 14/Surface	1	Glass frag.; colorless, 19th c.
	1	Oyster shell frag.
	1	Clam shell frag.; fossilized
	2	Oyster shells
Tr. 14/5	2	Bottle glass frag.; colorless, 20th c.
	1	Flake; quartzite, small, primary thinning
	2	Coal frag.s
Tr. 15/5	4	Bottle frags.; colorless, 20th c.
Tr. 15/5 East	1	Bottle frag.; colorless, 20th c.

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** Archaeological & Cultural Solutions, Inc.

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** Archaeological & Cultural Solutions, Inc.

DHR Library Reference Number:

Reference for reports and publications:

Phase I and Phase II Archaeological Investigations for the Proposed Colonies of Williamsburg, James City County, Virginia

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
	ACS	35mm Black and White	2003/05/01
	ACS	35mm Color Slides	2003/05/01

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 2002/12/01

City/County: **James City**

Organization and Person:
Organization: **First:** **Last:** ACS
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event:	Survey:Phase II/Intensive	**Date:**	2003/03/30

Organization and Person:
Organization: **First:** **Last:** ACS
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:
Property Manager
Honorif: Mr. **First:** Richard **Last:** Costello
Suffix:
Title: President
Company/ Agency: AES Consulting Engineers

Address: 5248 Olde Towne Road, Suite 1

City: Williamsburg **State:** Virginia **Zip:** 23188
Phone/Ext: 757-253-0040

Notes:

Ownership Type: Private

Government Agency:

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: **44JC1115**

DHR Site Number: 44JC1115 **Other DHR Number:**
Resource Name:
Temporary Designation: CL6
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Euro-American	19th Century
Euro-American	20th Century
Native American	Woodland

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Settlement Patterns **Example:** Lithic scatter
Comments/Remarks:

Thematic Context: Domestic **Example:** Trash scatter
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?** No

Center UTM Coordinates (for less than 10 acres): NAD 18/4130620/345300

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: Coastal Plain
Aspect: Flat
Elevation (in feet): 110.00
Slope: 2-6%
Drainage: James River
Nearest Water Source: Chisel Run
Distance to Water(in feet): 2,300
Site Soils: Suffolk Fine Sandy Loam
Adjacent Soils: Kempsville-Emporia Fine Sandy Loam

Landform: terrace

City/County: **James City**

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 550 feet by 300 feet **Acreage:** 3.78

Survey Strategy: Informant
Subsurface Testing

Site Condition: Surface Deposits Present And With Subsurface Integrity

Threats to Resource:

Survey Description:

SURVEY DESCRIPTION
ARCHAEOLOGICAL SITE CL6
CL6
Background
Located 100' south of CL5, at the edge of a former section of Olde Towne Road, CL6 was comprised of 24 positive shovel tests at 50' intervals and 34 positive supplemental shovel tests at 25' intervals. These shovel tests yielded artifacts ranging in date from prehistoric to modern which included: one Guilford projectile point, quartz debitage, and fragments of creamware, whiteware, modern bottle glass, and handmade brick.
Phase II Excavations
Since architectural artifacts (e.g. handmade brick) were recovered, three exploratory trenches (Trenches 1-3) were excavated to subsoil within CL6 (see Figure17). Trench 1 ran 498' along the north/south axis. This trench revealed portions of a two foot wide zig-zag fence ditch (F1), which ran diagonally along a north/south axis (see Plate 15 and Figure18), and a 1.5' wide boundary ditch (F2) that ran perpendicular to the trench. Trench 2 ran 147' along an east/west axis and it intersected the northern portion of Trench 1. A portion of the zig-zag fence ditch (F1) was recorded within Trench 2. Trench 3, which ran 198' along an east/west axis, contained another segment of the zig-zag fence ditch (F1). A portion of the zig-zag fence ditch was excavated to subsoil. The artifacts recovered from the plowzone in Trenches 1, 2, and 3 consisted of a mixture of late eighteenth, and nineteenth century material culture which included fragments of creamware, pearlware, wine bottle glass, coal, handmade brick, and wrought nails.

Classified as trash scatter, CL6 consisted of a collection of very widely dated artifacts (prehistoric to twentieth century) spread over a wide area. Although sections of linear features were sampled, no further work is recommended at CL6 as their character has been recorded and they undoubtedly extend across large sections of the project area.

CURRENT LAND USE

Land Use: Subsistence/A **Example:** Agricultural field **Dates of Use:** 2003/01/01

Comments/Remarks:
Fallow Field

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** Archaeological & Cultural Solutions, Inc.

Assemblage Description:

City/County: James City

Artifact Inventory Site CL6

Tr. 1/14	1	Bottle frag.; colorless, modern
	1	Bottle frag.; amber, modern
Tr. 1/14 South	1	Tableware frag.; yellow/green, depression glass, early 20th c.
	3	Bottle frags.; amber, modern
	1	Glass frag.; colorless, modern
Tr. 1/14 East	1	Brown stoneware hollowware frag.; English, 18th c.
	1	Bottle frag.; colorless, modern
Tr. 1/15	1	Bottle frag.; amber, modern
	1	Plastic frag.; white
Tr. 1/15 East	1	Brick frag.; handmade
	1	Plastic frag.; green
	2	Coal frags.
Tr. 1/15 South	2	Creamware frags.; 1770-1820
	1	Bottle glass frag.; amber, modern
Tr. 1/17	1	Chinese export frag.; blue under glaze decoration, 18th c.
Tr. 1/17 West	1	Nail, wire; 1850+
Tr. 1/17 North	1	Strap frag.; iron
	1	Coal frag.
Tr. 1/18	3	Brick frags.; handmade
	1	Nail, cut; 1790-1820, heavily corroded
	2	Slate frags.; burned
	5	Coal frags.
Tr. 1/18 South	1	Bottle rim frag.; colorless, 19th/20th c.
	1	Brick frag.; handmade
	1	Nail frag.; heavily corroded
	3	Coal frags.
	1	Oyster shell frag.
Tr. 1/18 East	1	Wine bottle frag.; olive, 18th c.
Tr. 1/18 West	1	Stemware rim frag.; colorless, 18th c.
	4	Brick frag.; handmade
	2	Coal frags.
Tr. 1/19	2	Yellowware frags.; 1840-1900
	3	Bottle frags.; colorless, 19th/20th c.
	2	Brick frag.; handmade
	2	Coal frags.
	1	Oyster shell frag.
Tr. 1/19 West	2	Coal frags.
	2	Cinders
	1	Oyster shell frag.

City/County: James City

Tr. 1/21	1	Window glass frag.; colorless, 19th/20th c.
	3	Brick frags.; handmade, 1 burnt
Tr. 1/21 West	2	Brick frags.; handmade
Tr. 1/21 North	1	Brick frag.; handmade
	5	Coal frags.
Tr. 1/23	1	Bottle frag.; colorless, 19th/20th c.
	3	Brick frags.; handmade
Tr. 1/23 West	1	Bottle frag.; colorless, 19th/20th c.
Tr. 2/13	1	Tableware frag.; green, Depression glass, early 20th c.
	1	Tableware frag.; colorless, 19th/20th c.
	1	Bottle frag.; amber, modern
Tr. 2/13 West	2	Bottle frags.; amber, modern
Tr. 2/13 South	1	Creamware frag.; 1770-1820
	1	Glass frag.; colorless, 19th c.
	1	Bottle frag.; amber, modern
	1	Coal frag.
	1	Chunk; quartz, small
Tr. 2/15	1	Projectile point; Guillford, Archaic, 4,000 B.C.
Tr. 2/17	1	Creamware frag.; 1770-1820
	1	Nail frag; cut, heavily corroded
	1	Coal frag.
Tr. 2/17 North	1	Bottle neck frag.; colorless, late 19th/20th c.
Tr. 2/18	1	Porcellaneous frag.; 1820+
	1	Pearlware frag.; 1780-1840
1	Delftware frag.; 18th c.	
	3	Brick frags.; handmade
	1	Nail frag.; cut, heavily corroded
	1	Coal frag.
Tr. 2/20	1	Bottle frag.; aqua, 19th c.
Tr. 2/20 West	1	Tableware frag.; solarized, 1880+
	1	Brick frag.; handmade
	1	Bullet; lead, 1865+
Tr. 2/20 East	1	Tableware frag.; colorless, modern
Tr. 2/22	1	Brick frag.; handmade
Tr. 3/17	1	Chunk; quartz, small
Tr. 3/17 North	1	Tableware frag.; colorless, 19th/20th c.
	1	Brick frag.; handmade
	1	Coal frag.

Tr. 3/17 South	1	Oyster shell frag.
Tr. 3/18	1	Brick frag.; handmade
Tr. 3/18 East	4	Coal frags.
Tr. 3/18 South	1	Window glass frag.; colorless, 19th/20th c.
	1	Oyster shell frag.
Tr. 3/18 North	1	Oyster shell frag.
Tr. 3/21	1	Brick frag.; handmade, glazed
Tr. 3/21 South	1	Brick frag.; handmade
Tr. 3/21 East	1	Oyster shell frag.
Tr. 3/22	2	Oyster shell frags.
Tr. 3/22 South	1	Brick frag.; handmade
Tr. 3/22 East	4	Brick frags.; handmade
	2	Coal frags.
Tr. 3/22 West	4	Brick frags.; handmade
	1	Nail frag.; wire, heavily corroded
Tr. 3/23	4	Brick frags.; handmade, 1 glazed
Tr. 3/23 East	10	Brick frags.; handmade
Tr. 3/23 South	3	Brick frags.; handmade
Tr. 3/23 West	6	Brick frags.; handmade
	1	Coal frag.
Tr. 4/Surface	1	Chinese porcelain frag.; 18th c.
	1	Porcellaneous frag.; 1820+
	1	Whiteware frag.; 1840+
	1	Brick bat; handmade, 4.0” W x 2.6” H
	3	Brick frags.; handmade
	2	Mortar frags.; sand tempered with some shell inclusions
	6	Oyster shell frags.
Tr. 4/16	1	Glass frag.; pale aqua, 19th c.
	1	Brick frag.; handmade
Tr. 4/16 North	1	Brick frags.; handmade
Tr. 4/18	1	Coal frag.
Tr. 5/17	1	Coal frag.
Tr. 5/17 East	2	Oyster shell frags.
Tr. 5/17 West	1	Whiteware frag.; 1840+

Tr. 5/25 6 Brick frags.; handmade
1 Coal frag.

Tr. 6/15 1 Pipe stem frag.; English, white ball clay, 5/64” bore, 1607-1800

Trench 1/Plowzone 2 Whiteware frags.; multiple, 1 rim, 1830+
1 Pearlware plate frag.; blue shell edged decoration, 1815
1 Creamware frag.; 1760-1820
1 Pipe bowl frag.; English, white ball clay, 18th c.
3 Wine bottle frags.; olive, 18th/19th c,
11 Brick frags.; handmade
5 Nails, wrought; pre-1790
2 Nail frags.; wrought
1 Spike; iron
1 Sheet metal frag.; cast iron
7 Coal frags.
1 Coke frag.
1 Chunk; quartz
1 Oyster shell frag.

Trench 2/Plowzone 1 Pearlware/transitional hollowware frag.; embossed decoration, 1830

Specimens Reported?

Assemblage Description--Reported:

Field Notes Reported? Yes **Depository:** Archaeological & Cultural Solutions, Inc.

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** Archaeological & Cultural Solutions, Inc.

DHR Library Reference Number:

Reference for reports and publications:

Phase I and Phase II Archaeological Investigations for the Proposed Colonies of Williamsburg, James City County, Virginia

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date
	ACS	35mm Black and White	2003/05/01
	ACS	35mm Color Slides	2003/05/01

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 2002/12/01

City/County: **James City**

Organization and Person:
Organization: **First:** **Last:** ACS
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

Cultural Resource Management Event:	Survey:Phase II/Intensive	**Date:**	2003/03/30

Organization and Person:
Organization: **First:** **Last:** ACS
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:
Property Manager
Honorif: Mr. **First:** Richard **Last:** Costello
Suffix:
Title: President
Company/ Agency: AES Consulting Engineers

Address: 5248 Olde Towne Road, Suite 1

City: Williamsburg **State:** Virginia **Zip:** 23188
Phone/Ext: 757-253-0040

Notes:

Ownership Type: Private

Government Agency:

City/County: James City

Report Generated on: 8/9/2013

City/County: **James City**

DEPARTMENT OF HISTORIC RESOURCES
ARCHAEOLOGICAL REPORT

DHR ID#: 44JC1116

DHR Site Number: 44JC1116 **Other DHR Number:**
Resource Name:
Temporary Designation: CL7
Site Class: Terrestrial, open air

CULTURAL/TEMPORAL AFFILIATION

Cultural Designation	Temporal Designation
Euro-American	18th Century: 4th quarter
Euro-American	19th Century
Euro-American	20th Century

THEMATIC CONTEXTS/SITE FUNCTIONS

Thematic Context: Domestic **Example:** Trash scatter
Comments/Remarks:

LOCATION INFORMATION

USGS Quadrangle(s): WILLIAMSBURG **Restrict UTM Data?** No

Center UTM Coordinates (for less than 10 acres): NAD 18/4130670/345450

NAD	ZONE	EAST	NORTH

Boundary UTM Coordinates (for 10 acres or more):

NAD	ZONE	EAST	NORTH

Physiographic Province: Coastal Plain
Aspect: Flat
Elevation (in feet): 100.00
Slope: 2-6%
Drainage: James River
Nearest Water Source: Chisel Run
Distance to Water(in feet): 2,000
Site Soils: Suffolk Fine Sandy Loam
Adjacent Soils: Kempsville-Emporia Fine Sandy Loam
Landform: terrace

SITE CONDITION/SURVEY DESCRIPTION

Site Dimensions: 620 feet by 300 feet **Acreage:** 4.27

City/County: **James City**

Survey Strategy: Subsurface Testing

Site Condition: Surface Deposits Present But With No Subsurface Integrity

Threats to Resource:

Survey Description:

SURVEY DESCRIPTION
ARCHAEOLOGICAL SITE CL7

CL7

Located 100’ south of CL5 and 150’ east of CL6, isolated finds area CL7 consisted of a thin distribution of late eighteenth century to modern artifacts. There were 12 positive shovel tests and six positive supplemental shovel tests which yielded fragments of Albany slipware, a cut nail, handmade brick, a nineteenth century phial, mortar, and twentieth century bottle glass. No further work is required at CL7 due to the thin distribution and wide range in date of the artifacts recovered in this trash scatter.

CURRENT LAND USE

Land Use: Subsistence/A **Example:** Agricultural field **Dates of Use:** 2003/01/01

Comments/Remarks:
Fallow Field

SPECIMENS, FIELDNOTES, DEPOSITORIES

Specimens Obtained? Yes **Specimens Depository:** Archaeological & Cultural Solutions, Inc.

Assemblage Description:

City/County: James City

Artifact Inventory Site CL7

Tr. 10/16	1	Nail, cut; 1790-1820
Tr. 11/15	2	Nails; heavily corroded
Tr. 11/15 West	1	Brick frag.; handmade
Tr. 11/16	1	Albany slipware frag.; 1850+
Tr. 12/14	1	American gray stoneware hollowware frag.; finger print present, 1720-1800
	1	Coal frag.
Tr. 13/11 East	1	Tableware frag.; colorless, 19th/20th c.
	1	Bottle frag.; colorless, 19th/20th c.
	1	Projectile point distal tip frag.; quartzite
Tr. 13/13	1	Tableware frag.; colorless, modern
Tr. 13/13 North	1	Nail, wrought; pre-1790
Tr. 13/13 East	1	Tableware frag.; solarized, 1880+
	2	Coal frags.
Tr. 13/19	1	American brown stoneware hollowware frag.; 1720-1820
	1	Bottle frag.; colorless, 19th/20th c.
Tr. 14/13	1	Phial frag.; colorless, 19th c.
Tr. 14/15 North	1	Brick frag.; handmade
Tr. 14/20	1	Pearlware frag.; blue transfer printed decoration, 1795-1820
	1	Oyster shell frag.
Tr. 15/18	1	Pearlware frag.; 1780-1840
Tr. 16/9	1	Terracotta frag.; incised geometric decoration, 20th c.
	1	Vinyl frag.; red
	1	Charred wood frag.
Tr. 16/9 West	3	Bottle frags.; colorless, 1903+
Tr. 16/11	1	Bottle frag.; soda, 1948+
	1	Brick frag.; handmade
	1	Mortar frag.
Tr. 17/19	1	Oyster shell frag.

Specimens Reported?

Assemblage Description--Reported:

City/County: **James City**

Field Notes Reported? Yes **Depository:** Archaeological & Cultural Solutions, Inc.

REPORTS, DEPOSITORY AND REFERENCES

Report (s) ? Yes **Depository:** ACS

DHR Library Reference Number:

Reference for reports and publications:

Phase I and Phase II Archaeological Investigations for the Proposed Colonies of Williamsburg, James City County, Virginia

PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY

Photographic Documentation?	Depository	Type of Photos	Photo Date

CULTURAL RESOURCE MANAGEMENT EVENTS

Cultural Resource Management Event: Survey:Phase I/Reconnaissance **Date:** 2002/12/01

Organization and Person:
Organization: **First:** **Last:** ACS
Sponsor Organization:
DHR Project Review File No:

CRM Event Notes or Comments:

INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION

Individual Category Codes:
Property Manager
Honorif: Mr. **First:** Richard **Last:** Costello
Suffix:
Title: President
Company/ Agency: AES Consulting Engineers

Address: 5248 Olde Towne Road, Suite 1

City: Williamsburg **State:** Virginia **Zip:** 23188
Phone/Ext: 757-253-0040

Notes:

Ownership Type: Private

Government Agency:

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: **047-5302** ***Other DHR ID#:***

Resource Information

Resource Name(s): House, 3931 Longhill Road {Function/Location}
Date of Construction: 1959

Local Historic District :

National Register Eligibility Status

Property has been recommended Not Eligible for listing

Location of Resource

Commonwealth of Virginia
County/Independent City: James City
Magisterial District:
Town/Village/Hamlet: Williamsburg/Centerville
Tax Parcel:
Zip Code: 23188
Address(s): 3931 Longhill Road {Current}
USGS Quadrangle Name: NORGE
UTM Boundary Coordinates :

	NAD	Zone	Easting	Northing
UTM Center coordinates :		18	341960	4131160

UTM Data Restricted?. No

Resource Description

Ownership Status: Private
Government Agency Owner:
Acreage: 17.30
Surrounding area: Suburban
Open to Public: No
Site Description:

May 2007: The house at 3931 Longhill Road is located on the northern third of the 17.3-acre property. The yard around the house is mostly cleared to Longhill Road, but contains a narrow strip overgrown with small saplings, briars, and grasses 150 ft. by 500 ft. long along its side. The remainder of the 17.3-acre lot is wooded, characterized by young growth trees that have the appearance of having been logged within the last 50 years. In addition, portions of the woods and areas in the vicinity of the house have been used for trash dumps and other activities.

Secondary Resource Summary:

May 2007: None.

Individual Resource Information

Count	Resource Types	Resource Status
1	Single Dwelling	Non-Contributing

Individual Resource Detail Information

Resource Type.	Single Dwelling	*Primary Resource?*	Yes
Date of Construction:	1959 {Local Records, Tax}	*Accessed?*	No Not accessible
Architectural Style:	Ranch	*Number of Stories:*	1.0
Form:		*Condition:*	Fair
Interior Plan Type:			
		Threats to Resource:	Development

May 2007: The house is brick-veneer, one-story, with a side-gable asbestos shingle-clad roof, vinyl windows, and no distinctive architectural elements. A front porch spans 2/3 of the facade. A brick chimney pierces the roof ridge.

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: **047-5302** ***Other DHR ID#:***

Primary Resource Exterior Component Description:

Component	Comp Type/Form	Material	Material Treatment
Porch	Porch - Hood/Overhang	Wood	Porch - Posts
Structural System	Structural System - Frame	Brick	Structural System - Veneer
Foundation	Foundation - Not Visible	Unknown	Foundation - Not Visible
Windows	Windows - Sash, Double-Hung	Vinyl	Windows - Multiple-light
Chimneys	Chimneys - Central interior	Brick	other
Roof	Roof - Gable, Side	Asbestos	Roof - Shingle

Historic Time Period(s): S- The New Dominion (1946- Present)

Historic Context(s): Domestic

Significance Statement

May 2007: This house was built in 1959. It is in fair condition and presents no significant architectural elements. Due to the fact that it is not at least 50 years of age, it cannot be considered for listing in the NRHP.

National Register Eligibility Information (Intensive Level Survey):

National Register Criteria:

Period of Significance:

Level of Significance:

Graphic Media Documentation

DHR Negative #	*Photographic Media*	*Negative Repository*	*Photo Date*	*Photographer*
	B&W Print	JRIA	May 31, 2007	Rob Haas

Bibliographic Documentation

Reference #: 1

Bibliographic RecordType: Report

Author: JRIA, Inc.

DHR CRM Report Number: 2007-0865

Notes:

JC-264: Phase I Cultural Resources Survey of 17.3 Acres for the Proposed Burlington Woods Property in James City County, Virginia
June 2007

Prepared By: Thomas Higgins, M.A., Garrett Fesler, Ph.D., Matthew Laird, Ph.D., Rob Haas, M.A. Candidate
James River Institute for Archaeology, Inc.

Cultural Resource Management (CRM) Events

CRM Event # 1,

Cultural Resource Management Event: Survey:Phase I/Reconnaissance

Date of CRM Event: May 2007

CRM Person: JRIA

VDHR Project ID # Associated with Event: 2007-0865

CRM Event Notes or Comments:

CRM Event # 2,
Cultural Resource Management Event: DHR Staff: Not Eligible
Date of CRM Event: January 08, 2008
CRM Person: Ethel R. Eaton
VDHR Project ID # Associated with Event: 2007-0865
CRM Event Notes or Comments:

VDHR concurs with JRIA's recommendation that the resource is not eligible for inclusion in the National Register of Historic Places due to its recent construction date (1959).

Bridge Information

Cemetery Information

Ownership Information

Name: ..... Unknown Unknown
Company: ..... Tidewater Partners Property & Development, LLC
Address: ..... 3604 Tano Court
City: ..... Phoenix
Zip: ..... 85044 *State:* Arizona *Country:* USA
Relation to the Property: Owner of property

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#:* 047-0072** ***Other DHR ID#:

Resource Information

Resource Name(s): Longhill Road Site {Historic}
Date of Construction: ca 1800

Local Historic District :

National Register Eligibility Status

Property has been recommended Not Eligible for listing

Location of Resource

Commonwealth of Virginia
County/Independent City: James City
Magisterial District:
Town/Village/Hamlet: Williamsburg
Tax Parcel:
Zip Code:
Address(s): Longhill Road {Current}
USGS Quadrangle Name: NORGE
UTM Boundary Coordinates :

NAD	Zone	Easting	Northing

UTM Center coordinates :
UTM Data Restricted?.

Resource Description

Ownership Status:
Government Agency Owner:
Acreage:
Surrounding area:
Open to Public: No
Site Description:

Secondary Resource Summary:

Individual Resource Information

Count	Resource Types	Resource Status
1	Archaeological Site	Contributing

Individual Resource Detail Information

Resource Type. Archaeological Site *Primary Resource?* Yes
Date of Construction: ca 1800 {Site Visit} *Accessed?*
Architectural Style: *Number of Stories:* 0.0
Form: *Condition:*
Interior Plan Type:
Threats to Resource:

Architecture Summary: Dr. Barka excavated a cemetery in May 1971. Five graves (12 more were estimated present) were moved to another location in September. Very near the rebuirla spot is a deep pit, perhpas 10 feet across which the construction worked said was a mash pit. It seemed too deep to be icehouse remains. End Architecture Summary Additions and alterations: End Additions and alterations Interior Description: End Interior Description

Primary Resource Exterior Component Description:

Virginia Department of Historic Resources
Reconnaissance Level Survey

DHR ID#: **047-0072** ***Other DHR ID#:***

Historic Context(s): Domestic

Significance Statement

National Register Eligibility Information (Intensive Level Survey):

National Register Criteria:

Period of Significance:
Level of Significance:

Graphic Media Documentation

DHR Negative #	*Photographic Media*	*Negative Repository*	*Photo Date*	*Photographer*
	B&W 35mm Photos		October 11, 1971	

Bibliographic Documentation

Cultural Resource Management (CRM) Events

CRM Event # 1,
Cultural Resource Management Event: Survey:Phase I/Reconnaissance
Date of CRM Event: October 11, 1971
CRM Person: R. Perry
CRM Event Notes or Comments:
Archaeological Site Report.

Bridge Information

Cemetery Information

Ownership Information

US Environmental Protection Agency (EPA)
Facility Registry System (FRS)
Detailed Facility Reports

EPA United States Environmental Protection Agency

Envirofacts

FRS Facility Detail Report

FRS



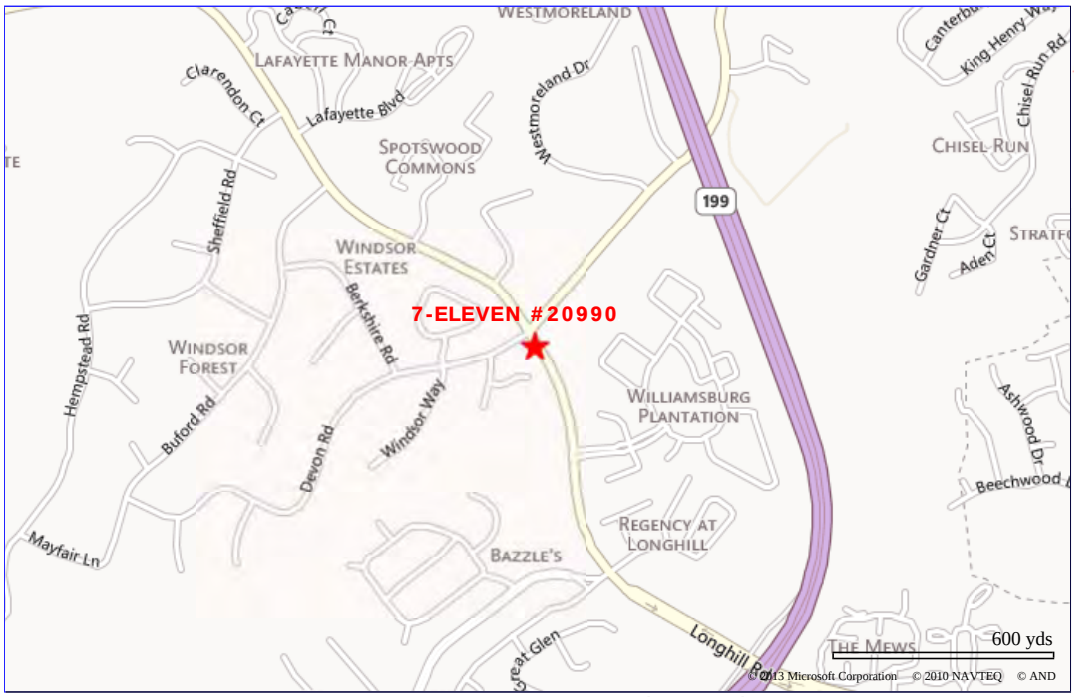
7-ELEVEN #20990

4840 LONGHILL RD
WILLIAMSBURG, VA 23188-1571
EPA Registry Id: 110006456913

Facilty Registry Service Links

- Search
  - FRS Facility Query
  - FRS EZ Search
  - Organization Search
- FRS Physical Data Model
- FRS Geospatial Model
- Contact Us
- Facility Registry Service (FRS) Home

Report an Error



Legend

- Selected Facility
- EPA Facility of Interest
- State/Tribe Facility of Interest

The facility locations displayed come from the FRS Spatial Coordinates tables. They are the best representative locations for the displayed facilities based on the accuracy of the collection method and quality assurance checks performed against each location. The North American Datum of 1983 is used to display all coordinates.

Environmental Interests

Information System	Information System ID	Environmental Interest Type	Data Source	Last Updated Date	Supplemental Environmental Interest
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	VAD988191466	SQG (Y)	RCRAINFO	09/15/2000	

Additional EPA Reports: MyEnvironment Enforcement and Compliance Site Demographics Watershed Report

Standard Industrial Classification Codes (SIC)

No SIC Codes returned.

National Industry Classification System Codes (NAICS)

No NAICS Codes returned.

Facility Codes and Flags

EPA Region:	03
Duns Number:	
Congressional District Number:	01
Legislative District Number:	6
HUC Code/Watershed:	02080206 / LOWER JAMES
US Mexico Border Indicator:	
Federal Facility:	NO
Tribal Land:	NO

Facility Mailing Addresses

Affiliation Type	Delivery Point	City Name	State	Postal Code	Information System
REGULATORY CONTACT	4840 LONGHILL RD	WILLIAMSBURG	VA	23185	RCRAINFO
FACILITY MAILING ADDRESS	REFLECTIONS III SUITE 400	VIRGINIA BEACH	VA	23452	RCRAINFO
OWNER	REFLECTIONS III STE 400	VIRGINIA BEACH	VA	23452	RCRAINFO

Alternative Names

Alternative Name	Source of Data
7-ELEVEN #20990	RCRAINFO

Contacts

Affiliation Type	Full Name	Office Phone	Information System	Mailing Address
REGULATORY CONTACT	GARRY BLAIR	8044984711	RCRAINFO	View

Organizations

Affiliation Type	Name	DUNS Number	Information System	Mailing Address
OWNER	SOUTHLAND CORPORATION THE		RCRAINFO	View

Query executed on: AUG-09-2013

Enforcement & Compliance History Online (ECHO)

Detailed Facility Report

Map | Report Error | Data Dictionary

For Public Release - Unrestricted Dissemination Report Generated on 08/09/2013
US Environmental Protection Agency - Office of Enforcement and Compliance Assurance

Gray text in this report indicates information that is not required to be reported to EPA. These data, typically regarding non-major or smaller facilities, are often incomplete.

Facility Permits and Identifiers

Data Dictionary

Statute	System	Source ID	Facility Name	Street Address	City	State	Zip
	FRS	110006456913	7-ELEVEN #20990	4840 LONGHILL RD	WILLIAMSBURG	VA	23188
RCRA	RCR	VAD988191466	7-ELEVEN #20990	4840 LONGHILL RD	WILLIAMSBURG	VA	23185

Facility Characteristics

Data Dictionary

Statute	Source ID	Universe	Status	Areas	Permit Expiration Date	Latitude/ Longitude	Indian Country?	SIC Codes	NAICS Codes
	110006456913					LRT: 37.306300 , -76.751830	No		
RCRA	VAD988191466	SQG	Active (H)				No		

For the RCRA program, activities that contribute to an overall facility status of Active are displayed in parentheses using the acronym HPACS, where H indicates handler activities, P - permitting, A - corrective action, C - converter, and S - state-specific. More information is available in the Data Dictionary.

Inspection and Enforcement Summary Data

Data Dictionary

Statute	Source ID	Insp. Last 05Yrs	Date of Last Inspection	Formal Enf Act Last 05 Yrs	Penalties Last 05 Yrs
RCRA	VAD988191466	0	Never	0	$00

Compliance Monitoring History (05 years)

Data Dictionary

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
- No data records returned.						

Entries in *italics* are not considered inspections in official counts.

Compliance Summary Data

Data Dictionary

Information on the nature of alleged violations is available on the FAQ page.

Statute	Source ID	Current SNC/HPV?	Description	Current As Of	Qtrs in NC (of 12)
RCRA	VAD988191466	No		07/09/2013	**0**

Three Year Compliance Status by Quarter

Data Dictionary

Violations shown in a given quarter do not necessarily span the entire 3 months. Information on the nature of alleged violations is available on the FAQ page, and information on the duration of non-compliance is available at the end of this report.

RCRA Compliance Status													
Statute:Source ID RCRA: VAD988191466		QTR1 Oct-Dec10	QTR2 Jan-Mar11	QTR3 Apr-Jun11	QTR4 Jul-Sep11	QTR5 Oct-Dec11	QTR6 Jan-Mar12	QTR7 Apr-Jun12	QTR8 Jul-Sep12	QTR9 Oct-Dec12	QTR10 Jan-Mar13	QTR11 Apr-Jun13	QTR12 Jul-Sep13
Facility Level Status													
Type of Violation	Agency												

The first date displayed for a RCRA Violation corresponds to the violation determination date, and the next to the resolution date (if the violation has been resolved).

Notices of Violation or Informal Enforcement - AFS, PCS, ICIS-NPDES, RCRAInfo (05 year history)

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date	
- No data records returned.					

Formal Enforcement Actions - (05 year history)

AFS, PCS, RCRAInfo, NCDB

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description	
- No data records returned.							

In some cases, formal enforcement actions may be entered both at the initiation and final stages of the action. These may appear more than once above. Entries in *italics* are not "formal" actions under the PCS definitions but are either the initiation of an action or penalties assessed as a result of a previous action. This section includes US EPA and State formal enforcement actions under CAA, CWA and RCRA.

ICIS

Data Dictionary

Primary Law/Section	Case Number	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost	
- No data records returned.											

Federal enforcement actions and penalties shown in this section are from the Integrated Compliance Information System (ICIS-FE&C). These actions may duplicate records in the Formal Enforcement Actions section.

TRI History of Reported Chemicals Released in Pounds per Year at Site:

Data Dictionary

Year /	Total Air Emissions	Surface Water Discharges	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Transfers	Total Releases and Transfers	
- No data records returned.								

TRI Total Releases and Transfers by Chemical and Year

- No data records returned.

Demographic Profile of Surrounding Area (3 Miles)

Data Dictionary

Open more detailed information in a new window (links leave ECHO): 1 Mi3 Mi or5 Mi.
This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2000 US Census data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table(LRT) when available.

Radius of Area:	3 Miles	Land Area:	97.81%	Households in area:	7,382
Center Latitude:	37.300824	Water Area:	2.19%	Housing units in area:	7,889
Center Longitude:	-76.749278	Population Density:	767.16/sq. mi.	Households On Public Assistance:	128
Total Persons:	21,212	Percent Minority:	22.72%	Persons Below Poverty Level:	1,698

Race Breakdown	Persons (%)	Age Breakdown:	Persons (%)
White:	16,643 (78.46%)	Child 5 years and less:	1,167 (5.50%)

African-american:	3,404 (16.05%)	**Minors 17 years and younger:**	3,806 (17.94%)
Hispanic-Origin:	450 (2.12%)	**Adults 18 years and older:**	17,407 (82.06%)
Asian/Pacific Islander:	605 (2.85%)	**Seniors 65 years and older:**	3,259 (15.36%)
American Indian:	127 (0.60%)		
Other/Multiracial:	166 (0.78%)		

Education Level (Persons 25 & older)	Persons (%)	Income Breakdown:	Households (%)
Less than 9th grade:	419 (3.49%)	**Less than $15,000:**	963 (13.05%)
9th-12th grades:	1,102 (9.17%)	**$15,000-$25,000:**	782 (10.59%)
High School Diploma:	2,542 (21.15%)	**$25,000-$50,000:**	2,174 (29.45%)
Some College/2-yr:	2,829 (23.54%)	**$50,000-$75,000:**	1,457 (19.74%)
B.S./B.A. or more:	5,126 (42.65%)	**Greater than $75,000:**	1,950 (26.42%)

Notice About Duration of Violations -- The duration of violations shown on this report is an estimate of the actual duration of the violations that might be alleged or later determined in a legal proceeding. For example, the start date of the violation as shown in the ECHO database is normally when the government first became aware of the violation, not the first date that the violation occurred, and the facility may have corrected the violation before the end date shown. In some situations, violations may have been corrected by the facility, but EPA or the State has not verified the correction of these violations. In other situations, EPA does not remove the violation flag until an enforcement action has been resolved.



This report was generated by the Integrated Data for Enforcement Analysis (IDEA) system, which updates its information from program databases monthly. The data were last updated: RCRAInfo: 07/09/2013. FRS: 07/15/2013.

Some regulated facilities have expressed an interest in explaining data shown in the Detailed Facility Reports in ECHO. Please check company web sites for such explanations.

Envirofacts

FRS Facility Detail Report

FRS



LAFAYETTE HIGH

4460 LONGHILL RD
WILLIAMSBURG, VA 23188
EPA Registry Id: 110021488852

Facilty Registry Service Links

- Search
  - FRS Facility Query
  - FRS EZ Search
  - Organization Search
- FRS Physical Data Model
- FRS Geospatial Model
- Contact Us
- Facility Registry Service (FRS) Home

Report an Error



Legend

- Selected Facility
- EPA Facility of Interest
- State/Tribe Facility of Interest

The facility locations displayed come from the FRS Spatial Coordinates tables. They are the best representative locations for the displayed facilities based on the accuracy of the collection method and quality assurance checks performed against each location. The North American Datum of 1983 is used to display all coordinates.

Environmental Interests

Information System	Information System ID	Environmental Interest Type	Data Source	Last Updated Date	Supplemental Environmental Interes
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	VAP000016799	UNSPECIFIED UNIVERSE (N)	RCRAINFO	01/04/2011	

Additional EPA Reports: MyEnvironment Enforcement and Compliance Site Demographics Watershed Report

Standard Industrial Classification Codes (SIC)

No SIC Codes returned.

National Industry Classification System Codes (NAICS)

No NAICS Codes returned.

Facility Codes and Flags

EPA Region:	03
Duns Number:	
Congressional District Number:	01
Legislative District Number:	
HUC Code/Watershed:	02080206 / LOWER JAMES
US Mexico Border Indicator:	
Federal Facility:	NO
Tribal Land:	NO

Facility Mailing Addresses

Affiliation Type	Delivery Point	City Name	State	Postal Code	Information System
OWNER	PO BOX 8783	WILLIAMSBURG	VA	23187	RCRAINFO
REGULATORY CONTACT	597 JOLLY POND ROAD	WILLIAMSBURG	VA	23188	RCRAINFO
FACILITY MAILING ADDRESS	597 JOLLY POND ROAD	WILLIAMSBURG	VA	23188	RCRAINFO

Alternative Names

Alternative Name	Source of Data
LAFAYETTE HIGH SCHOOL	RCRAINFO

Contacts

Affiliation Type	Full Name	Office Phone	Information System	Mailing Addre
REGULATORY CONTACT	ALAN ROBERTSON	7572597157	RCRAINFO	View

Organizations

Affiliation Type	Name	DUNS Number	Information System	Mailing Address
OWNER	WILLIAMSBURG-JAMES CITY COUNTY PUBLIC SC		RCRAINFO	View

Enforcement & Compliance History Online (ECHO)

Detailed Facility Report

Map | Report Error | Data Dictionary

For Public Release - Unrestricted Dissemination Report Generated on 08/09/2013
US Environmental Protection Agency - Office of Enforcement and Compliance Assurance

Gray text in this report indicates information that is not required to be reported to EPA. These data, typically regarding non-major or smaller facilities, are often incomplete.

Facility Permits and Identifiers

Data Dictionary

Statute	System	Source ID	Facility Name	Street Address	City	State	Zip
	FRS	110021488852	LAFAYETTE HIGH	4460 LONGHILL RD	WILLIAMSBURG	VA	23188
RCRA	RCR	VAP000016799	LAFAYETTE HIGH SCHOOL	4460 LONGHILL ROAD	WILLAIMSBURG	VA	23188

Facility Characteristics

Data Dictionary

Statute	Source ID	Universe	Status	Areas	Permit Expiration Date	Latitude/ Longitude	Indian Country?	SIC Codes	NAICS Codes
	110021488852					LRT: 37.314450 , -76.763670	No		
RCRA	VAP000016799		Inactive				No		

For the RCRA program, activities that contribute to an overall facility status of Active are displayed in parentheses using the acronym HPACS, where H indicates handler activities, P - permitting, A - corrective action, C - converter, and S - state-specific. More information is available in the Data Dictionary.

Inspection and Enforcement Summary Data

Data Dictionary

Statute	Source ID	Insp. Last 05Yrs	Date of Last Inspection	Formal Enf Act Last 05 Yrs	Penalties Last 05 Yrs
RCRA	VAP000016799	0	Never	0	$00

Compliance Monitoring History (05 years)

Data Dictionary

Statute	Source ID	System	Inspection Type	Lead Agency	Date	Finding
- No data records returned.						

Entries in *italics* are not considered inspections in official counts.

Compliance Summary Data

Data Dictionary

Information on the nature of alleged violations is available on the FAQ page.

Statute	Source ID	Current SNC/HPV?	Description	Current As Of	Qtrs in NC (of 12)
RCRA	VAP000016799	No		07/09/2013	**0**

Three Year Compliance Status by Quarter

Data Dictionary

Violations shown in a given quarter do not necessarily span the entire 3 months. Information on the nature of alleged violations is available on the FAQ page, and information on the duration of non-compliance is available at the end of this report.

RCRA Compliance Status													
Statute:Source ID RCRA: VAP000016799		QTR1 Oct-Dec10	QTR2 Jan-Mar11	QTR3 Apr-Jun11	QTR4 Jul-Sep11	QTR5 Oct-Dec11	QTR6 Jan-Mar12	QTR7 Apr-Jun12	QTR8 Jul-Sep12	QTR9 Oct-Dec12	QTR10 Jan-Mar13	QTR11 Apr-Jun13	QTR12 Jul-Sep13
Facility Level Status													
Type of Violation	Agency												

The first date displayed for a RCRA Violation corresponds to the violation determination date, and the next to the resolution date (if the violation has been resolved).

Notices of Violation or Informal Enforcement - AFS, PCS, ICIS-NPDES, RCRAInfo (05 year history)

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date
- No data records returned.				

Formal Enforcement Actions - (05 year history)

AFS, PCS, RCRAInfo, NCDB

Data Dictionary

Statute	Source ID	Type of Action	Lead Agency	Date	Penalty	Penalty Description
- No data records returned.						

In some cases, formal enforcement actions may be entered both at the initiation and final stages of the action. These may appear more than once above. Entries in *italics* are not "formal" actions under the PCS definitions but are either the initiation of an action or penalties assessed as a result of a previous action. This section includes US EPA and State formal enforcement actions under CAA, CWA and RCRA.

ICIS

Data Dictionary

Primary Law/Section	Case Number	Case Type	Lead Agency	Case Name	Issued/Filed Date	Settlement Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost
- No data records returned.										

Federal enforcement actions and penalties shown in this section are from the Integrated Compliance Information System (ICIS-FE&C). These actions may duplicate records in the Formal Enforcement Actions section.

TRI History of Reported Chemicals Released in Pounds per Year at Site:

Data Dictionary

Year /	Total Air Emissions	Surface Water Discharges	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Transfers	Total Releases and Transfers
- No data records returned.							

TRI Total Releases and Transfers by Chemical and Year

- No data records returned.

Demographic Profile of Surrounding Area (3 Miles)

Data Dictionary

Radius of Area:	N/A	Land Area:	N/A	Households in area:	N/A
- No data records returned.					

Notice About Duration of Violations -- The duration of violations shown on this report is an estimate of the actual duration of the violations that might be alleged or later determined in a legal proceeding. For example, the start date of the violation as shown in the ECHO database is normally when the government first became aware of the violation, not the first date that the violation occurred, and the facility may have corrected the violation before the end date shown. In some situations, violations may have been corrected by the facility, but EPA or the State has not verified the correction of these violations. In other situations, EPA does not remove the violation flag until an enforcement action has been resolved.

This report was generated by the Integrated Data for Enforcement Analysis (IDEA) system, which updates its information from program databases monthly. The data were last updated: RCRAInfo: 07/09/2013. FRS: 07/15/2013.

Some regulated facilities have expressed an interest in explaining data shown in the Detailed Facility Reports in ECHO. Please check company web sites for such explanations.

EPA Home |Privacy and Security Notice |Contact Us

Memorandum

To: District Construction Engineer
iPM Project Manager

Project Number: 0612-047-620, P101
UPC Number: 98811
iPM Project Description: Longhill Rd Corridor Study
Date of Review: 7/16/13
Reviewer: David F. Joyner

ENVIRONMENTAL CERTIFICATION/COMMITMENTS CHECKLIST

1. SERP complete?
☐ Yes ☐ No ☐ Exempt ☒ Not Required
Data Source: VDOT Hampton Roads District (HRD) - Environmental Staff
Comments: SERP not required for federally funded or eligible projects.

2. NEPA complete?
☒ Yes ☐ No ☐ No Federal Action
Data Source: VDOT HRD – Environmental Staff
Comments: Project meets criteria for a Blanket Categorical Exclusion under Category 6.

If yes, provide document type: BCE

3. Water quality permits required?
☐ Yes ☒ No
Data Source: VDOT HRD – Water Quality Staff
Comments: No permits required.
If yes, provide permit types:

If yes, have all water quality permits been obtained?
☐ Yes ☐ No
Comments:

4. Cultural resources clear for advertisement?
☒ Yes ☐ No
Data Source: VDOT HRD – Cultural Resource Staff
Comments:

5. Hazardous materials clear for advertisement?
☒ Yes ☐ No
Data Source: VDOT HRD – Hazardous Materials Staff

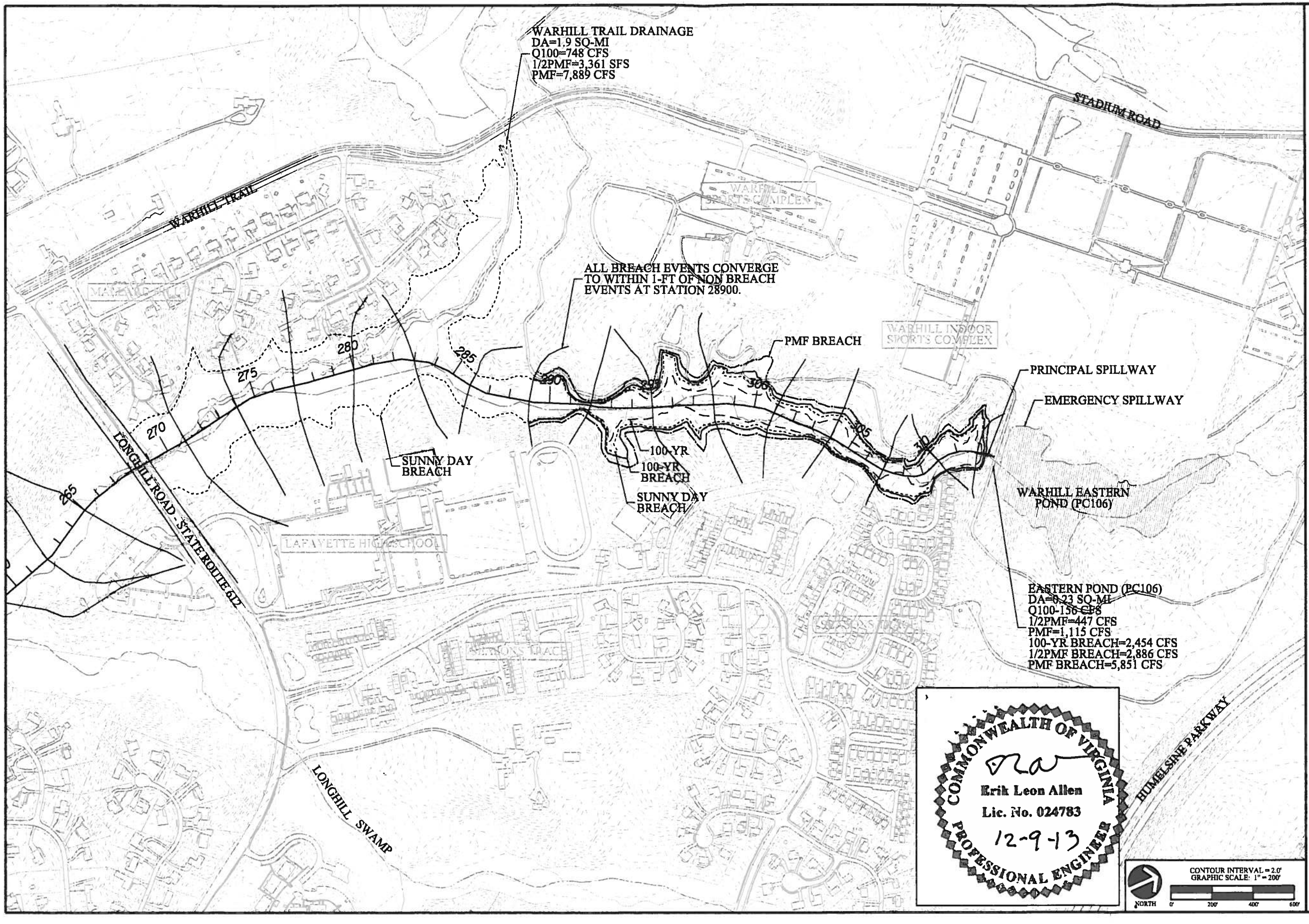
6. Threatened and endangered species clear for advertisement?
☒ Yes ☐ No
Data Source: VDOT HRD – Water Quality Staff
Comments:

THERE ARE NO ENVIRONMENTAL COMMITMENTS ATTACHED THAT MUST BE ADHERED TO DURING CONSTRUCTION. THESE COMMITMENTS REPRESENT ANY CONDITION OF A LEGAL OR REGULATORY APPROVAL, OR ANY CONDITION THAT VDOT VOLUNTARILY ACCEPTS OR OFFERS SUCH AS THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS, TO OBTAIN LEGAL OR REGULATORY APPROVAL OR MEET A LEGAL OR REGULATORY REQUIREMENT.

Signature on file *7/16/13*
District Environmental Manager Date

Copy To:

- District Programs Manager
- Programming Division
- District Location and Design Engineer
- District Preliminary Engineering Manager
- District Bridge Engineer (as appropriate)
- District Maintenance Engineer (as appropriate)
- Residency Administrator (as appropriate)
- FHWA NEPA Contact (Federal Aid Projects)
- FHWA Area Engineer (Federal Aid Project)



WATERSHED CONSULTING, PLLC.

P.O. Box 7216
Richmond, VA 23221
(804) 304-4659
www.watershedva.com

WARHILL LAKE

BREACH LIMITS TO CONVERGENCE

JAMES CITY COUNTY, VIRGINIA

PROJECT MANAGER:	EA
DESIGNED:	EA
DRAWN:	SK
DESIGN FILE:	warhill_lake
DATE:	11/13/13
REVISIONS:	

FIGURE 3

L:\202\33754-Western_Pond_Dam_Failure_Analysis\DWG\Sheet\CD\33574-INUN.dwg | Plotted on 7/10/2013 10:51 AM | by Mike Claud

LEGEND:

- FULL PMF NON-BREACH & BREACH LIMITS
- 100-YEAR NON-BREACH & BREACH LIMITS
- SUNNY DAY BREACH LIMITS

NOTE: EXISTING TOPO BASED ON JAMES CITY COUNTY GIS INFORMATION IN NAD 83 STATE PLANE COORDINATES

NOTE: THE INFORMATION CONTAINED IN THIS MAP IS PREPARED FOR USE IN NOTIFICATION OF DOWNSTREAM PROPERTY OWNERS BY EMERGENCY MANAGEMENT PERSONNEL.

NOTE: DUE TO MINOR VARIATION IN ELEVATIONS BETWEEN THE FULL PMF AND 100-YEAR NON-BREACH AND BREACH EVENTS THE LIMITS ARE ILLUSTRATED ON THE MAPPING AS SINGLE LINES.

SEE SHEET 1 MATCHLINE

WARHILL TRAIL ROAD

LONGHILL ROAD

SCALE 1"=500'

0 500' 1000'

COMMONWEALTH OF VIRGINIA
MICHAEL L. CLAUD
Lic. No.033586
7/9/2013
PROFESSIONAL ENGINEER

NAD 83

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

THIS DRAWING PREPARED AT THE
Corporate Headquarters
1001 Boulders Parkway | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

SHEET NO. 2

JOB NO. 33574

WESTERN POND DAM (PC105) FAILURE ANALYSIS

JAMES CITY COUNTY, VIRGINIA

RESERVOIR #2 DAM INUNDATION MAP - IDA

SCALE	CHECKED BY	DESIGNED BY	DRAWN BY	DATE
1" = 500'	M. CLAUD	D. WILMOTH	T. MARKS	7-8-2013

DATE	REVISION DESCRIPTION

These plans and associated documents are the exclusive property of TIMMONS GROUP and may not be reproduced in whole or in part and shall not be used for any purpose whatsoever, inclusive, but not limited to construction, bidding, and/or construction staking without the express written consent of TIMMONS GROUP

Project Information

Project Number:	0612-047-620, P101	**UPC:**	98811
Project Name:			
Route Number:	612		
Project Limit - From:	Centerville Rd	**To:**	Route 199
District	**City/County**	**Residency**	
Hampton Roads	James City	Williamsburg	
IPM Project Description:	Longhill Rd Corridor Study		
Additional Project Description:	Longhill Rd Corridor Study		

Reevaluation Type / Reviewers

NEPA Document Approval Date:		**FHWA Contact:**	Lopez-Cruz, Marisel
NEPA Document Type:	BCE		
Project Manager:	Bruce.Vana	**Environmental POC:**	Stuck, Kenneth E.

Reevaluation Questions

1.) Is the current project design, right of way limits and/or scope within the study area evaluated in the most recently approved environmental document? Y

Comments:

2.) Has the project design complied with all environmental commitments or conditions identified during project development? Y

Comments:

3.) Project limits in environmental document:

From:	Centerville Rd	**To:**	Route 199

Project limits proposed on current plan:

From:	Centerville Rd	**To:**	Route 199

Are the project limits consistent? Y

Comments:

4.) Have any project design or scope changes outside the original project extent or limits been added or removed from the project? N

Description:

5.) Was a noise analysis required for the environmental document?

Noise Scoping Decision:

Comments: Noise analysis not required.

The Virginia Department of Transportation has reevaluated the approved environmental document in conjunction with the proposed project limits and found the NEPA decision document remains valid. The intent of this reevaluation was to assess any changes to the scope of the project, rather than consider specific design elements. This reevaluation satisfies the requirements in 23 CFR 771.129.

Appendix D

Traffic Projection Methodology Memorandum

Kimley-Horn
and Associates, Inc.

Memorandum

Suite 500
4500 Main Street
Virginia Beach, Virginia
23462

To: Ellen Cook, AICP
James City County

From: Carroll E. Collins, AICP
Whitney A. Sokolowski
Kimley-Horn and Associates, Inc.

Date: January 17, 2014

Subject: Longhill Road Corridor Study Traffic Projection Methodology Memorandum
KHA Project #116085034

Background

In order to establish 2034 horizon year traffic volume projections within the study area, several growth and development factors were taken into consideration. Anticipated future traffic volumes and planned land developments within the study area were established through conversations with James City County Planning staff and VDOT. For purposes of this study, existing traffic patterns/travel behaviors were assumed to remain constant through 2034 under both no-build and build conditions. Although travelers along the corridor will likely experience overall improved operational conditions through the introduction of additional capacity (i.e., roadway widening from 2 to 4 lanes, turn-lane improvements at intersections, and improved signal coordination) it is expected that travel patterns will not change.

Longhill Road is a key link in the County's roadway network system serving commuters that live and work within the study area as well as those that travel through the corridor. However, an alternative route or connection to the corridor is not being proposed that would result in a change in travel patterns from those that exist today.

The need for Longhill Road corridor improvements is based on several key components; traffic operations, safety, and mobility. At the forefront is the volume of traffic the roadway accommodates today. Existing daily traffic volumes are beginning to reach or exceed the ideal operational capacity of the roadway, intersections, and segments of the corridor are characterized by deteriorating traffic operations under peak hour conditions. In addition to existing conditions, it is recognized that approved or planned development within the corridor as well as expected growth in the general vicinity of the study area will result in increased traffic volumes and additional demand on the roadway network. With traffic volumes expected to increase over time, the need for improvements is further confirmed. Factors expected to influence future volumes as well as methodology used to development these traffic volume projections are discussed in detail in the following sections.

Kimley-Horn and Associates, Inc.

Growth Rate Development Data Resources

To determine 2034 horizon year traffic volumes, annualized background growth rates were established for Longhill Road, a segment of Olde Towne Road, and a segment of Centerville Road. In order to more accurately determine the 2034 traffic volumes, a comparison was conducted between several industry standard resources. Resources used in the development of the annualized growth rates include the following:

1) Historical VDOT Annual Average Daily Traffic (AADT) volume estimates,
2) Data obtained from the 2009 Base Year and 2034 Horizon Year Hampton Roads Regional Travel Demand Models (TDM):
    a. Traffic volume projections
    b. Transportation Analysis Zones (TAZ) socio-economic data (e.g., Population, Households, Total Employment, Retail Employment, Non-Retail Employment)
3) Data associated with approved and/or anticipated developments within the study area.
4) James City County staff provided TAZ socio-economic data recently provided to the Hampton Roads Transportation Planning Organization (HRTPO) for the development of the 2040 Hampton Roads TDM (e.g., Population, Households, Total Employment, Retail Employment, Non-Retail Employment).

Historical VDOT Annual Average Daily Traffic Volume Estimates

Based on historical data from VDOT's daily traffic volume estimates, annual growth rates were calculated for the study corridor to serve as one source of data to assist in the development of future mainline traffic volume projections. Annual average daily (AADT) traffic volumes were compiled from 2001 to 2004 and from 2009 to 2012 for Longhill Road between Centerville Road (State Route 614) and Ironbound Road (State Route 615) to identify historical traffic volume trends along the study area corridor. Because of the recession and decreased economic growth, the years of 2005 through 2008 were excluded from the comparison to decrease the likelihood of outliers or atypical growth patterns within the data. **Table 1** shows the calculated annual growth rates for Longhill Road based on the VDOT historical traffic data.

Table 1: VDOT Historical Annual Average Growth Rate

Route	Segment	Annual Growth Rate (2001-2004)	Annual Growth Rate (2009-2012)
Longhill Road (Route 612)	Centerville Road (State Route 614) to Warhill Trail (State Route 830)	+7.68%	+0.03%
	Warhill Trail (Route 830) to Ironbound Road (Route 615)	+2.52%	-1.96%

Hampton Roads Regional Travel Demand Model

Projected daily volumes from the 2009 base year and 2034 horizon year of the HRTPO TDM were also compared in order to determine the anticipated annualized growth rates within the study area. The future volumes were taken from multiple model links that comprise the roadways within the study area.

Kimley-Horn and Associates, Inc.

Table 2 shows the compared model links as well as the 2009 and 2034 daily traffic volume assignment, the percent change between model assignment years, and the average percentage change along select corridor segments.

The practice of using of the regional travel demand model to extrapolate and establish annualized growth rates is consistent with that process outlined in *NCHRP 255 – Highway Traffic Data for Urbanized Area Project Planning and Design.* The model takes into account existing capacity (laneage) (i.e., from the base year model), future roadway improvements (in the future year model), and anticipated changes in socio-economic data, which translates into trip generation (i.e., traffic volumes), as it relates to growth within the corridor study area and within the region.

Table 2: Travel Demand Model Traffic Projections

Segment	Link Start Node Number	Link End Node Number	2009 ADT	2034 ADT	Percent Change	Average Percent Change
Longhill Road						
Centerville Road (Route 615) to Warhill Trail (Route 830)	19380	19381	4,142	6,555	+2.33%	+1.60%
	19381	19368	8,122	11,006	+1.42%	
	19360	19363	8,122	11,006	+1.42%	
	19365	19373	8,122	11,006	+1.42%	
	19373	19376	8,122	11,006	+1.42%	
Warhill Trail to Olde Towne Road (Route 658)	19362	19358	21,768	24,912	+0.58%	+0.58%
	19350	19349	21,768	24,912	+0.58%	
Olde Towne Road to Williamsburg West Drive	19348	19347	21,768	24,912	+0.58%	+0.55%
	19347	19346	21,768	24,912	+0.58%	
	19346	19345	22,187	24,912	+0.49%	
	19345	19341	21,757	24,664	+0.53%	
Williamsburg West Drive to Route 199 Interchange	19341	19338	21,757	26,191	+0.82%	+0.82%
	19338	19337	21,757	26,191	+0.82%	
	19337	19335	21,757	26,191	+0.82%	
Route 199 Interchange Ramps	19335	19331	21,757	26,190	+0.82%	+1.57%
	19331	19328	19,180	25,945	+1.41%	
	19328	19327	19,153	27,777	+1.80%	
	19327	19322	18,239	26,947	+1.91%	
	19322	19321	18,239	26,947	+1.91%	
Olde Towne Road						
All	19347	19351	12,451	12,855	+0.13%	+0.13%
Centerville Road						
All	19388	19380	5,005	8,287	+2.62%	+2.04%
	19374	19380	2,739	3,732	+1.45%	

Kimley-Horn and Associates, Inc.

In addition to the historical volume data and future projection model volumes, the County provided socio-economic data (i.e., population, households, total employment, retail employment, industrial employment, office employment, and other employment) for the study area transportation analysis zones. Data was provided for the 2009 base year, the current 2034 model horizon year, and the 2040 horizon year.

It is noted that the 2040 socio-economic data were available as a result of the County recently preparing updated projections for use in the development of the 2040 Hampton Roads TDM and ultimately the 2040 Hampton Roads Long Range Transportation Plan. The study area is currently located within the boundaries of the following James City County TAZ's: 1327, 1328, 1339, and 1341 as shown in **Figure 1**. From these TAZ's, the raw change and annual growth rate between 2009 and 2040 were calculated for each type of socio-economic data to determine the projected future traffic volumes as shown in **Table 3** and **Table 4**.

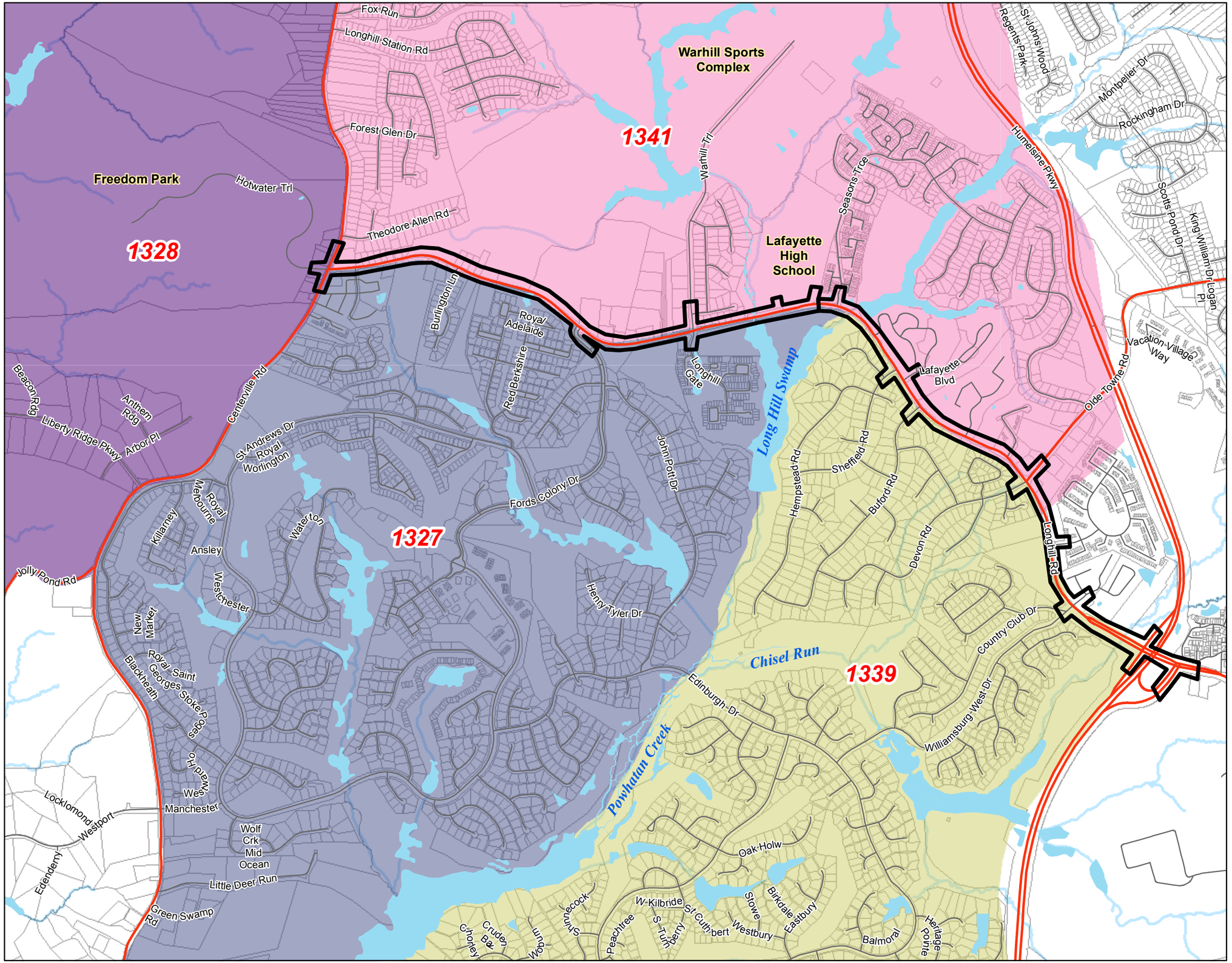
Table 3: James City County Traffic Analysis Zone Socio-Economic Data (Population and Households)

TAZ Data (2009 - 2040)	Population		Residential Households	
	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate
TAZ 1327	+1,956	+1.60%	+852	+1.54%
TAZ 1328	+844	+4.97%	+307	+4.90%
TAZ 1339	+2,996	+1.61%	+1,331	+1.91%
TAZ 1341	-492	-0.40%	-223	-0.45%
Total	**+5,304**	**+1.45%**	**+2,267**	**+1.54%**

Table 4: James City County Traffic Analysis Zone Socio-Economic Data (Employment)

TAZ Data (2009 - 2040)	Retail Employment		Industrial Employment		Office Employment		Other Employment		Total Employment	
	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate
TAZ 1327	-53	-1.61%	-51	-7.50%	+568	+3.52%	+26	+0.22%	+490	+1.47%
TAZ 1328	+13	0.00%	-19	-0.69%	+110	+5.19%	+138	+6.61%	+242	+3.14%
TAZ 1339	-347	-1.27%	0	0.00%	+779	+4.81%	+449	+4.86%	+881	+1.49%
TAZ 1341	-53	-0.55%	-204	-4.00%	+353	+1.19%	+151	+0.56%	+248	+0.34%
Total	**-439**	**-1.35%**	**-274**	**-2.91%**	**+1,810**	**+3.44%**	**+764**	**+1.83%**	**+1,862**	**+1.33%**

Figure 1: Traffic Analysis Zone Map



Project Study Area
Primary Roadways
Secondary Roadways
Water/Marsh
Parcel Boundary

0 500 1,000 2,000 Feet

Kimley-Horn and Associates, Inc.

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: James City County

Kimley-Horn and Associates, Inc.

Planned or Approved Land Development

In addition to TAZ socio-economic data, anticipated and approved developments were also included to comprehensively project future traffic volumes as well as identification of undeveloped acreage within the study area. Anticipated and approved developments within the study area were identified during discussions with the James City County and VDOT staff. The following commercial and recreational developments were added to the background growth to develop the 2034 future volumes:

- Christian Life Center Expansion
- King of Glory Expansion
- Williamsburg Business Center Expansion
- Freedom Park Expansion
- Warhill Sports Complex Expansion

Table 5 displays the anticipated land uses within each of the identified commercial and recreational developments.

Table 5: Anticipated Developments

Development	Use	Proposed Units
Christian Life Center Expansion*	Education	+ 25,000 SF
	Day Care	
King of Glory Expansion	Sanctuary	+ 184 Seats
	Office	+ 9 Employees
	Day Care	+ 3 Students
Williamsburg Business Center Expansion	Office	+ 78,400 SF
Freedom Park Expansion**	Recreation	-
Warhill Sports Complex Expansion	Recreation	6 Baseball/Softball Fields 1 Football Field 12 Multi-Purpose Fields 1 Multi-Use Trail

** These will only be conducted during church service hours; therefore, additional traffic generated from this expansion will occur during off-peak hours.*

***As determined by the County Parks and Recreation staff, any new future attractions at Freedom Park will result in a minimal number of new trips being generated to/from this site during the peak hours.*

Kimley-Horn and Associates, Inc.

Similarly, approved but unbuilt residential developments were also considered in formulating the annualized growth rates and subsequent 2034 traffic volumes projections. The following approved but undeveloped residential units were identified during discussions with the James City County staff:

- Burlington Woods
- Ford's Colony
- Season's Trace
- Windsor Forest
- Williamsburg West

TAZ 1327 encompasses the area south of Longhill Road from Centerville Road to the Longhill Swamp. Within this TAZ, the existing and future major land use generators include but are not limited to the Christian Life Center, Burlington Woods neighborhood, and Ford's Colony neighborhood. However, the planned developments will be divided equally between TAZ 1327 and TAZ 1339 due to their location and adjacent roadway facilities. **Table 6** shows the comparison of the County's projected socio-economic data and the anticipated developments.

Table 6: TAZ 1327 Data Comparison

Development	Land Use				
	Residential Households	Retail Employment	Industrial Employment	Office Employment	Other Employment
TAZ 1327 Data (2009-2040)	+852	-53	-51	+568	+26
Subtotal	***+852***	***-53***	***-51***	***+568***	***+26***
Christian Life Center Expansion	-	-	-	-	-
Burlington Woods	+11	-	-	-	-
Ford's Colony (50% of Housing)	+269	-	-	-	-
Parcel 3130100031 (Residential)	+4	-	-	-	-
Parcel 3130100021 (Residential)	+4	-	-	-	-
Parcel 3140100013 (Residential)	+3	-	-	-	-
Parcel 3210100012 (County)	-				
Subtotal	***+280***	-	-	-	-
Difference	+572	-53	-51	+568	+26

Kimley-Horn and Associates, Inc.

TAZ **1328** encompasses the area west of Centerville Road surrounded by Jolly Pond Road. Within this TAZ, the existing and future major land use generator is Freedom Park. **Table 7** shows the comparison of the County's projected socio-economic data and the anticipated developments.

Table 7: TAZ 1328 Data Comparison

Development	Land Use				
	Residential Households	Retail Employment	Industrial Employment	Office Employment	Other Employment
TAZ 1328 Data (2009-2040)	+307	+13	-19	+110	+138
Subtotal	***+307***	***+13***	***-19***	***+110***	***+138***
Parcel 3130100007 (Residential)	+4	-	-	-	-
Subtotal	***+4***	-	-	-	-
Difference	+303	+13	-19	+110	+138

TAZ **1339** encompasses the area south of Longhill Road between Longhill Swamp and Route 199. Within this TAZ, the existing and future major land use generators include but are not limited to the King of Glory Church and the Williamsburg West neighborhood. **Table 8** shows the comparison of the County's projected socio-economic data and the anticipated developments.

Table 8: TAZ 1339 Data Comparison

Development	Land Use				
	Residential Households	Retail Employment	Industrial Employment	Office Employment	Other Employment
TAZ 1339 Data (2009-2040)	+1,331	-347	0	+779	+449
Subtotal	***+1,331***	***-347***	***0***	***+779***	***+449***
King of Glory Expansion	-	-	-	+9	-
Williamsburg West	+3	-	-	-	-
Ford's Colony (50% of Housing)	+270	-	-	-	-
Windsor Forest	+17	-	-	-	-
Subtotal	***+290***	-	-	***+9***	-
Difference	+1,041	-347	0	+770	+449

Kimley-Horn and Associates, Inc.

TAZ **1341** encompasses the area north of Longhill Road between Centerville Road and Route 199. Within this TAZ, the existing and future major land use generators include but are not limited to the Warhill Sports Complex, Season's Trace neighborhood, and Williamsburg Business Center. **Table 9** shows the comparison of the County's projected socio-economic data and the anticipated developments.

Table 9: TAZ 1341 Data Comparison

Development	Land Use				
	Residential Households	Retail Employment	Industrial Employment	Office Employment	Other Employment
TAZ 1341 Data (2009-2040)	-223	-53	-204	+353	+151
Subtotal	***-223***	***-53***	***-204***	***+353***	***+151***
Warhill Sports Complex Expansion	-	-	-	-	-
Williamsburg Business Center Expansion	-	-	-	+392	-
Season's Trace	+24	-	-	-	-
Parcel 3130200029 (Residential)	+14	-	-	-	-
Parcel 3140100001 (Residential)	+5	-	-	-	-
Parcel 3230100002 (Residential)	+11	-	-	-	-
Parcel 3240100029 (Neighborhood Commercial)	-	+ 20	-	-	+ 20
Parcel 3130100029 (Residential)	+44	-	-	-	-
Parcel 3120100017 (Residential)	+24	-	-	-	-
Subtotal	+189	-	-	+392	-
Difference	-34	-33	-204	-39	+171

Kimley-Horn and Associates, Inc.

From the comparison of the historical traffic volumes, 2009 and 2034 projected traffic volumes, socio-economic data, and anticipated developments, **Table 10** summarizes the growth rates proposed for use in the development of future traffic projections for the Longhill Road corridor the study area.

Table 10: Proposed Annualized Growth Rates

Route	Segment	Annual Growth Rate
Longhill Road (Route 612)	Centerville Road (Route 614) to Warhill Trail (Route 830)	2.00%
	Warhill Trail to Olde Towne Road (Route 658)	1.00%
	Olde Towne Road to Williamsburg West Drive	1.00%
	Williamsburg West Drive to Route 199 Interchange	1.00%
	Route 199 Interchange Ramps	1.50%
Olde Towne Road (Route 658)	All	1.00%
Centerville Road (Route 614)	All	2.00%

Horizon Year 2034 average weekday daily traffic volumes were developed by applying the growth rates reflected in **Table 10** to existing ADT volumes. This approach is based on the ideology that the approved growth rates developed as part of the corridor study, not only take into account the growth captured and reflected in the TDM but also the daily trips associated with the identified approved developments.

In addition to the developed 2034 ADT volumes, the existing 2013 traffic volumes were grown at the aforementioned growth rates to obtain 2034 peak hour traffic volumes. Based on existing trip distributions and the anticipated developments, it was determined that growth rates would only be applied to certain peak hour turning movements to reflect the anticipated future travel patterns within the study area.

The growth rates were only applied to the mainline Longhill Road volumes at the following study area intersections:

- Williamsburg West Drive/Lane Place Drive and Longhill Road
- Williamsburg Plantation and Longhill Road
- Buford Road and Longhill Road
- Lafayette Boulevard and Longhill Road
- Sheffield Road and Longhill Road
- Season's Trace and Longhill Road
- Lafayette High School Entrance Driveway and Longhill Road
- Lafayette High School Bus Loop Driveway/Christian Life Center Driveway and Longhill Road

Kimley-Horn and Associates, Inc.

The growth rates shown in **Table 10** were applied to all approach movements at the following study area intersections:

- Route 199 WB Off/On-Ramp and Longhill Road
- Route 199 EB Off/On-Ramp and Longhill Road
- Ford's Colony Drive and Longhill Road
- Centerville Road and Longhill Road

The growth rates shown in **Table 10** were applied to only a portion of the movements at the following study area intersections:

- Olde Towne Road/Devon Road and Longhill Road – Only grew the movements associated with Longhill Road and Olde Towne Road
- Warhill Trail/Longhill Gate Road and Longhill Road – Only grew the movements associated with Longhill Road and Warhill Trail

To address side street traffic volume projections for select instances, it is proposed that an annualized growth rate of 0.5% be applied to existing side street turning movement volumes. A lower growth rate is proposed for the side streets (i.e., residential neighborhood site access driveways) because traffic associated with these approaches to Longhill Road are essentially built-out and any growth would only be very modest. For instance, Devon Road serves as the primary access driveway to the Windsor Forest residential development. The vast majority of the neighborhood is developed leaving little room for additional or significant growth.

Additionally, roadway facilities of this nature are not collectors or arterial streets providing an alternative route for area commuters or a functioning component of the County's transportation network. Background traffic growth (i.e., traffic in addition to that calculated for the development) on these sites is negligible.

Future Traffic Volume Calculation

To develop future traffic volume forecasts, Kimley-Horn proposes the use of the growth rates presented in **Table 8**, projected in a linear manner from the existing base year of 2013 out to the horizon year of 2034. The traditional linear methodology ideally addresses interim fluctuations in the economy or population despite changes (i.e., slowdowns, downturns, etc.) in economic growth or development. The linear growth projection methodology equation is shown below using an example 1.5% annual growth rate.

Equation 1:

Linear Annual Growth Rate Equation

$$(((0.015 * (2034-2013)) +1) * 10{,}000 = 13{,}150$$

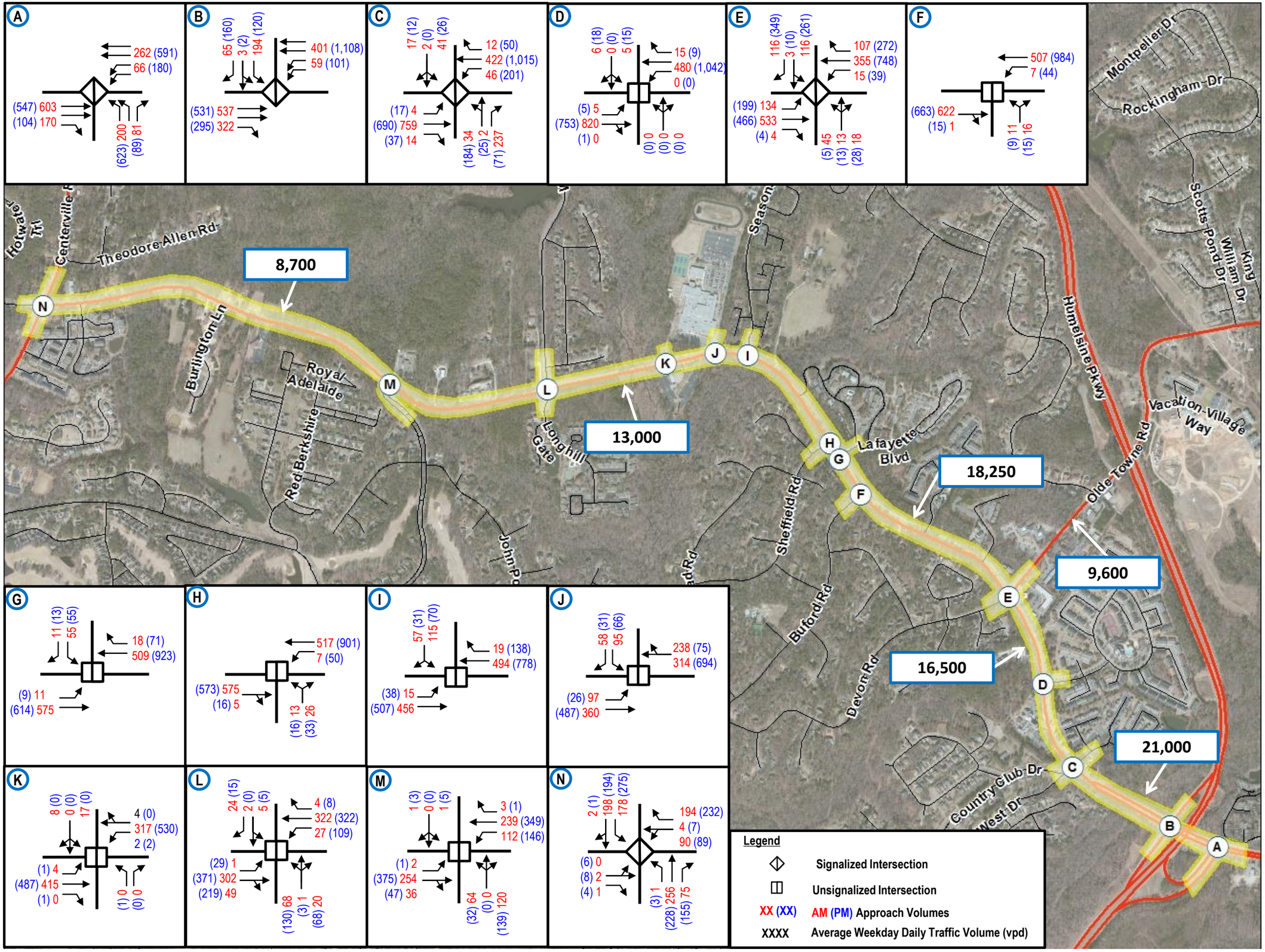
$$13{,}150 - 10{,}000 = 3{,}150/10{,}000 = 0.315 / (2034-2013) = 0.015$$

Kimley-Horn and Associates, Inc.

The linear equation approach reflects that traffic volumes are expected to increase approximately 31.5 percent over the defined 21 year period (2013 to 2034).

Based on the data findings and the proposed methodology, it is recommended that the growth rates presented in **Table 10** be used in conjunction with the linear calculation methodology (i.e., **Equation 1**) for the development of Longhill Road Corridor Study traffic volume projections. Existing 2013 AM and PM peak hour intersection turning movement volumes and average weekday daily traffic volumes are reflected in **Figure 2**. Horizon year 2034 traffic volume projections for AM and PM peak hour intersection turning movements and average weekday daily traffic volumes are reflected in **Figure 3.**

Figure 2: 2013 Existing Traffic Volumes



Study Intersections

Project Study Area

Primary Roads

Secondary Roads

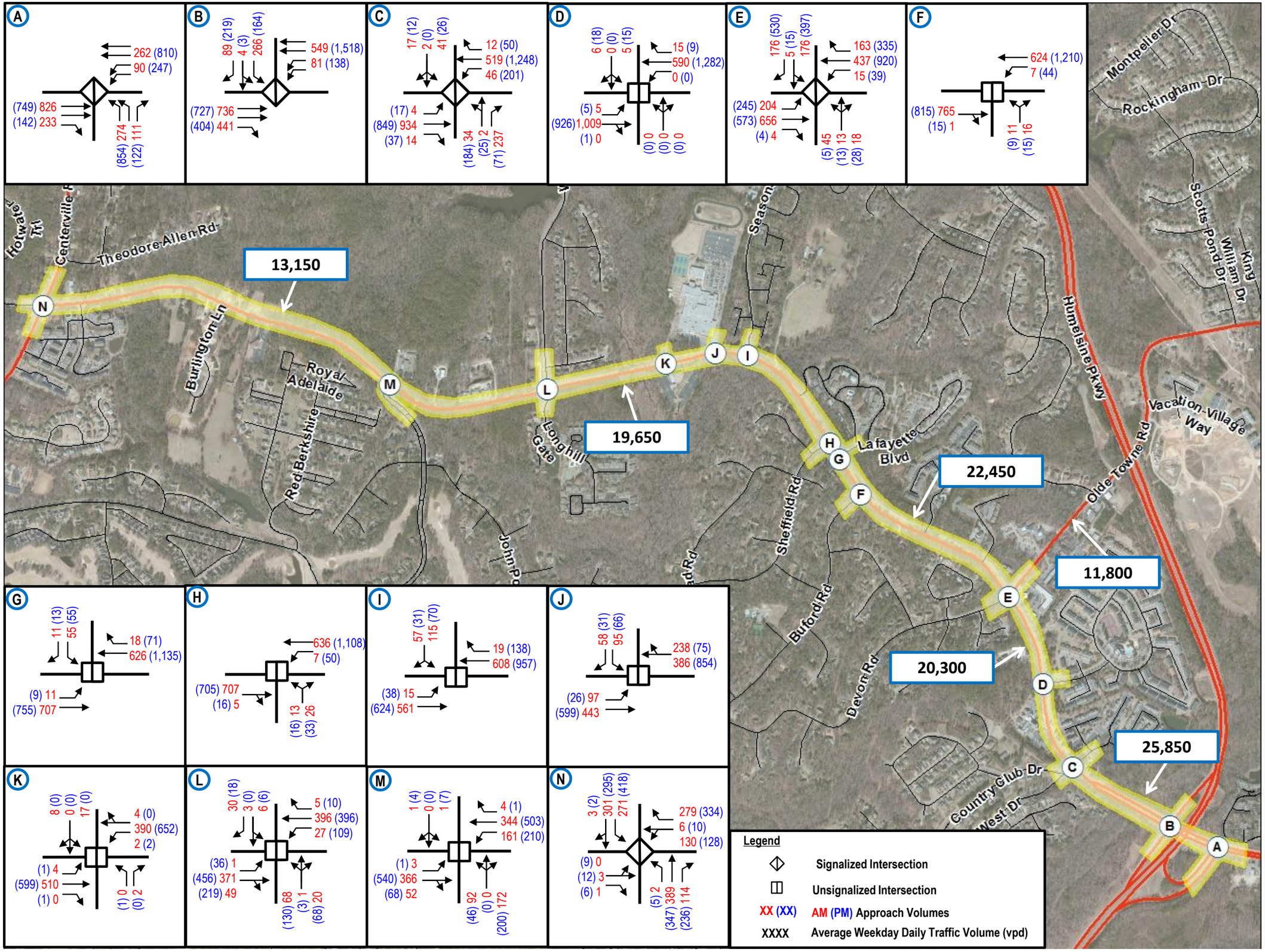
0 360 720 1,440 Feet

Kimley-Horn and Associates, Inc.

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe,

Figure 3:
2034 Future Traffic Volume Projections



Study Intersections
Project Study Area
Primary Roads
Secondary Roads

Feet
0 360 720 1,440

Kimley-Horn and Associates, Inc.

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe,

VDOT Historical Traffic Volume Data

Route	Start	End	AADT				Year to Year Growth Rate			Average Growth Rate
			2009	2010	2011	2012	2009-2010	2010-2011	2011-2012	2009-2012
Route 612 Longhill Road	47-614 Centerville Rd	.24 ME 47-830	7000	7200	7200	7000	2.86%	0.00%	-2.78%	0.00%
	0.24 ME 47-830	47-615 Longhill Connector Rd	17000	17000	17000	16000	0.00%	0.00%	-5.88%	-2.00%

Route	Start	End	AADT				Year to Year Growth Rate			Average Growth Rate
			2001	2002	2003	2004	2001-2002	2002-2003	2003-2004	2001-2004
Route 612 Longhill Road	47-614	.3 M FRM 47-1570	5400	5500	5700	-	1.85%	3.64%	-	7.46%
	0.3 M FRM 47-1570	47-615	14000	15000	16000	-	7.14%	6.67%	-	
	47-614	.24 ME 47-830	-	-	-	6700	-	-	17.54%	2.33%
	.24 ME 47-830	47-615	-	-	-	15000	-	-	-6.25%	

Assumed that the start and end of the two segments were the same for 2001 and 2004

James City County

2040 Projected Households by Transportation Analysis Zone

N

0 11,500 23,000 Feet

This drawing is neither a legally recorded map nor a survey and is not intended to be used as such. The information displayed is a compilation of records, information,and data obtained from various sources, and James City County is not responsible for its accuracy or how current it may be.

Number of Households

- 1 - 740
- 741 - 1480
- 1481 - 2220
- 2221 - 2960
- 2961 - 3700
- Proffed School Site
- Elementary School
- Middle School
- High School
- School Administration
- 1320 TAZ Number
- 2 Number of Households

****Criteria for map was selected by Hampton Roads Transportation Planning Organization

Path: P:\PLANNING\LeanneR\School_Board\House Holds 2040.mxd 9/26/2013

Ford’s Colony Approved but Unbuilt Lots



8,750 4,375 0 Feet

This drawing is neither a legally recorded map nor a survey and is not intended to be used as such. The information displayed is a compilation of records, information, and data obtained from various sources, and James City County is not responsible for its accuracy or how current it may be. If discrepancies are found, please contact the Office of Real Estate Assessments of James City County, Mapping/Gis Section.
Aerial Imagery Copyright 2011 James City County.


Freedom Park Master Plan
Dog Park
Fenced Area, Parking
Jolly Pond Rd
4th Middle &
9th Elementary
School Site
Freedom Park
Bridge
Parking
Multi-Use Trail
Colby Swamp
Environmental Education Center
Interpretative Displays
Scenic Overlook, Nature Trails, Parking
James City County
Colonnade Pkwy
Hotwater Lake
Amphitheater
Existing
Parking
Lakefront House
Meeting Rooms, Visitor Services
Sand Beach, Boat Rentals, Fishing
Picnic Areas, Trails, Parking
Picnic Areas
Parking
1680-1730 Domicile and Outbuildings
Reconstruction of Period House
Interpretative Areas
Picnic Areas, Meadows, Trails
Ellipse Garden
Williamsburg Botanical Garden
1803 First Free Black Settlement
Three recreated homes with period furnishings
Picnic Area, Meadows, Trails, Parking
History Interpretative Center
Archaeological Displays
Visitor Services, Office, Meeting Room, Storage
1781 Revolutonary Battle of Spencer's Ordinary
Interpretative Areas
Picnic Areas, Meadows, Trails, Parking
Magnolia Ridge
Sport Courts
Basketball, Tennis, Volleyball
Playground, Picnic Areas, Meadows, Parking
Aquatic Facility
Playground, Parking
Woodruff Ln
Galloway Rd
Yarmouth Ln
Birdella Dr
Jeremiah Wallace Ln
John Jackson Dr
Fox Hill Rd
Fox Run
Centerville Rd
Longhill Station Rd
Allegheny Rd
Mill Dam Ct
Walker Dr
Forest Glen Dr
Williamson Dr
Hillgrove Ln
Improvements
Freedom Park
4th Middle & 9th Elem. School
Primary Service Area
Parcel Boundaries/Ownership
Water
Archaeological Test Sites
Streets
Edge of Pavement
Topography
Elevation in feet
0 - 15.0
15.1 - 25.0
25.1 - 40.0
40.1 - 55.0
551 - 75.0
75.1 - 95.0
95.1 - 110.0
0 375 750 1,500 Feet
N
Proposed Features
Streets
Mountain Bike
Trails
Hotwater Lake
Archaeological
Areas
Interpretative Bldg
Picnic Shelters
Freed Slave Homes
Pool
Prepared 9/14/07 by Julia Vea, JCC



3 A0.06 EXISTING STREET VIEW



4 A0.06 EXISTING INTERIOR DRIVE

SITE AREA USE BY PHASE

1 A0.06

detail FUTURE BUILDING AREA

KEY	NAME	AREA	Perimeter
1	EXISTING FACILITY	23,530 SF	1096 LF
2	EXISTING GARAGE	591 SF	97 LF
3	PHASE 1 EXPANSION	4,439 SF	352 LF
4	PHASE 2 EXPANSION	14,221 SF	600 LF
5	FUTURE ADMINISTRATION	1,785 SF	212 LF
6	FUTURE MAINTENANCE BUILDING	2,485 SF	199 LF
7	FUTURE PRESCHOOL EXPANSION	8,729 SF	460 LF
8	FUTURE FAMILY LIFE CENTER	6,911 SF	348 LF
Grand total: 8		62,693 SF	

FUTURE OCCUPANTS - CHURCH USE ONLY

Number	Name	Area	Occupant Load	SF per Occupant	Code Occupants	PARKING REQ'D	PHASE
334	NARTHEX	3,056 SF	Assembly Unconcentrated	15	204	41	2
E101	PRESCHOOL CLASSROOM	798 SF	Day Care	35	23	5	EXIST
E102	PRESCHOOL CLASSROOM	798 SF	Day Care	35	23	5	EXIST
E108	PRESCHOOL CLASSROOM	797 SF	Day Care	35	23	5	EXIST
E109	PRESCHOOL CLASSROOM	797 SF	Day Care	35	23	5	EXIST
E440	PRESCHOOL CLASSROOM	794 SF	Day Care	35	23	5	FUTURE
E442	PRESCHOOL CLASSROOM	788 SF	Day Care	35	23	5	FUTURE
E443	PRESCHOOL CLASSROOM	793 SF	Day Care	35	23	5	FUTURE
E444	PRESCHOOL CLASSROOM	788 SF	Day Care	35	23	5	FUTURE
E445	PRESCHOOL CLASSROOM	788 SF	Day Care	35	23	5	FUTURE
E446	PRESCHOOL CLASSROOM	798 SF	Day Care	35	23	5	FUTURE
F467	FAMILY LIFE CENTER	5,411 SF	Assembly Concentrated	7	773	155	FUTURE
M147	MEETING	298 SF	Assembly Unconcentrated	15	20	4	EXIST
M148	MEETING	317 SF	Assembly Unconcentrated	15	21	4	EXIST
M150	MEETING	306 SF	Assembly Unconcentrated	15	20	4	EXIST
M151	MEETING	304 SF	Assembly Unconcentrated	15	20	4	EXIST
M219	MEETING	2,287 SF	Assembly Concentrated	7	327	65	2
M220	MEETING	539 SF	Assembly Unconcentrated	15	36	7	2
M221	MEETING	539 SF	Assembly Unconcentrated	15	36	7	2
M344	MULTI-PURPOSE ROOM	4,655 SF	Assembly Unconcentrated	15	310	62	2
M352	WELCOME CENTER	300 SF	Business Areas	100	3	1	2
S329	SANCTUARY	7,678 SF	Assembly Fixed Seats	7	1097	219	2
S340	AUDIO - VISUAL	310 SF	Business Areas	100	3	1	2
					3100	620	

PARKING COUNT EXISTING
Count
234

PARKING COUNT PHASE 2
Count
557

PARKING COUNT FUTURE
Count
661

FUTURE OVERALL AREA

PERCENT	AREA	USE	AREA TYPE
13.8%	83,150 SF	LANDSCAPE - EXISTING	Exterior Area
19.3%	116,477 SF	LANDSCAPE - PHASE 2	Exterior Area
11.8%	71,198 SF	PAVEMENT - EXISTING	Exterior Area
26.8%	161,906 SF	PAVEMENT - PHASE 2	Exterior Area
4.7%	28,087 SF	PAVEMENT - PHASE FUTURE	Exterior Area
4.0%	24,122 SF	BUILDING - EXISTING	Gross Building Area
0.7%	4,439 SF	BUILDING - PHASE 1	Gross Building Area
2.4%	14,221 SF	BUILDING - PHASE 2	Gross Building Area
3.3%	19,911 SF	BUILDING - PHASE FUTURE	Gross Building Area
13.3%	80,279 SF	LANDSCAPE - EXISTING	Gross Building Area
100.0%	603,790 SF		

USE AND PHASE

- BUILDING - EXISTING
- BUILDING - PHASE 1
- BUILDING - PHASE 2
- BUILDING - PHASE FUTURE
- LANDSCAPE - EXISTING
- LANDSCAPE - PHASE 2
- PAVEMENT - EXISTING
- PAVEMENT - PHASE 2
- PAVEMENT - PHASE FUTURE



2 A0.06 STREET ELEVATION

DRAFT
510 MONROE DRIVE
WILLIAMSBURG, VA
23185

King of Glory Lutheran Church & School

connect grow live

KING OF GLORY PRELIMINARY EXPANSION PLAN

4897 Longhill Road
Williamsburg, VA 23108

FUTURE SITE
AREA PLAN

A0.06

06 MAY 2012

6/14/2012 11:57:34 AM C:\Users\Mwt2\Documents\Revit\4897 Longhill Road, Williamsburg, VA\4897 Longhill Road, Williamsburg, VA-A.rvt

Warhill Sports Complex
2004 Master Plan



A- Baseball Complex
- 5 Baseball Fields, lighted
- 1 Multiuse Field for T-ball
- Parking- 260-400 Spaces
- Concession/Rest Room Building

B- Softball Complex
- 4 Large Softball/Baseball Fields
- Parking- 260-400 Spaces
- Concession/Rest Room Building

C- Soccer Complex
- 8 Soccer Fields, adjustable orientation
- Parking- 440 Spaces
- Concession/Rest Room Building

D- Stadium Complex
- Football, Soccer, Track and Field, lighted
- 600-1000 Stadium parking, some shared, some available in the utility corridor (N1)

E- Sports Field Complex
- 2 Multi-purpose Practice Fields
- 1 Lighted Competition Field
- Bleachers for 500
- Concession/Rest Room Building
- Parking - 160 Spaces

F- Multi-purpose Field Complex
- 8 Multi-purpose Fields, adjustable orientation, lighted
- Parking - 400 Spaces
- Concession/Rest Room Building

G1- Existing WISC Building
G2- Proposed Indoor Sports/Basketball Facility

H- Picnic Area
- 4 (or more) Picnic Shelters
- Loop Road with Parking on shoulders
- Access to 3 Ponds
- Picnic Benches
- Nature Trail around Pond
- Playground
- Volleyball and Basketball Courts
- Horseshoe Pits
- Multi Purpose Fields and Open Meadows
- Nature Center with Rest Rooms
- Fishing Platforms and Piers

I- Picnic Area
- Picnic Shelters
- Loop Road with Access to Pond
- Picnic Benches
- Parking- Shoulders on the Loop
- Nature Trail around Pond
- Playground
- Open Meadows
- Fishing Platforms and Piers

J1- Unprogrammed Open Space
J2- Unprogrammed Open Space
J3- Unprogrammed Open Space
J4- Unprogrammed Open Space
J5- Unprogrammed Open Space

K1- Multiuse Nature Trail, soft surface, 3.5 Miles around park perimeter with connections to Lafayette High School, Seasons Trace, and other neighborhoods
K2- Greenway access to Centerville Road

L- Paved Multiuse Trail in utility corridor

M- Paved Multiuse Trails around Soccer Complex- 1 mile and Baseball/Softball Complex- 1-mile

N1- Proposed joint development of shared parking between the stadium and future high school development on the remaining Warhill property within the Regional Utility Easement.
N2- Unprogrammed Open Space capable of supporting additional stadium parking.
N3- Dominion Power Substation

O- Two options for a secondary park access to Centerville Road for park expansion, stadium and future high school development. Vehicular control needed to prevent cut-through to Centerville Road, but open for secondary emergency access in accordance with the VDOT Dam Agreement.

P- Maintenance area- ¾ -acre for maintenance, storage, and park headquarters/visitor information

Q- BMX Park

Master Plan Summary
1996 Master Plan included A, B, C, D, K1, P.
G1 (WISC) was built in 2000
2004 Master Plan includes E, F, G2, H, I, J, K2, L, M, O, Q.

0 0.15 0.3 Miles

1 inch equals 800 feet

This drawing is neither a legally recorded map nor a survey and is not intended to be used as such. The information displayed is a compilation of records, information, and data obtained from various sources, and James City County is not responsible for its accuracy or how current it may be. If discrepancies are found, please contact the Office of Real Estate Assessments of James City County, Mapping/Gis Section.

Copyright James City County GIS Office
This map (C:\Gis\Departments\Park_and_Rec\Sports_Complex\New_Fields_Stadium\warhill_master_plan_rec_facilities.mxd) was produced by KAH on 5/5/2004 at 2:16:56 PM

April 2004

Appendix E

Capacity Analysis

Intersection A

Route 199 WB Off/On-Ramp and Longhill Road

Intersection LOS Analysis

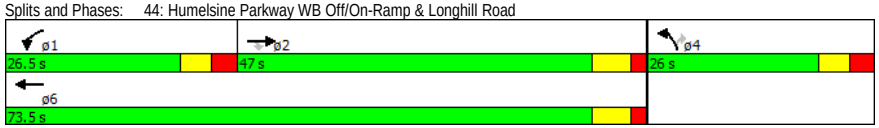
AM/PM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	603	170	66	262	200	81
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Satd. Flow (RTOR)		224				104
Adj. Flow (vph)	744	224	92	332	253	104
Lane Group Flow (vph)	744	224	92	332	253	104
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Total Split (s)	47.0	47.0	26.5	73.5	26.0	26.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	26.1	26.1	7.6	36.5	10.6	10.6
Actuated g/C Ratio	0.43	0.43	0.12	0.60	0.17	0.17
v/c Ratio	0.49	0.28	0.21	0.16	0.43	0.29
Control Delay	14.7	3.0	30.4	5.2	28.2	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	3.0	30.4	5.2	28.2	9.1
LOS	B	A	C	A	C	A
Approach Delay	12.0			10.6	22.6	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 61.3
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 13.8 — Intersection LOS: B
Intersection Capacity Utilization 42.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 44: Humelsine Parkway WB Off/On-Ramp & Longhill Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	603	170	66	262	200	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	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	0.81	0.76	0.72	0.79	0.79	0.78
Adj. Flow (vph)	744	224	92	332	253	104
RTOR Reduction (vph)	0	129	0	0	0	86
Lane Group Flow (vph)	744	95	92	332	253	18
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	26.1	26.1	5.6	38.2	10.6	10.6
Effective Green, g (s)	26.1	26.1	5.6	38.2	10.6	10.6
Actuated g/C Ratio	0.42	0.42	0.09	0.62	0.17	0.17
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	5.0	5.0	3.0	5.0	3.0	3.0
Lane Grp Cap (vph)	1494	668	311	2187	588	271
v/s Ratio Prot	c0.21		c0.03	0.09	c0.07	
v/s Ratio Perm		0.06				0.01
v/c Ratio	0.50	0.14	0.30	0.15	0.43	0.07
Uniform Delay, d1	13.1	11.0	26.3	5.0	22.9	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.2	0.5	0.1	0.5	0.1
Delay (s)	13.6	11.2	26.8	5.0	23.4	21.6
Level of Service	B	B	C	A	C	C
Approach Delay (s)	13.0			9.8	22.9	
Approach LOS	B			A	C	

Intersection Summary

HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	19.5
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

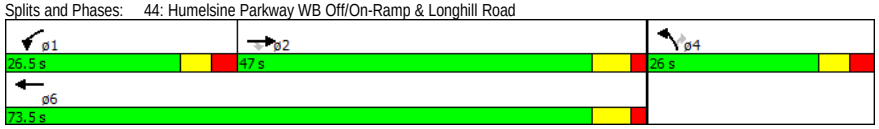
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	547	104	180	591	623	89
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Satd. Flow (RTOR)		107				92
Adj. Flow (vph)	564	107	186	609	642	92
Lane Group Flow (vph)	564	107	186	609	642	92
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Total Split (s)	47.0	47.0	26.5	73.5	26.0	26.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	20.3	20.3	9.2	36.1	18.5	18.5
Actuated g/C Ratio	0.30	0.30	0.14	0.53	0.27	0.27
v/c Ratio	0.53	0.19	0.40	0.32	0.68	0.18
Control Delay	21.9	5.1	30.9	9.4	27.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	5.1	30.9	9.4	27.6	6.8
LOS	C	A	C	A	C	A
Approach Delay	19.2			14.4	25.0	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 99.5
Actuated Cycle Length: 67.8
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 19.4 — Intersection LOS: B
Intersection Capacity Utilization 54.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 44: Humelsine Parkway WB Off/On-Ramp & Longhill Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	547	104	180	591	623	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	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	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	564	107	186	609	642	92
RTOR Reduction (vph)	0	75	0	0	0	67
Lane Group Flow (vph)	564	32	186	609	642	25
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	20.4	20.4	9.2	36.1	18.5	18.5
Effective Green, g (s)	20.4	20.4	9.2	36.1	18.5	18.5
Actuated g/C Ratio	0.30	0.30	0.14	0.53	0.27	0.27
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	5.0	5.0	3.0	5.0	3.0	3.0
Lane Grp Cap (vph)	1067	477	467	1889	939	433
v/s Ratio Prot	c0.16		0.05	c0.17	c0.19	
v/s Ratio Perm		0.02				0.02
v/c Ratio	0.53	0.07	0.40	0.32	0.68	0.06
Uniform Delay, d1	19.6	16.8	26.7	8.9	21.9	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.6	0.2	2.1	0.1
Delay (s)	20.5	16.9	27.2	9.1	24.0	18.2
Level of Service	C	B	C	A	C	B
Approach Delay (s)	19.9			13.3	23.3	
Approach LOS	B			B	C	

Intersection Summary

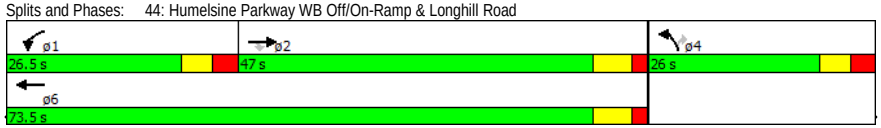
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	67.6	Sum of lost time (s)	19.5
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	810	230	90	360	275	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	225		175	175
Storage Lanes		1	2		1	1
Taper Length (ft)			75		200	
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		256				128
Link Speed (mph)	45			45	30	
Link Distance (ft)	579			716	472	
Travel Time (s)	8.8			10.8	10.7	
Adj. Flow (vph)	900	256	100	400	306	128
Lane Group Flow (vph)	900	256	100	400	306	128
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Total Split (s)	47.0	47.0	26.5	73.5	26.0	26.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	31.6	31.6	8.0	42.3	12.1	12.1
Actuated g/C Ratio	0.46	0.46	0.12	0.62	0.18	0.18
v/c Ratio	0.55	0.30	0.25	0.18	0.50	0.33
Control Delay	15.6	2.8	34.3	5.4	31.7	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	2.8	34.3	5.4	31.7	8.9
LOS	B	A	C	A	C	A
Approach Delay	12.8			11.2	25.0	
Approach LOS	B			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.5			
Actuated Cycle Length: 68.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 50.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 44: Humelsine Parkway WB Off/On-Ramp & Longhill Road



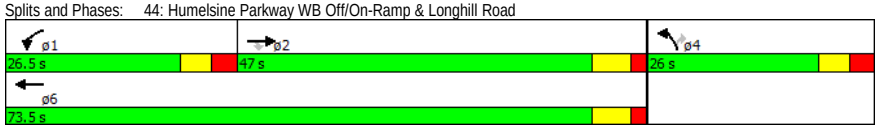
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	810	230	90	360	275	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	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	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	900	256	100	400	306	128
RTOR Reduction (vph)	0	139	0	0	0	106
Lane Group Flow (vph)	900	117	100	400	306	22
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	31.6	31.6	5.9	44.0	12.1	12.1
Effective Green, g (s)	31.6	31.6	5.9	44.0	12.1	12.1
Actuated g/C Ratio	0.46	0.46	0.09	0.64	0.18	0.18
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	5.0	5.0	3.0	5.0	3.0	3.0
Lane Grp Cap (vph)	1618	723	293	2253	601	277
v/s Ratio Prot	c0.25		c0.03	0.11	c0.09	
v/s Ratio Perm		0.07				0.01
v/c Ratio	0.56	0.16	0.34	0.18	0.51	0.08
Uniform Delay, d1	13.6	11.0	29.8	5.1	25.8	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.7	0.1	0.7	0.1
Delay (s)	14.4	11.2	30.5	5.2	26.5	24.0
Level of Service	B	B	C	A	C	C
Approach Delay (s)	13.7			10.3	25.7	
Approach LOS	B			B	C	

Intersection Summary				
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.52			
Actuated Cycle Length (s)	69.1	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	50.7%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	730	145	250	810	855	125
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Satd. Flow (RTOR)		161				102
Adj. Flow (vph)	811	161	278	900	950	139
Lane Group Flow (vph)	811	161	278	900	950	139
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Total Split (s)	47.0	47.0	26.5	73.5	26.0	26.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	30.4	30.4	12.1	49.1	19.8	19.8
Actuated g/C Ratio	0.37	0.37	0.15	0.60	0.24	0.24
v/c Ratio	0.62	0.23	0.55	0.43	1.15	0.30
Control Delay	23.2	3.9	38.0	9.2	112.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	3.9	38.0	9.2	112.2	12.7
LOS	C	A	D	A	F	B
Approach Delay	20.0			16.0	99.5	
Approach LOS	C			B	F	

Intersection Summary			
Cycle Length: 99.5			
Actuated Cycle Length: 82.1			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 68.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 44: Humelsine Parkway WB Off/On-Ramp & Longhill Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	730	145	250	810	855	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	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	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	811	161	278	900	950	139
RTOR Reduction (vph)	0	101	0	0	0	77
Lane Group Flow (vph)	811	60	278	900	950	62
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	30.5	30.5	12.1	49.1	19.8	19.8
Effective Green, g (s)	30.5	30.5	12.1	49.1	19.8	19.8
Actuated g/C Ratio	0.37	0.37	0.15	0.60	0.24	0.24
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	5.0	5.0	3.0	5.0	3.0	3.0
Lane Grp Cap (vph)	1317	589	507	2121	829	382
v/s Ratio Prot	c0.23		0.08	c0.25	c0.28	
v/s Ratio Perm		0.04				0.04
v/c Ratio	0.62	0.10	0.55	0.42	1.15	0.16
Uniform Delay, d1	20.9	16.8	32.4	8.8	31.1	24.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.2	1.2	0.3	79.7	0.2
Delay (s)	22.2	16.9	33.6	9.1	110.8	24.7
Level of Service	C	B	C	A	F	C
Approach Delay (s)	21.3			14.9	99.8	
Approach LOS	C			B	F	

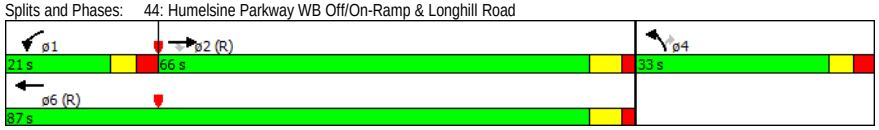
Intersection Summary				
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	19.5	
Intersection Capacity Utilization	68.0%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	810	230	90	360	275	115
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Satd. Flow (RTOR)		250				125
Adj. Flow (vph)	880	250	98	391	299	125
Lane Group Flow (vph)	880	250	98	391	299	125
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Total Split (s)	66.0	66.0	21.0	87.0	33.0	33.0
Total Lost Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Act Effct Green (s)	76.0	76.0	8.8	91.3	15.7	15.7
Actuated g/C Ratio	0.63	0.63	0.07	0.76	0.13	0.13
v/c Ratio	0.39	0.23	0.39	0.15	0.66	0.40
Control Delay	10.1	3.1	57.1	4.3	56.8	11.6
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	3.1	57.1	4.3	56.8	11.6
LOS	B	A	E	A	E	B
Approach Delay	8.7			14.8	43.4	
Approach LOS	A			B	D	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 17.4 — Intersection LOS: B
Intersection Capacity Utilization 50.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 44: Humelsine Parkway WB Off/On-Ramp & Longhill Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	810	230	90	360	275	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	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)	880	250	98	391	299	125
RTOR Reduction (vph)	0	92	0	0	0	109
Lane Group Flow (vph)	880	158	98	391	299	16
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	76.0	76.0	8.8	91.3	15.7	15.7
Effective Green, g (s)	76.0	76.0	8.8	91.3	15.7	15.7
Actuated g/C Ratio	0.63	0.63	0.07	0.76	0.13	0.13
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	5.0	5.0	3.0	5.0	3.0	3.0
Lane Grp Cap (vph)	2241	1002	251	2692	449	207
v/s Ratio Prot	c0.25		c0.03	0.11	c0.09	
v/s Ratio Perm		0.10				0.01
v/c Ratio	0.39	0.16	0.39	0.15	0.67	0.08
Uniform Delay, d1	10.7	9.0	53.0	3.9	49.7	45.8
Progression Factor	0.84	1.94	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.3	1.0	0.1	3.7	0.2
Delay (s)	9.5	17.7	54.0	4.0	53.4	46.0
Level of Service	A	B	D	A	D	D
Approach Delay (s)	11.3			14.0	51.2	
Approach LOS	B			B	D	

Intersection Summary

HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

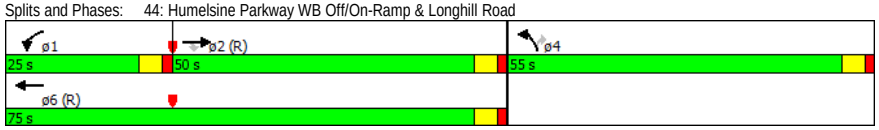
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	730	145	250	810	855	125
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	3433	3539	3433	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	3433	3539	3433	1583
Satd. Flow (RTOR)		158				102
Adj. Flow (vph)	793	158	272	880	929	136
Lane Group Flow (vph)	793	158	272	880	929	136
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Total Split (s)	50.0	50.0	25.0	75.0	55.0	55.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Act Effct Green (s)	57.4	57.4	15.5	77.9	42.1	42.1
Actuated g/C Ratio	0.44	0.44	0.12	0.60	0.32	0.32
v/c Ratio	0.51	0.20	0.66	0.41	0.84	0.23
Control Delay	17.6	3.8	62.5	15.4	47.9	9.8
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	17.6	3.8	62.5	15.5	47.9	9.8
LOS	B	A	E	B	D	A
Approach Delay	15.3			26.6	43.0	
Approach LOS	B			C	D	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 39 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 28.7 — Intersection LOS: C
Intersection Capacity Utilization 64.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 44: Humelsine Parkway WB Off/On-Ramp & Longhill Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	730	145	250	810	855	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
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)	793	158	272	880	929	136
RTOR Reduction (vph)	0	88	0	0	0	69
Lane Group Flow (vph)	793	70	272	880	929	67
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	4	
Permitted Phases		2				4
Actuated Green, G (s)	57.4	57.4	15.5	77.9	42.1	42.1
Effective Green, g (s)	57.4	57.4	15.5	77.9	42.1	42.1
Actuated g/C Ratio	0.44	0.44	0.12	0.60	0.32	0.32
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	5.0	5.0	3.0	5.0	3.0	3.0
Lane Grp Cap (vph)	1562	698	409	2120	1111	512
v/s Ratio Prot	c0.22		c0.08	0.25	c0.27	
v/s Ratio Perm		0.04				0.04
v/c Ratio	0.51	0.10	0.67	0.42	0.84	0.13
Uniform Delay, d1	26.1	21.2	54.8	13.9	40.8	31.0
Progression Factor	0.59	0.79	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.3	4.1	0.6	5.6	0.1
Delay (s)	16.5	17.0	58.8	14.5	46.3	31.1
Level of Service	B	B	E	B	D	C
Approach Delay (s)	16.6			25.0	44.4	
Approach LOS	B			C	D	

Intersection Summary

HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection **B**

Route 199 EB Off/On-Ramp and Longhill Road

Intersection LOS Analysis

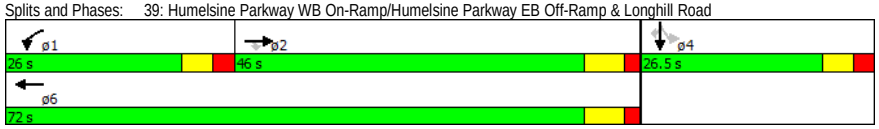
AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	537	322	59	401	0	0	0	0	194	3	65
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.957	
Satd. Flow (prot)	0	3539	1583	3433	3539	0	0	0	0	1681	1694	1583
Flt Permitted				0.950						0.950	0.957	
Satd. Flow (perm)	0	3539	1583	3433	3539	0	0	0	0	1681	1694	1583
Satd. Flow (RTOR)			418									105
Adj. Flow (vph)	0	571	418	76	405	0	0	0	0	240	12	84
Lane Group Flow (vph)	0	571	418	76	405	0	0	0	0	125	127	84
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Total Split (s)		46.0	46.0	26.0	72.0					26.5	26.5	26.5
Total Lost Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Act Effct Green (s)		23.5	23.5	7.4	30.2					10.8	10.8	10.8
Actuated g/C Ratio		0.43	0.43	0.13	0.55					0.20	0.20	0.20
v/c Ratio		0.38	0.46	0.17	0.21					0.38	0.38	0.21
Control Delay		12.7	3.4	28.1	5.9					27.4	27.4	5.8
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		12.7	3.4	28.1	5.9					27.4	27.4	5.8
LOS		B	A	C	A					C	C	A
Approach Delay		8.8			9.4						22.0	
Approach LOS		A			A						C	

Intersection Summary

Cycle Length: 98.5
Actuated Cycle Length: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 11.4 Intersection LOS: B
Intersection Capacity Utilization 45.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 39: Humelsine Parkway WB On-Ramp/Humelsine Parkway EB Off-Ramp & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	537	322	59	401	0	0	0	0	194	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1693	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1693	1583
Peak-hour factor, PHF	0.25	0.94	0.77	0.78	0.99	0.25	0.25	0.25	0.25	0.81	0.25	0.77
Adj. Flow (vph)	0	571	418	76	405	0	0	0	0	240	12	84
RTOR Reduction (vph)	0	0	244	0	0	0	0	0	0	0	0	68
Lane Group Flow (vph)	0	571	174	76	405	0	0	0	0	125	127	16
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		23.5	23.5	3.8	33.3					10.8	10.8	10.8
Effective Green, g (s)		23.5	23.5	3.8	33.3					10.8	10.8	10.8
Actuated g/C Ratio		0.42	0.42	0.07	0.59					0.19	0.19	0.19
Clearance Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1469	657	230	2082					320	323	302
v/s Ratio Prot		c0.16		0.02	c0.11							
v/s Ratio Perm			0.11							0.07	0.08	0.01
v/c Ratio		0.39	0.26	0.33	0.19					0.39	0.39	0.05
Uniform Delay, d1		11.5	10.9	25.2	5.4					20.0	20.0	18.7
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5	0.8	0.1					0.8	0.8	0.1
Delay (s)		11.9	11.3	26.0	5.5					20.8	20.8	18.8
Level of Service		B	B	C	A					C	C	B
Approach Delay (s)		11.7			8.8			0.0			20.3	
Approach LOS		B			A			A			C	

Intersection Summary

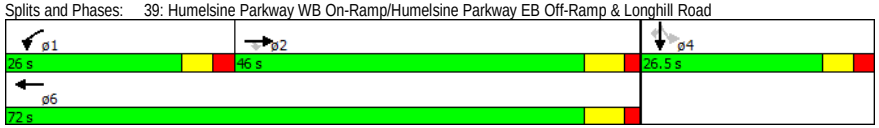
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	56.6	Sum of lost time (s)	18.5
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	531	295	101	1108	0	0	0	0	120	2	160
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.954	
Satd. Flow (prot)	0	3539	1583	3433	3539	0	0	0	0	1681	1688	1583
Flt Permitted				0.950						0.950	0.954	
Satd. Flow (perm)	0	3539	1583	3433	3539	0	0	0	0	1681	1688	1583
Satd. Flow (RTOR)			304									112
Adj. Flow (vph)	0	547	304	104	1142	0	0	0	0	124	2	165
Lane Group Flow (vph)	0	547	304	104	1142	0	0	0	0	63	63	165
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Total Split (s)		46.0	46.0	26.0	72.0					26.5	26.5	26.5
Total Lost Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Act Effct Green (s)		22.3	22.3	7.4	32.7					8.9	8.9	8.9
Actuated g/C Ratio		0.41	0.41	0.14	0.60					0.16	0.16	0.16
v/c Ratio		0.38	0.37	0.22	0.54					0.23	0.23	0.47
Control Delay		13.4	3.3	25.4	7.4					24.8	24.8	14.7
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		13.4	3.3	25.4	7.4					24.8	24.8	14.7
LOS		B	A	C	A					C	C	B
Approach Delay		9.8			8.9						19.1	
Approach LOS		A			A						B	

Intersection Summary			
Cycle Length: 98.5			
Actuated Cycle Length: 54.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 51.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 39: Humelsine Parkway WB On-Ramp/Humelsine Parkway EB Off-Ramp & Longhill Road



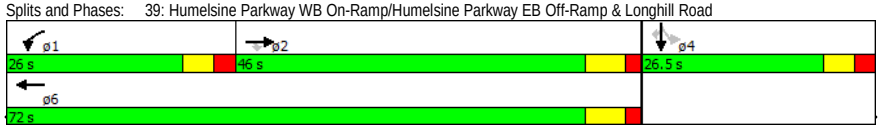
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	531	295	101	1108	0	0	0	0	120	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1688	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1688	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	547	304	104	1142	0	0	0	0	124	2	165
RTOR Reduction (vph)	0	0	182	0	0	0	0	0	0	0	0	94
Lane Group Flow (vph)	0	547	122	104	1142	0	0	0	0	63	63	71
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		22.3	22.3	5.8	34.1					8.9	8.9	8.9
Effective Green, g (s)		22.3	22.3	5.8	34.1					8.9	8.9	8.9
Actuated g/C Ratio		0.40	0.40	0.10	0.61					0.16	0.16	0.16
Clearance Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1421	636	358	2174					269	270	253
v/s Ratio Prot		0.15		0.03	c0.32							
v/s Ratio Perm			0.08							0.04	0.04	c0.04
v/c Ratio		0.38	0.19	0.29	0.53					0.23	0.23	0.28
Uniform Delay, d1		11.7	10.8	22.9	6.1					20.3	20.3	20.5
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.3	0.5	0.4					0.4	0.4	0.6
Delay (s)		12.1	11.1	23.4	6.5					20.8	20.8	21.1
Level of Service		B	B	C	A					C	C	C
Approach Delay (s)		11.7			7.9			0.0			21.0	
Approach LOS		B			A			A			C	

Intersection Summary					
HCM 2000 Control Delay		10.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio		0.55			
Actuated Cycle Length (s)		55.5	Sum of lost time (s)	18.5	
Intersection Capacity Utilization		51.0%	ICU Level of Service	A	
Analysis Period (min)		15			
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	775	450	85	550	0	0	0	0	265	5	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	175		0	0		0	415		325
Storage Lanes	0		1	2		0	0		0	1		1
Taper Length (ft)	25			120			25			100		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.954	
Satd. Flow (prot)	0	3539	1583	3433	3539	0	0	0	0	1681	1688	1583
Flt Permitted				0.950						0.950	0.954	
Satd. Flow (perm)	0	3539	1583	3433	3539	0	0	0	0	1681	1688	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			500									105
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		560			579			299			720	
Travel Time (s)		8.5			8.8			6.8			16.4	
Adj. Flow (vph)	0	861	500	94	611	0	0	0	0	294	6	100
Lane Group Flow (vph)	0	861	500	94	611	0	0	0	0	150	150	100
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Total Split (s)		46.0	46.0	26.0	72.0					26.5	26.5	26.5
Total Lost Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Act Effct Green (s)		33.5	33.5	7.8	43.7					12.6	12.6	12.6
Actuated g/C Ratio		0.48	0.48	0.11	0.63					0.18	0.18	0.18
v/c Ratio		0.51	0.49	0.24	0.28					0.50	0.50	0.27
Control Delay		14.9	3.3	35.0	6.1					35.3	35.2	8.0
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		14.9	3.3	35.0	6.1					35.3	35.2	8.0
LOS		B	A	D	A					D	D	A
Approach Delay		10.6			10.0						28.4	
Approach LOS		B			A						C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 98.5			
Actuated Cycle Length: 69.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 39: Humelsine Parkway WB On-Ramp/Humelsine Parkway EB Off-Ramp & Longhill Road



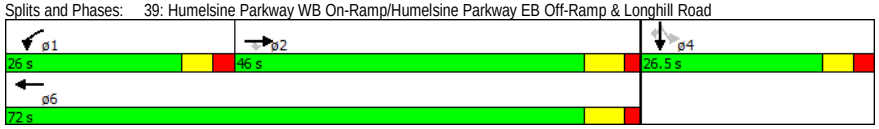
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	775	450	85	550	0	0	0	0	265	5	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1689	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1689	1583
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)	0	861	500	94	611	0	0	0	0	294	6	100
RTOR Reduction (vph)	0	0	262	0	0	0	0	0	0	0	0	82
Lane Group Flow (vph)	0	861	238	94	611	0	0	0	0	150	150	18
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		33.5	33.5	5.8	45.3					12.6	12.6	12.6
Effective Green, g (s)		33.5	33.5	5.8	45.3					12.6	12.6	12.6
Actuated g/C Ratio		0.48	0.48	0.08	0.64					0.18	0.18	0.18
Clearance Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1684	753	282	2277					300	302	283
v/s Ratio Prot		c0.24		0.03	c0.17							
v/s Ratio Perm			0.15							c0.09	0.09	0.01
v/c Ratio		0.51	0.32	0.33	0.27					0.50	0.50	0.06
Uniform Delay, d1		12.8	11.4	30.5	5.4					26.1	26.0	24.0
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.5	0.7	0.1					1.3	1.3	0.1
Delay (s)		13.3	11.9	31.2	5.5					27.4	27.3	24.1
Level of Service		B	B	C	A					C	C	C
Approach Delay (s)		12.8			9.0			0.0			26.5	
Approach LOS		B			A			A			C	

Intersection Summary					
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.50				
Actuated Cycle Length (s)	70.4	Sum of lost time (s)		18.5	
Intersection Capacity Utilization	54.9%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	710	405	150	1515	0	0	0	0	165	5	220
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.955	
Satd. Flow (prot)	0	3539	1583	3433	3539	0	0	0	0	1681	1690	1583
Flt Permitted				0.950						0.950	0.955	
Satd. Flow (perm)	0	3539	1583	3433	3539	0	0	0	0	1681	1690	1583
Satd. Flow (RTOR)			450									105
Adj. Flow (vph)	0	789	450	167	1683	0	0	0	0	183	6	244
Lane Group Flow (vph)	0	789	450	167	1683	0	0	0	0	95	94	244
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Total Split (s)		46.0	46.0	26.0	72.0					26.5	26.5	26.5
Total Lost Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Act Effct Green (s)		41.0	41.0	9.7	57.0					13.5	13.5	13.5
Actuated g/C Ratio		0.49	0.49	0.12	0.68					0.16	0.16	0.16
v/c Ratio		0.45	0.45	0.42	0.70					0.35	0.34	0.71
Control Delay		15.4	3.0	40.7	10.3					37.1	37.0	32.2
Queue Delay		0.0	0.0	0.0	0.3					0.0	0.0	0.0
Total Delay		15.4	3.0	40.7	10.7					37.1	37.0	32.2
LOS		B	A	D	B					D	D	C
Approach Delay		10.9			13.4						34.3	
Approach LOS		B			B						C	

Intersection Summary			
Cycle Length: 98.5			
Actuated Cycle Length: 83.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 65.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 39: Humelsine Parkway WB On-Ramp/Humelsine Parkway EB Off-Ramp & Longhill Road



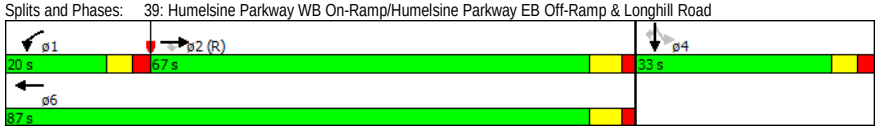
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	710	405	150	1515	0	0	0	0	165	5	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1690	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1690	1583
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)	0	789	450	167	1683	0	0	0	0	183	6	244
RTOR Reduction (vph)	0	0	226	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	789	224	167	1683	0	0	0	0	95	94	156
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		41.3	41.3	9.7	57.0					13.5	13.5	13.5
Effective Green, g (s)		41.3	41.3	9.7	57.0					13.5	13.5	13.5
Actuated g/C Ratio		0.50	0.50	0.12	0.69					0.16	0.16	0.16
Clearance Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1760	787	401	2430					273	274	257
v/s Ratio Prot		0.22		0.05	c0.48							
v/s Ratio Perm			0.14							0.06	0.06	c0.10
v/c Ratio		0.45	0.28	0.42	0.69					0.35	0.34	0.61
Uniform Delay, d1		13.5	12.2	34.0	7.8					30.8	30.8	32.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.4	0.7	1.1					0.8	0.8	4.0
Delay (s)		13.9	12.6	34.7	8.9					31.6	31.6	36.3
Level of Service		B	B	C	A					C	C	D
Approach Delay (s)		13.4			11.2			0.0			34.3	
Approach LOS		B			B			A			C	

Intersection Summary					
HCM 2000 Control Delay		14.8	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.74			
Actuated Cycle Length (s)		83.0	Sum of lost time (s)		18.5
Intersection Capacity Utilization		65.9%	ICU Level of Service		C
Analysis Period (min)		15			
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	775	450	85	550	0	0	0	0	265	5	90
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.954	
Satd. Flow (prot)	0	3539	1583	3433	3539	0	0	0	0	1681	1688	1583
Flt Permitted				0.950						0.950	0.954	
Satd. Flow (perm)	0	3539	1583	3433	3539	0	0	0	0	1681	1688	1583
Satd. Flow (RTOR)			489									98
Adj. Flow (vph)	0	842	489	92	598	0	0	0	0	288	5	98
Lane Group Flow (vph)	0	842	489	92	598	0	0	0	0	147	146	98
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Total Split (s)		67.0	67.0	20.0	87.0					33.0	33.0	33.0
Total Lost Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Act Effct Green (s)		76.8	76.8	8.6	91.4					16.1	16.1	16.1
Actuated g/C Ratio		0.64	0.64	0.07	0.76					0.13	0.13	0.13
v/c Ratio		0.37	0.41	0.38	0.22					0.65	0.65	0.33
Control Delay		7.3	1.1	45.2	8.1					62.1	61.6	11.3
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		7.3	1.1	45.2	8.1					62.1	61.6	11.3
LOS		A	A	D	A					E	E	B
Approach Delay		5.0			13.1						49.2	
Approach LOS		A			B						D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 54.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 39: Humelsine Parkway WB On-Ramp/Humelsine Parkway EB Off-Ramp & Longhill Road



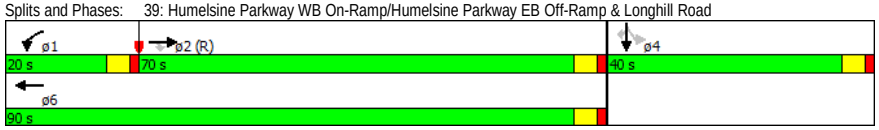
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	775	450	85	550	0	0	0	0	265	5	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1688	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1688	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)	0	842	489	92	598	0	0	0	0	288	5	98
RTOR Reduction (vph)	0	0	176	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	842	313	92	598	0	0	0	0	147	146	13
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		76.8	76.8	8.6	91.4					16.1	16.1	16.1
Effective Green, g (s)		76.8	76.8	8.6	91.4					16.1	16.1	16.1
Actuated g/C Ratio		0.64	0.64	0.07	0.76					0.13	0.13	0.13
Clearance Time (s)		6.5	6.5	6.0	6.5					6.0	6.0	6.0
Vehicle Extension (s)		5.0	5.0	3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2264	1013	246	2695					225	226	212
v/s Ratio Prot		c0.24		c0.03	0.17							
v/s Ratio Perm			0.20							c0.09	0.09	0.01
v/c Ratio		0.37	0.31	0.37	0.22					0.65	0.65	0.06
Uniform Delay, d1		10.2	9.7	53.1	4.1					49.3	49.2	45.4
Progression Factor		0.61	0.16	0.78	1.74					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.7	0.9	0.1					6.7	6.2	0.1
Delay (s)		6.7	2.3	42.2	7.2					56.0	55.5	45.5
Level of Service		A	A	D	A					E	E	D
Approach Delay (s)		5.1			11.9			0.0			53.1	
Approach LOS		A			B			A			D	

Intersection Summary					
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.42				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		18.5	
Intersection Capacity Utilization	54.9%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	710	405	150	1515	0	0	0	0	165	5	220
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.955	
Satd. Flow (prot)	0	3539	1583	3433	3539	0	0	0	0	1681	1690	1583
Flt Permitted				0.950						0.950	0.955	
Satd. Flow (perm)	0	3539	1583	3433	3539	0	0	0	0	1681	1690	1583
Satd. Flow (RTOR)			440									59
Adj. Flow (vph)	0	772	440	163	1647	0	0	0	0	179	5	239
Lane Group Flow (vph)	0	772	440	163	1647	0	0	0	0	91	93	239
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Total Split (s)		70.0	70.0	20.0	90.0					40.0	40.0	40.0
Total Lost Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Act Effct Green (s)		82.4	82.4	11.5	98.9					21.1	21.1	21.1
Actuated g/C Ratio		0.63	0.63	0.09	0.76					0.16	0.16	0.16
v/c Ratio		0.34	0.38	0.54	0.61					0.33	0.34	0.78
Control Delay		3.3	1.2	56.8	16.6					49.3	49.4	55.5
Queue Delay		0.0	0.0	0.0	0.3					0.0	0.0	0.0
Total Delay		3.3	1.2	56.8	16.9					49.3	49.4	55.5
LOS		A	A	E	B					D	D	E
Approach Delay		2.5			20.5						52.9	
Approach LOS		A			C						D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 44 (34%), Referenced to phase 2:EBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 18.1		Intersection LOS: B	
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 39: Humelsine Parkway WB On-Ramp/Humelsine Parkway EB Off-Ramp & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	710	405	150	1515	0	0	0	0	165	5	220
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
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3539	1583	3433	3539					1681	1690	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3539	1583	3433	3539					1681	1690	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)	0	772	440	163	1647	0	0	0	0	179	5	239
RTOR Reduction (vph)	0	0	161	0	0	0	0	0	0	0	0	49
Lane Group Flow (vph)	0	772	279	163	1647	0	0	0	0	91	93	190
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		82.4	82.4	11.5	98.9					21.1	21.1	21.1
Effective Green, g (s)		82.4	82.4	11.5	98.9					21.1	21.1	21.1
Actuated g/C Ratio		0.63	0.63	0.09	0.76					0.16	0.16	0.16
Clearance Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	5.0
Vehicle Extension (s)		5.0	5.0	3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2243	1003	303	2692					272	274	256
v/s Ratio Prot		0.22		0.05	c0.47							
v/s Ratio Perm			0.18							0.05	0.06	c0.12
v/c Ratio		0.34	0.28	0.54	0.61					0.33	0.34	0.74
Uniform Delay, d1		11.1	10.6	56.7	7.0					48.2	48.3	51.8
Progression Factor		0.23	0.31	0.91	1.94					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.6	1.5	0.5					0.7	0.7	10.9
Delay (s)		2.9	3.9	53.2	14.0					49.0	49.0	62.8
Level of Service		A	A	D	B					D	D	E
Approach Delay (s)		3.3			17.5			0.0			56.8	
Approach LOS		A			B			A			E	

Intersection Summary					
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.66				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)		15.0	
Intersection Capacity Utilization	63.8%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Intersection C

Williamsburg West Drive/Lane Place and Longhill Road

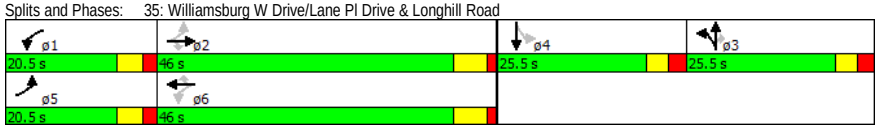
Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	759	14	46	422	12	34	2	237	41	2	17
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			0.850			0.850			0.850		0.957	
Flt Protected	0.950			0.950				0.956			0.971	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1781	1583	0	1731	0
Flt Permitted	0.405			0.084				0.956			0.160	
Satd. Flow (perm)	754	1863	1583	156	1863	1583	0	1781	1583	0	285	0
Satd. Flow (RTOR)			125			125			293		17	
Adj. Flow (vph)	8	926	16	72	464	24	48	4	293	68	8	36
Lane Group Flow (vph)	8	926	16	72	464	24	0	52	293	0	112	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Total Split (s)	20.5	46.0	46.0	20.5	46.0	46.0	25.5	25.5	25.5	25.5	25.5	
Total Lost Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Act Effct Green (s)	44.7	40.2	40.2	50.0	47.9	47.9		9.4	9.4		20.1	
Actuated g/C Ratio	0.46	0.42	0.42	0.52	0.50	0.50		0.10	0.10		0.21	
v/c Ratio	0.02	1.19	0.02	0.38	0.50	0.03		0.30	0.70		1.56	
Control Delay	12.5	128.0	0.1	17.8	20.0	0.1		46.0	14.7		330.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	12.5	128.0	0.1	17.8	20.0	0.1		46.0	14.7		330.6	
LOS	B	F	A	B	B	A		D	B		F	
Approach Delay		124.9			18.8			19.5			330.6	
Approach LOS		F			B			B			F	

Intersection Summary			
Cycle Length: 117.5			
Actuated Cycle Length: 96.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.56			
Intersection Signal Delay: 87.9		Intersection LOS: F	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 35: Williamsburg W Drive/Lane Pl Drive & Longhill Road



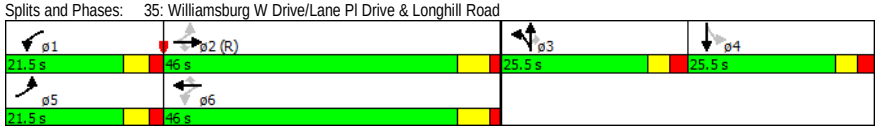
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	759	14	46	422	12	34	2	237	41	2	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Lane Util. Factor	1.00	1.00	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	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1781	1583		1729	
Flt Permitted	0.41	1.00	1.00	0.08	1.00	1.00		0.96	1.00		0.16	
Satd. Flow (perm)	754	1863	1583	156	1863	1583		1781	1583		285	
Peak-hour factor, PHF	0.50	0.82	0.88	0.64	0.91	0.50	0.71	0.50	0.81	0.60	0.25	0.47
Adj. Flow (vph)	8	926	16	72	464	24	48	4	293	68	8	36
RTOR Reduction (vph)	0	0	9	0	0	13	0	0	266	0	14	0
Lane Group Flow (vph)	8	926	7	72	464	11	0	52	27	0	98	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Actuated Green, G (s)	44.5	43.5	43.5	53.3	47.9	47.9		9.4	9.4		20.1	
Effective Green, g (s)	44.5	43.5	43.5	53.3	47.9	47.9		9.4	9.4		20.1	
Actuated g/C Ratio	0.44	0.43	0.43	0.53	0.47	0.47		0.09	0.09		0.20	
Clearance Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	342	803	682	168	884	751		165	147		56	
v/s Ratio Prot	0.00	c0.50		c0.02	c0.25			c0.03				
v/s Ratio Perm	0.01		0.00	0.20		0.01			0.02		c0.35	
v/c Ratio	0.02	1.15	0.01	0.43	0.52	0.02		0.32	0.19		1.76	
Uniform Delay, d1	16.2	28.7	16.4	21.6	18.5	14.0		42.7	42.2		40.4	
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	83.0	0.0	0.6	1.1	0.0		1.1	0.6		403.6	
Delay (s)	16.2	111.7	16.4	22.3	19.6	14.0		43.8	42.8		444.0	
Level of Service	B	F	B	C	B	B		D	D		F	
Approach Delay (s)		109.2			19.7			43.0			444.0	
Approach LOS		F			B			D			F	

Intersection Summary					
HCM 2000 Control Delay	91.2	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.16				
Actuated Cycle Length (s)	100.9	Sum of lost time (s)	22.5		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	690	37	201	1015	50	184	25	71	26	0	12
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			0.850			0.850			0.850		0.958	
Flt Protected	0.950			0.950				0.958			0.967	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1785	1583	0	1726	0
Flt Permitted	0.100			0.100				0.958			0.724	
Satd. Flow (perm)	186	1863	1583	186	1863	1583	0	1785	1583	0	1292	0
Satd. Flow (RTOR)			124			124			129		129	
Adj. Flow (vph)	18	711	38	207	1046	52	190	26	73	27	0	12
Lane Group Flow (vph)	18	711	38	207	1046	52	0	216	73	0	39	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Total Split (s)	21.5	46.0	46.0	21.5	46.0	46.0	25.5	25.5	25.5	25.5	25.5	
Total Lost Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Act Effct Green (s)	56.5	40.0	40.0	56.5	40.0	40.0		20.0	20.0		20.0	
Actuated g/C Ratio	0.48	0.34	0.34	0.48	0.34	0.34		0.17	0.17		0.17	
v/c Ratio	0.06	1.13	0.06	0.69	1.67	0.08		0.72	0.20		0.12	
Control Delay	14.2	115.1	0.2	37.6	335.1	0.3		61.1	1.6		0.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	14.2	115.1	0.2	37.6	335.1	0.3		61.1	1.6		0.8	
LOS	B	F	A	D	F	A		E	A		A	
Approach Delay		107.0			274.5			46.0			0.8	
Approach LOS		F			F			D			A	

Intersection Summary			
Cycle Length: 118.5			
Actuated Cycle Length: 118.5			
Offset: 21.5 (18%), Referenced to phase 2:EBTL, Start of Green			
Control Type: Pretimed			
Maximum v/c Ratio: 1.67			
Intersection Signal Delay: 189.0		Intersection LOS: F	
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 35: Williamsburg W Drive/Lane Pl Drive & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	690	37	201	1015	50	184	25	71	26	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Lane Util. Factor	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	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1784	1583		1726	
Flt Permitted	0.10	1.00	1.00	0.10	1.00	1.00		0.96	1.00		0.72	
Satd. Flow (perm)	186	1863	1583	186	1863	1583		1784	1583		1292	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	18	711	38	207	1046	52	190	26	73	27	0	12
RTOR Reduction (vph)	0	0	25	0	0	34	0	0	61	0	32	0
Lane Group Flow (vph)	18	711	13	207	1046	18	0	216	12	0	7	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Actuated Green, G (s)	56.0	40.0	40.0	56.0	40.0	40.0		20.0	20.0		20.0	
Effective Green, g (s)	56.0	40.0	40.0	56.0	40.0	40.0		20.0	20.0		20.0	
Actuated g/C Ratio	0.47	0.34	0.34	0.47	0.34	0.34		0.17	0.17		0.17	
Clearance Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Lane Grp Cap (vph)	301	628	534	301	628	534		301	267		218	
v/s Ratio Prot	0.01	0.38		c0.09	c0.56			c0.12				
v/s Ratio Perm	0.02		0.01	0.23		0.01			0.01		c0.01	
v/c Ratio	0.06	1.13	0.02	0.69	1.67	0.03		0.72	0.05		0.03	
Uniform Delay, d1	22.2	39.2	26.2	27.2	39.2	26.3		46.6	41.3		41.1	
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	78.2	0.1	12.1	306.5	0.1		13.7	0.3		0.3	
Delay (s)	22.6	117.4	26.3	39.3	345.8	26.4		60.3	41.6		41.4	
Level of Service	C	F	C	D	F	C		E	D		D	
Approach Delay (s)		110.7			284.4			55.6			41.4	
Approach LOS		F			F			E			D	

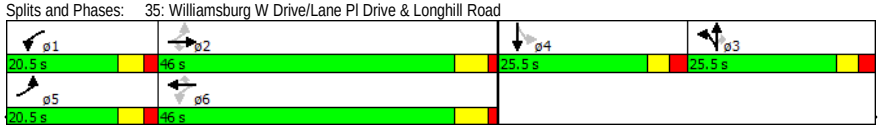
Intersection Summary					
HCM 2000 Control Delay		197.4	HCM 2000 Level of Service		F
HCM 2000 Volume to Capacity ratio		0.96			
Actuated Cycle Length (s)		118.5	Sum of lost time (s)		22.5
Intersection Capacity Utilization		86.3%	ICU Level of Service		E
Analysis Period (min)		15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	940	15	65	560	15	35	5	240	45	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		175	220		0	0		185	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			60			25			25		
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			0.850			0.850			0.850		0.962	
Flt Protected	0.950			0.950				0.958			0.969	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1785	1583	0	1736	0
Flt Permitted	0.258			0.084				0.958			0.163	
Satd. Flow (perm)	481	1863	1583	156	1863	1583	0	1785	1583	0	292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			125			267		15	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1028			748			450			530	
Travel Time (s)		15.6			11.3			12.3			14.5	
Adj. Flow (vph)	6	1044	17	72	622	17	39	6	267	50	6	22
Lane Group Flow (vph)	6	1044	17	72	622	17	0	45	267	0	78	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Total Split (s)	20.5	46.0	46.0	20.5	46.0	46.0	25.5	25.5	25.5	25.5	25.5	
Total Lost Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Act Effct Green (s)	44.7	40.2	40.2	50.0	48.0	48.0		9.1	9.1		20.1	
Actuated g/C Ratio	0.46	0.42	0.42	0.52	0.50	0.50		0.09	0.09		0.21	
v/c Ratio	0.02	1.34	0.02	0.38	0.67	0.02		0.27	0.68		1.08	
Control Delay	12.2	188.8	0.1	17.6	24.1	0.1		45.5	14.9		164.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	12.2	188.8	0.1	17.6	24.1	0.1		45.5	14.9		164.8	
LOS	B	F	A	B	C	A		D	B		F	
Approach Delay		184.8			22.8			19.4			164.8	
Approach LOS		F			C			B			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 117.5			
Actuated Cycle Length: 96.2			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.34			
Intersection Signal Delay: 107.1		Intersection LOS: F	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 35: Williamsburg W Drive/Lane Pl Drive & Longhill Road



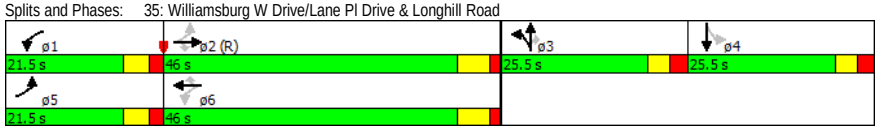
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	940	15	65	560	15	35	5	240	45	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Lane Util. Factor	1.00	1.00	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	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1785	1583		1736	
Flt Permitted	0.26	1.00	1.00	0.08	1.00	1.00		0.96	1.00		0.16	
Satd. Flow (perm)	480	1863	1583	156	1863	1583		1785	1583		293	
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)	6	1044	17	72	622	17	39	6	267	50	6	22
RTOR Reduction (vph)	0	0	10	0	0	9	0	0	243	0	12	0
Lane Group Flow (vph)	6	1044	7	72	622	8	0	45	24	0	66	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Actuated Green, G (s)	44.4	43.5	43.5	53.2	47.9	47.9		9.1	9.1		20.1	
Effective Green, g (s)	44.4	43.5	43.5	53.2	47.9	47.9		9.1	9.1		20.1	
Actuated g/C Ratio	0.44	0.43	0.43	0.53	0.48	0.48		0.09	0.09		0.20	
Clearance Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	223	806	685	167	887	754		161	143		58	
v/s Ratio Prot	0.00	c0.56		c0.02	c0.33			c0.03				
v/s Ratio Perm	0.01		0.00	0.21		0.01			0.02		c0.23	
v/c Ratio	0.03	1.30	0.01	0.43	0.70	0.01		0.28	0.17		1.14	
Uniform Delay, d1	17.2	28.5	16.2	21.6	20.7	13.8		42.6	42.2		40.2	
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	142.0	0.0	0.7	3.2	0.0		1.0	0.6		160.9	
Delay (s)	17.2	170.5	16.3	22.2	23.8	13.8		43.6	42.8		201.1	
Level of Service	B	F	B	C	C	B		D	D		F	
Approach Delay (s)		167.2			23.4			42.9			201.1	
Approach LOS		F			C			D			F	

Intersection Summary					
HCM 2000 Control Delay	103.4	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	22.5		
Intersection Capacity Utilization	84.3%	ICU Level of Service	E		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	960	40	230	1455	50	185	25	125	30	0	15
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			0.850			0.850			0.850		0.954	
Flt Protected	0.950			0.950				0.958			0.968	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1785	1583	0	1720	0
Flt Permitted	0.100			0.100				0.958			0.709	
Satd. Flow (perm)	186	1863	1583	186	1863	1583	0	1785	1583	0	1260	0
Satd. Flow (RTOR)			124			124			139		129	
Adj. Flow (vph)	22	1067	44	256	1617	56	206	28	139	33	0	17
Lane Group Flow (vph)	22	1067	44	256	1617	56	0	234	139	0	50	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Total Split (s)	21.5	46.0	46.0	21.5	46.0	46.0	25.5	25.5	25.5	25.5	25.5	
Total Lost Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Act Effct Green (s)	56.5	40.0	40.0	56.5	40.0	40.0		20.0	20.0		20.0	
Actuated g/C Ratio	0.48	0.34	0.34	0.48	0.34	0.34		0.17	0.17		0.17	
v/c Ratio	0.07	1.70	0.07	0.85	2.57	0.09		0.78	0.36		0.16	
Control Delay	14.4	349.5	0.2	54.7	733.5	0.3		65.6	9.9		1.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	14.4	349.5	0.2	54.7	733.5	0.3		65.6	9.9		1.0	
LOS	B	F	A	D	F	A		E	A		A	
Approach Delay		329.4			622.1			44.9			1.0	
Approach LOS		F			F			D			A	

Intersection Summary			
Cycle Length: 118.5			
Actuated Cycle Length: 118.5			
Offset: 21.5 (18%), Referenced to phase 2:EBTL, Start of Green			
Control Type: Pretimed			
Maximum v/c Ratio: 2.57			
Intersection Signal Delay: 456.3		Intersection LOS: F	
Intersection Capacity Utilization 109.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 35: Williamsburg W Drive/Lane Pl Drive & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	960	40	230	1455	50	185	25	125	30	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Lane Util. Factor	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	0.85		0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.97	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1784	1583		1720	
Flt Permitted	0.10	1.00	1.00	0.10	1.00	1.00		0.96	1.00		0.71	
Satd. Flow (perm)	186	1863	1583	186	1863	1583		1784	1583		1261	
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)	22	1067	44	256	1617	56	206	28	139	33	0	17
RTOR Reduction (vph)	0	0	29	0	0	37	0	0	116	0	42	0
Lane Group Flow (vph)	22	1067	15	256	1617	19	0	234	23	0	8	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6			3	4		
Actuated Green, G (s)	56.0	40.0	40.0	56.0	40.0	40.0		20.0	20.0		20.0	
Effective Green, g (s)	56.0	40.0	40.0	56.0	40.0	40.0		20.0	20.0		20.0	
Actuated g/C Ratio	0.47	0.34	0.34	0.47	0.34	0.34		0.17	0.17		0.17	
Clearance Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5	5.5		5.5	
Lane Grp Cap (vph)	301	628	534	301	628	534		301	267		212	
v/s Ratio Prot	0.01	0.57		c0.11	c0.87			c0.13				
v/s Ratio Perm	0.02		0.01	0.29		0.01			0.01		c0.01	
v/c Ratio	0.07	1.70	0.03	0.85	2.57	0.04		0.78	0.09		0.04	
Uniform Delay, d1	22.2	39.2	26.2	32.3	39.2	26.3		47.1	41.6		41.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.5	321.4	0.1	24.8	713.3	0.1		17.7	0.6		0.4	
Delay (s)	22.7	360.6	26.3	57.2	752.6	26.4		64.9	42.2		41.6	
Level of Service	C	F	C	E	F	C		E	D		D	
Approach Delay (s)		341.1			639.2			56.4			41.6	
Approach LOS		F			F			E			D	

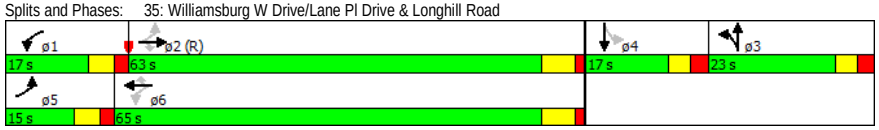
Intersection Summary					
HCM 2000 Control Delay	471.3	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.38				
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	22.5		
Intersection Capacity Utilization	109.9%	ICU Level of Service	H		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	940	15	65	560	15	35	5	240	45	5	20
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850			0.850		0.871			0.957	
Flt Protected	0.950			0.950				0.994			0.969	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	3064	0	0	3282	0
Flt Permitted	0.421			0.224				0.994			0.842	
Satd. Flow (perm)	784	3539	1583	417	3539	1583	0	3064	0	0	2852	0
Satd. Flow (RTOR)			123			123		261			22	
Adj. Flow (vph)	5	1022	16	71	609	16	38	5	261	49	5	22
Lane Group Flow (vph)	5	1022	16	71	609	16	0	304	0	0	76	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA		Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6				4		
Total Split (s)	15.0	63.0	63.0	17.0	65.0	65.0	23.0	23.0		17.0	17.0	
Total Lost Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5			5.5	
Act Effct Green (s)	83.6	79.1	79.1	88.5	86.4	86.4		8.6			8.4	
Actuated g/C Ratio	0.70	0.66	0.66	0.74	0.72	0.72		0.07			0.07	
v/c Ratio	0.01	0.44	0.01	0.19	0.24	0.01		0.66			0.35	
Control Delay	6.2	12.3	0.0	4.7	3.6	0.0		17.5			42.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	6.2	12.3	0.0	4.7	3.6	0.0		17.5			42.6	
LOS	A	B	A	A	A	A		B			D	
Approach Delay		12.1			3.7			17.5			42.6	
Approach LOS		B			A			B			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 35: Williamsburg W Drive/Lane Pl Drive & Longhill Road



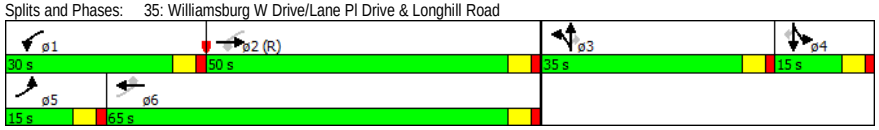
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	940	15	65	560	15	35	5	240	45	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5			5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		0.95			0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.87			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.97	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		3064			3280	
Flt Permitted	0.42	1.00	1.00	0.22	1.00	1.00		0.99			0.84	
Satd. Flow (perm)	785	3539	1583	417	3539	1583		3064			2851	
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)	5	1022	16	71	609	16	38	5	261	49	5	22
RTOR Reduction (vph)	0	0	6	0	0	5	0	242	0	0	21	0
Lane Group Flow (vph)	5	1022	10	71	609	11	0	62	0	0	55	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA		Perm	NA	
Protected Phases	5	2		1	6		3	3			4	
Permitted Phases	2		2	6		6				4		
Actuated Green, G (s)	77.9	76.9	76.9	85.9	80.9	80.9		8.6			7.0	
Effective Green, g (s)	77.9	76.9	76.9	85.9	80.9	80.9		8.6			7.0	
Actuated g/C Ratio	0.65	0.64	0.64	0.72	0.67	0.67		0.07			0.06	
Clearance Time (s)	5.5	6.0	6.0	5.5	6.0	6.0		5.5			5.5	
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0		3.0			3.0	
Lane Grp Cap (vph)	517	2267	1014	354	2385	1067		219			166	
v/s Ratio Prot	0.00	c0.29		c0.01	c0.17			c0.02				
v/s Ratio Perm	0.01		0.01	0.14		0.01					c0.02	
v/c Ratio	0.01	0.45	0.01	0.20	0.26	0.01		0.28			0.33	
Uniform Delay, d1	7.4	10.9	7.8	6.3	7.7	6.4		52.8			54.3	
Progression Factor	1.00	1.00	1.00	0.66	0.48	1.00		1.00			1.00	
Incremental Delay, d2	0.0	0.7	0.0	0.1	0.1	0.0		0.7			1.2	
Delay (s)	7.4	11.5	7.8	4.3	3.8	6.4		53.5			55.4	
Level of Service	A	B	A	A	A	A		D			E	
Approach Delay (s)		11.5			3.9			53.5			55.4	
Approach LOS		B			A			D			E	

Intersection Summary					
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.42				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	960	40	230	1455	50	185	25	125	30	0	15
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.958			0.950	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1785	1583	0	1770	1583
Flt Permitted	0.078			0.168				0.958			0.950	
Satd. Flow (perm)	145	3539	1583	313	3539	1583	0	1785	1583	0	1770	1583
Satd. Flow (RTOR)			143			101			143			143
Adj. Flow (vph)	22	1043	43	250	1582	54	201	27	136	33	0	16
Lane Group Flow (vph)	22	1043	43	250	1582	54	0	228	136	0	33	16
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	6		2	2		6			3			4
Total Split (s)	15.0	50.0	50.0	30.0	65.0	65.0	35.0	35.0	35.0	15.0	15.0	15.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Act Effct Green (s)	84.1	63.8	63.8	82.1	80.7	80.7		22.1	22.1		8.2	8.2
Actuated g/C Ratio	0.65	0.49	0.49	0.63	0.62	0.62		0.17	0.17		0.06	0.06
v/c Ratio	0.14	0.60	0.05	0.62	0.72	0.05		0.75	0.35		0.30	0.07
Control Delay	12.1	29.0	0.1	27.2	17.5	2.2		66.1	8.4		64.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	12.1	29.0	0.1	27.2	17.5	2.2		66.1	8.4		64.6	0.6
LOS	B	C	A	C	B	A		E	A		E	A
Approach Delay		27.6			18.4			44.5			43.7	
Approach LOS		C			B			D			D	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 23 (18%), Referenced to phase 2:EBWB, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 24.5		Intersection LOS: C	
Intersection Capacity Utilization 75.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 35: Williamsburg W Drive/Lane Pl Drive & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	960	40	230	1455	50	185	25	125	30	0	15
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	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	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1784	1583		1770	1583
Flt Permitted	0.08	1.00	1.00	0.17	1.00	1.00		0.96	1.00		0.95	1.00
Satd. Flow (perm)	145	3539	1583	313	3539	1583		1784	1583		1770	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)	22	1043	43	250	1582	54	201	27	136	33	0	16
RTOR Reduction (vph)	0	0	22	0	0	22	0	0	113	0	0	15
Lane Group Flow (vph)	22	1043	21	250	1582	32	0	228	23	0	33	1
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	6		2	2		6			3			4
Actuated Green, G (s)	81.1	62.9	62.9	81.1	77.8	77.8		22.1	22.1		6.8	6.8
Effective Green, g (s)	81.1	62.9	62.9	81.1	77.8	77.8		22.1	22.1		6.8	6.8
Actuated g/C Ratio	0.62	0.48	0.48	0.62	0.60	0.60		0.17	0.17		0.05	0.05
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	131	1712	765	399	2117	947		303	269		92	82
v/s Ratio Prot	0.00	0.29		c0.09	c0.45			c0.13			c0.02	
v/s Ratio Perm	0.10		0.01	0.30		0.02			0.01			0.00
v/c Ratio	0.17	0.61	0.03	0.63	0.75	0.03		0.75	0.09		0.36	0.01
Uniform Delay, d1	15.9	24.6	17.5	15.2	19.0	10.7		51.3	45.4		59.5	58.4
Progression Factor	1.00	1.00	1.00	1.63	0.76	11.32		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	1.6	0.1	1.8	1.4	0.0		10.1	0.1		2.4	0.0
Delay (s)	16.2	26.2	17.6	26.5	15.8	121.1		61.4	45.6		61.9	58.5
Level of Service	B	C	B	C	B	F		E	D		E	E
Approach Delay (s)		25.6			20.3			55.5			60.8	
Approach LOS		C			C			E			E	

Intersection Summary					
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.73				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0		
Intersection Capacity Utilization	75.1%	ICU Level of Service	D		
Analysis Period (min)	15				
c Critical Lane Group					

Intersection **D**

Williamsburg Plantation and Longhill Road

Intersection LOS Analysis

AM/PM Peak Hour

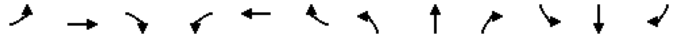
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	820	0	0	480	15	0	0	0	5	0	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850					0.932	
Flt Protected	0.950										0.976	
Satd. Flow (prot)	1770	1863	0	1863	1863	1583	0	1863	0	0	1694	0
Flt Permitted	0.950										0.976	
Satd. Flow (perm)	1770	1863	0	1863	1863	1583	0	1863	0	0	1694	0
Adj. Flow (vph)	8	965	0	0	571	32	0	0	0	12	0	12
Lane Group Flow (vph)	8	965	0	0	571	32	0	0	0	0	24	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 53.2%		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 (veh/h)	5	820	0	0	480	15	0	0	0	5	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.62	0.85	0.25	0.25	0.84	0.47	0.25	0.25	0.25	0.42	0.25	0.50
Hourly flow rate (vph)	8	965	0	0	571	32	0	0	0	12	0	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)		1116			1028							
pX, platoon unblocked	0.83			0.73			0.82	0.82	0.73	0.82	0.82	0.83
vC, conflicting volume	603			965			1564	1584	965	1552	1552	571
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	415			770			1102	1127	770	1088	1088	377
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	92	100	98
cM capacity (veh/h)	945			619			151	166	294	157	175	554

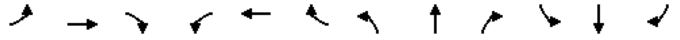
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	8	965	0	571	32	0	24
Volume Left	8	0	0	0	0	0	12
Volume Right	0	0	0	0	32	0	12
cSH	945	1700	1700	1700	1700	1700	246
Volume to Capacity	0.01	0.57	0.00	0.34	0.02	0.00	0.10
Queue Length 95th (ft)	1	0	0	0	0	0	8
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	0.0	21.2
Lane LOS	A					A	C
Approach Delay (s)	0.1		0.0			0.0	21.2
Approach LOS						A	C

Intersection Summary					
Average Delay		0.4			
Intersection Capacity Utilization		53.2%	ICU Level of Service		A
Analysis Period (min)		15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	753	1	0	1042	9	0	0	0	15	0	18
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						0.850					0.925	
Flt Protected	0.950										0.978	
Satd. Flow (prot)	1770	1863	0	1863	1863	1583	0	1863	0	0	1685	0
Flt Permitted	0.950										0.978	
Satd. Flow (perm)	1770	1863	0	1863	1863	1583	0	1863	0	0	1685	0
Adj. Flow (vph)	5	776	1	0	1074	9	0	0	0	15	0	19
Lane Group Flow (vph)	5	777	0	0	1074	9	0	0	0	0	34	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 64.8%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	753	1	0	1042	9	0	0	0	15	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	5	776	1	0	1074	9	0	0	0	15	0	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1116			1028							
pX, platoon unblocked	0.67			0.75			0.79	0.79	0.75	0.79	0.79	0.67
vC, conflicting volume	1084			777			1880	1871	777	1861	1862	1074
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	877			537			1272	1260	537	1247	1249	863
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	87	100	92
cM capacity (veh/h)	515			774			105	134	409	118	136	237

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	5	777	0	1074	9	0	34
Volume Left	5	0	0	0	0	0	15
Volume Right	0	1	0	0	9	0	19
cSH	515	1700	1700	1700	1700	1700	163
Volume to Capacity	0.01	0.46	0.00	0.63	0.01	0.00	0.21
Queue Length 95th (ft)	1	0	0	0	0	0	19
Control Delay (s)	12.1	0.0	0.0	0.0	0.0	0.0	32.9
Lane LOS	B					A	D
Approach Delay (s)	0.1		0.0			0.0	32.9
Approach LOS						A	D

Intersection Summary					
Average Delay	0.6				
Intersection Capacity Utilization	64.8%	ICU Level of Service		C	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	950	0	5	595	15	5	0	5	5	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	115		0	80		260	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	90			100			25			25		
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						0.850		0.932			0.913	
Flt Protected	0.950			0.950				0.976			0.983	
Satd. Flow (prot)	1770	1863	0	1770	1863	1583	0	1694	0	0	1672	0
Flt Permitted	0.950			0.950				0.976			0.983	
Satd. Flow (perm)	1770	1863	0	1770	1863	1583	0	1694	0	0	1672	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1116			1028			526			791	
Travel Time (s)		16.9			15.6			14.3			21.6	
Adj. Flow (vph)	6	1056	0	6	661	17	6	0	6	6	0	11
Lane Group Flow (vph)	6	1056	0	6	661	17	0	12	0	0	17	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.0%		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)	5	950	0	5	595	15	5	0	5	5	0	10
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)	6	1056	0	6	661	17	6	0	6	6	0	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)		1116			1028							
pX, platoon unblocked	0.72			0.72			0.86	0.86	0.72	0.86	0.86	0.72
vC, conflicting volume	678			1056			1750	1756	1056	1744	1739	661
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	364			886			1069	1075	886	1063	1056	341
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			99			97	100	98	97	100	98
cM capacity (veh/h)	865			553			166	186	249	167	191	508

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	1056	6	661	17	11	17
Volume Left	6	0	6	0	0	6	6
Volume Right	0	0	0	0	17	6	11
cSH	865	1700	553	1700	1700	199	303
Volume to Capacity	0.01	0.62	0.01	0.39	0.01	0.06	0.06
Queue Length 95th (ft)	0	0	1	0	0	4	4
Control Delay (s)	9.2	0.0	11.6	0.0	0.0	24.2	17.6
Lane LOS	A		B			C	C
Approach Delay (s)	0.0		0.1			24.2	17.6
Approach LOS						C	C

Intersection Summary					
Average Delay	0.4				
Intersection Capacity Utilization	60.0%	ICU Level of Service		B	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	975	5	15	1590	50	0	0	20	25	0	20
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		0.999				0.850		0.865			0.941	
Flt Protected	0.950			0.950							0.973	
Satd. Flow (prot)	1770	1861	0	1770	1863	1583	0	1611	0	0	1706	0
Flt Permitted	0.950			0.950							0.973	
Satd. Flow (perm)	1770	1861	0	1770	1863	1583	0	1611	0	0	1706	0
Adj. Flow (vph)	6	1083	6	17	1767	56	0	0	22	28	0	22
Lane Group Flow (vph)	6	1089	0	17	1767	56	0	22	0	0	50	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 99.6%		ICU Level of Service F	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	975	5	15	1590	50	0	0	20	25	0	20
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)	6	1083	6	17	1767	56	0	0	22	28	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		1116			1028							
pX, platoon unblocked	0.67			0.70			0.82	0.82	0.70	0.82	0.82	0.67
vC, conflicting volume	1822			1089			2919	2953	1086	2917	2900	1767
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1982			914			2413	2454	910	2410	2390	1899
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 %	97			97			100	100	90	0	100	62
cM capacity (veh/h)	195			523			11	24	233	16	26	58

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	1089	17	1767	56	22	50
Volume Left	6	0	17	0	0	0	28
Volume Right	0	6	0	0	56	22	22
cSH	195	1700	523	1700	1700	233	24
Volume to Capacity	0.03	0.64	0.03	1.04	0.03	0.10	2.12
Queue Length 95th (ft)	2	0	2	0	0	8	157
Control Delay (s)	24.1	0.0	12.1	0.0	0.0	22.0	867.0
Lane LOS	C		B			C	F
Approach Delay (s)	0.1		0.1			22.0	867.0
Approach LOS						C	F

Intersection Summary					
Average Delay		14.7			
Intersection Capacity Utilization		99.6%	ICU Level of Service		F
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	950	0	5	595	15	5	0	5	5	0	10
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996				0.850			0.850
Flt Protected								0.950			0.950	
Satd. Flow (prot)	0	3539	0	0	3525	0	0	1770	1583	0	1770	1583
Flt Permitted								0.950			0.950	
Satd. Flow (perm)	0	3539	0	0	3525	0	0	1770	1583	0	1770	1583
Adj. Flow (vph)	5	1033	0	5	647	16	5	0	5	5	0	11
Lane Group Flow (vph)	0	1038	0	0	668	0	0	5	5	0	5	11
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary												
Control Type: Roundabout												
Intersection Capacity Utilization 43.1%					ICU Level of Service A							
Analysis Period (min) 15												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Volume (veh/h)	5	950	0	5	595	15	5	0	5	5	0	10
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)	5	1033	0	5	647	16	5	0	5	5	0	11
Approach Volume (veh/h)		1038			668			11			16	
Crossing Volume (veh/h)		11			11			1043			658	
High Capacity (veh/h)		1373			1373			601			822	
High v/c (veh/h)		0.76			0.49			0.02			0.02	
Low Capacity (veh/h)		1151			1151			464			656	
Low v/c (veh/h)		0.90			0.58			0.02			0.02	

Intersection Summary												
Maximum v/c High			0.76									
Maximum v/c Low			0.90									
Intersection Capacity Utilization			43.1%		ICU Level of Service				A			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	975	5	15	1590	50	0	0	20	25	0	20
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.995			0.865			0.939	
Flt Protected											0.973	
Satd. Flow (prot)	0	3536	0	0	3522	0	0	1611	0	0	1702	0
Flt Permitted											0.973	
Satd. Flow (perm)	0	3536	0	0	3522	0	0	1611	0	0	1702	0
Adj. Flow (vph)	5	1060	5	16	1728	54	0	0	22	27	0	22
Lane Group Flow (vph)	0	1070	0	0	1798	0	0	22	0	0	49	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary				
Control Type: Roundabout				
Intersection Capacity Utilization 72.1%		ICU Level of Service C		
Analysis Period (min) 15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Volume (veh/h)	5	975	5	15	1590	50	0	0	20	25	0	20
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)	5	1060	5	16	1728	54	0	0	22	27	0	22
Approach Volume (veh/h)		1071			1799			22			49	
Crossing Volume (veh/h)		43			5			1092			1745#	
High Capacity (veh/h)		1339			1379			577			334	
High v/c (veh/h)		0.80			1.30			0.04			0.15	
Low Capacity (veh/h)		1119			1156			444			242	
Low v/c (veh/h)		0.96			1.56			0.05			0.20	

Intersection Summary					
Maximum v/c High		1.30			
Maximum v/c Low		1.56			
Intersection Capacity Utilization		72.1%	ICU Level of Service		C
# Crossing flow exceeds 1200, method is not applicable					

Intersection **E**

Olde Towne Road and Longhill Road

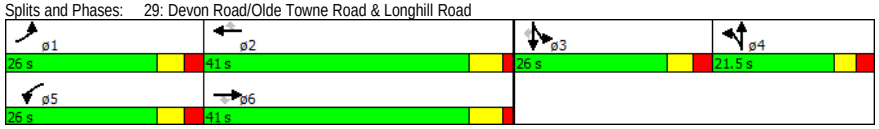
Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	533	4	15	355	107	45	13	18	116	3	116
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			0.850			0.850		0.975				0.850
Flt Protected	0.950			0.950				0.972			0.953	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1765	0	0	1775	1583
Flt Permitted	0.950			0.950				0.972			0.953	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	1765	0	0	1775	1583
Satd. Flow (RTOR)			138			202		8				168
Adj. Flow (vph)	176	613	8	24	670	202	70	28	22	163	4	168
Lane Group Flow (vph)	176	613	8	24	670	202	0	120	0	0	167	168
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Total Split (s)	26.0	41.0	41.0	26.0	41.0	41.0	21.5	21.5		26.0	26.0	26.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Act Effct Green (s)	14.0	50.7	50.7	6.1	35.5	35.5		11.5			14.3	14.3
Actuated g/C Ratio	0.14	0.51	0.51	0.06	0.36	0.36		0.12			0.14	0.14
v/c Ratio	0.71	0.64	0.01	0.22	1.01	0.29		0.57			0.65	0.45
Control Delay	57.5	25.0	0.0	53.0	70.8	5.2		51.3			53.7	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	57.5	25.0	0.0	53.0	70.8	5.2		51.3			53.7	10.5
LOS	E	C	A	D	E	A		D			D	B
Approach Delay		31.9			55.6			51.3			32.0	
Approach LOS		C			E			D			C	

Intersection Summary			
Cycle Length: 114.5			
Actuated Cycle Length: 99.1			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 42.9		Intersection LOS: D	
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 29: Devon Road/Olde Towne Road & Longhill Road



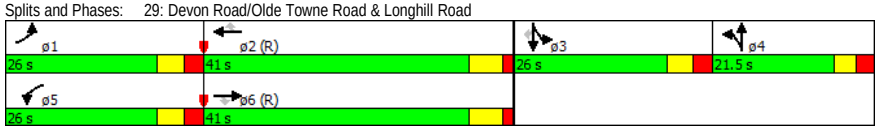
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	533	4	15	355	107	45	13	18	116	3	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Lane Util. Factor	1.00	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		0.98			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1765			1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1765			1776	1583
Peak-hour factor, PHF	0.76	0.87	0.50	0.62	0.53	0.53	0.64	0.46	0.80	0.71	0.75	0.69
Adj. Flow (vph)	176	613	8	24	670	202	70	28	22	163	4	168
RTOR Reduction (vph)	0	0	4	0	0	125	0	7	0	0	0	145
Lane Group Flow (vph)	176	613	4	24	670	77	0	113	0	0	167	23
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Actuated Green, G (s)	14.0	50.7	50.7	2.7	39.4	39.4		11.5			14.3	14.3
Effective Green, g (s)	14.0	50.7	50.7	2.7	39.4	39.4		11.5			14.3	14.3
Actuated g/C Ratio	0.14	0.49	0.49	0.03	0.38	0.38		0.11			0.14	0.14
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0		3.0			3.0	3.0
Lane Grp Cap (vph)	241	919	781	46	714	607		197			247	220
v/s Ratio Prot	c0.10	c0.33		0.01	c0.36			c0.06			c0.09	
v/s Ratio Perm			0.00			0.05						0.01
v/c Ratio	0.73	0.67	0.01	0.52	0.94	0.13		0.57			0.68	0.11
Uniform Delay, d1	42.5	19.6	13.2	49.4	30.5	20.5		43.3			42.0	38.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	9.4	2.4	0.0	4.8	20.5	0.2		4.0			7.1	0.2
Delay (s)	51.9	22.1	13.2	54.2	51.0	20.7		47.3			49.1	38.8
Level of Service	D	C	B	D	D	C		D			D	D
Approach Delay (s)		28.6			44.3			47.3			44.0	
Approach LOS		C			D			D			D	

Intersection Summary					
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D		
HCM 2000 Volume to Capacity ratio	0.80				
Actuated Cycle Length (s)	102.7	Sum of lost time (s)	23.5		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	466	4	39	748	272	5	13	28	261	10	349
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			0.850			0.850		0.917				0.850
Flt Protected	0.950			0.950				0.995			0.954	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1700	0	0	1777	1583
Flt Permitted	0.950			0.950				0.995			0.954	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	1700	0	0	1777	1583
Satd. Flow (RTOR)			138			280		29				324
Adj. Flow (vph)	205	480	4	40	771	280	5	13	29	269	10	360
Lane Group Flow (vph)	205	480	4	40	771	280	0	47	0	0	279	360
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Total Split (s)	26.0	41.0	41.0	26.0	41.0	41.0	21.5	21.5		26.0	26.0	26.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Act Effct Green (s)	20.0	35.0	35.0	20.0	35.0	35.0		16.0			20.0	20.0
Actuated g/C Ratio	0.17	0.31	0.31	0.17	0.31	0.31		0.14			0.17	0.17
v/c Ratio	0.66	0.84	0.01	0.13	1.36	0.41		0.18			0.90	0.66
Control Delay	55.6	52.2	0.0	41.3	204.3	5.5		24.2			78.1	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	55.6	52.2	0.0	41.3	204.3	5.5		24.2			78.1	13.5
LOS	E	D	A	D	F	A		C			E	B
Approach Delay		52.9			147.3			24.2			41.7	
Approach LOS		D			F			C			D	

Intersection Summary			
Cycle Length: 114.5			
Actuated Cycle Length: 114.5			
Offset: 26 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Control Type: Pretimed			
Maximum v/c Ratio: 1.36			
Intersection Signal Delay: 91.2		Intersection LOS: F	
Intersection Capacity Utilization 87.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 29: Devon Road/Olde Towne Road & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	199	466	4	39	748	272	5	13	28	261	10	349
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		5.5			6.0	6.0
Lane Util. Factor	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		0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1699			1777	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.99			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1699			1777	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	205	480	4	40	771	280	5	13	29	269	10	360
RTOR Reduction (vph)	0	0	3	0	0	194	0	25	0	0	0	267
Lane Group Flow (vph)	205	480	1	40	771	86	0	22	0	0	279	93
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Actuated Green, G (s)	20.0	35.0	35.0	20.0	35.0	35.0		16.0			20.0	20.0
Effective Green, g (s)	20.0	35.0	35.0	20.0	35.0	35.0		16.0			20.0	20.0
Actuated g/C Ratio	0.17	0.31	0.31	0.17	0.31	0.31		0.14			0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Lane Grp Cap (vph)	309	569	483	309	569	483		237			310	276
v/s Ratio Prot	c0.12	0.26		0.02	c0.41			c0.01			c0.16	
v/s Ratio Perm			0.00			0.05						0.06
v/c Ratio	0.66	0.84	0.00	0.13	1.36	0.18		0.09			0.90	0.34
Uniform Delay, d1	44.1	37.2	27.6	39.9	39.8	29.2		42.9			46.3	41.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	10.7	14.2	0.0	0.9	171.0	0.8		0.8			31.0	3.3
Delay (s)	54.8	51.4	27.6	40.8	210.8	30.0		43.7			77.2	44.7
Level of Service	D	D	C	D	F	C		D			E	D
Approach Delay (s)		52.3			158.1			43.7			58.9	
Approach LOS		D			F			D			E	

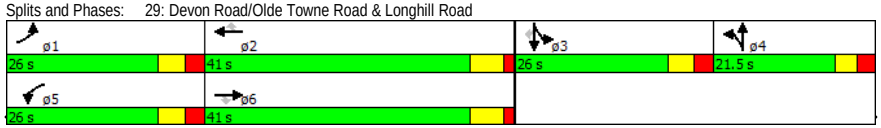
Intersection Summary					
HCM 2000 Control Delay	100.7	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	0.88				
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	23.5		
Intersection Capacity Utilization	87.0%	ICU Level of Service	E		
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	560	5	15	460	135	50	15	25	195	5	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	185		180	70		585	0		0	0		140
Storage Lanes	1		1	1		1	0		0	0		1
Taper Length (ft)	165			220			25			25		
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			0.850			0.850		0.963				0.850
Flt Protected	0.950			0.950				0.973			0.954	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1745	0	0	1777	1583
Flt Permitted	0.950			0.950				0.973			0.954	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	1745	0	0	1777	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			150		14				161
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		1044			1116			645			818	
Travel Time (s)		15.8			16.9			17.6			15.9	
Adj. Flow (vph)	183	622	6	17	511	150	56	17	28	217	6	161
Lane Group Flow (vph)	183	622	6	17	511	150	0	101	0	0	223	161
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Total Split (s)	26.0	41.0	41.0	26.0	41.0	41.0	21.5	21.5		26.0	26.0	26.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Act Effct Green (s)	14.4	49.3	49.3	5.9	32.9	32.9		10.8			16.9	16.9
Actuated g/C Ratio	0.15	0.51	0.51	0.06	0.34	0.34		0.11			0.18	0.18
v/c Ratio	0.69	0.65	0.01	0.16	0.80	0.23		0.49			0.71	0.39
Control Delay	55.4	25.2	0.0	52.5	42.4	5.8		47.1			54.0	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	55.4	25.2	0.0	52.5	42.4	5.8		47.1			54.0	9.6
LOS	E	C	A	D	D	A		D			D	A
Approach Delay		31.8			34.5			47.1			35.4	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 114.5			
Actuated Cycle Length: 95.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 29: Devon Road/Olde Towne Road & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	560	5	15	460	135	50	15	25	195	5	145
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		5.5			6.0	6.0
Lane Util. Factor	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		0.96			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1745			1776	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1745			1776	1583
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)	183	622	6	17	511	150	56	17	28	217	6	161
RTOR Reduction (vph)	0	0	3	0	0	95	0	13	0	0	0	134
Lane Group Flow (vph)	183	622	3	17	511	55	0	88	0	0	223	27
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Actuated Green, G (s)	14.4	49.2	49.2	2.3	37.1	37.1		8.6			16.9	16.9
Effective Green, g (s)	14.4	49.2	49.2	2.3	37.1	37.1		8.6			16.9	16.9
Actuated g/C Ratio	0.14	0.49	0.49	0.02	0.37	0.37		0.09			0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0		3.0			3.0	3.0
Lane Grp Cap (vph)	253	912	774	40	687	584		149			298	266
v/s Ratio Prot	c0.10	c0.33		0.01	c0.27			c0.05			c0.13	
v/s Ratio Perm			0.00			0.03						0.02
v/c Ratio	0.72	0.68	0.00	0.42	0.74	0.09		0.59			0.75	0.10
Uniform Delay, d1	41.1	19.7	13.1	48.4	27.6	20.7		44.3			39.8	35.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	8.4	2.7	0.0	2.6	5.2	0.1		6.2			9.8	0.2
Delay (s)	49.5	22.4	13.1	51.1	32.8	20.9		50.4			49.6	35.5
Level of Service	D	C	B	D	C	C		D			D	D
Approach Delay (s)		28.4			30.6			50.4			43.7	
Approach LOS		C			C			D			D	

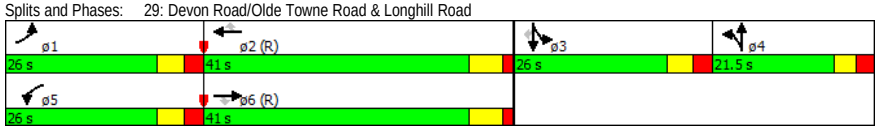
Intersection Summary					
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.73				
Actuated Cycle Length (s)	100.5	Sum of lost time (s)		23.5	
Intersection Capacity Utilization	66.2%	ICU Level of Service		C	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	625	10	195	1080	335	5	15	35	325	5	430
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			0.850			0.850		0.915				0.850
Flt Protected	0.950			0.950				0.995			0.953	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	1696	0	0	1775	1583
Flt Permitted	0.950			0.950				0.995			0.953	
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	1696	0	0	1775	1583
Satd. Flow (RTOR)			138			343		39				327
Adj. Flow (vph)	272	694	11	217	1200	372	6	17	39	361	6	478
Lane Group Flow (vph)	272	694	11	217	1200	372	0	62	0	0	367	478
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Total Split (s)	26.0	41.0	41.0	26.0	41.0	41.0	21.5	21.5		26.0	26.0	26.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Act Effct Green (s)	20.0	35.0	35.0	20.0	35.0	35.0		16.0			20.0	20.0
Actuated g/C Ratio	0.17	0.31	0.31	0.17	0.31	0.31		0.14			0.17	0.17
v/c Ratio	0.88	1.22	0.02	0.70	2.11	0.52		0.23			1.18	0.88
Control Delay	74.5	149.7	0.1	57.8	528.9	7.3		23.1			152.5	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	74.5	149.7	0.1	57.8	528.9	7.3		23.1			152.5	32.7
LOS	E	F	A	E	F	A		C			F	C
Approach Delay		127.1			363.3			23.1			84.7	
Approach LOS		F			F			C			F	

Intersection Summary

Cycle Length: 114.5
Actuated Cycle Length: 114.5
Offset: 26 (23%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 2.11
Intersection Signal Delay: 230.6 — Intersection LOS: F
Intersection Capacity Utilization 110.4% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 29: Devon Road/Olde Towne Road & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	625	10	195	1080	335	5	15	35	325	5	430
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		5.5			6.0	6.0
Lane Util. Factor	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		0.92			1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1696			1775	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		1.00			0.95	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583		1696			1775	1583
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)	272	694	11	217	1200	372	6	17	39	361	6	478
RTOR Reduction (vph)	0	0	8	0	0	238	0	34	0	0	0	270
Lane Group Flow (vph)	272	694	3	217	1200	134	0	28	0	0	367	208
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Actuated Green, G (s)	20.0	35.0	35.0	20.0	35.0	35.0		16.0			20.0	20.0
Effective Green, g (s)	20.0	35.0	35.0	20.0	35.0	35.0		16.0			20.0	20.0
Actuated g/C Ratio	0.17	0.31	0.31	0.17	0.31	0.31		0.14			0.17	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		5.5			6.0	6.0
Lane Grp Cap (vph)	309	569	483	309	569	483		236			310	276
v/s Ratio Prot	c0.15	0.37		0.12	c0.64			c0.02			c0.21	
v/s Ratio Perm			0.00			0.08						0.13
v/c Ratio	0.88	1.22	0.01	0.70	2.11	0.28		0.12			1.18	0.75
Uniform Delay, d1	46.1	39.8	27.7	44.4	39.8	30.2		43.1			47.2	44.9
Progression Factor	0.99	1.00	1.00	1.00	1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	28.1	114.1	0.0	12.6	505.0	1.4		1.0			110.7	17.3
Delay (s)	73.6	153.8	27.7	57.0	544.7	31.6		44.1			157.9	62.2
Level of Service	E	F	C	E	F	C		D			F	E
Approach Delay (s)		130.1			378.9			44.1			103.8	
Approach LOS		F			F			D			F	

Intersection Summary

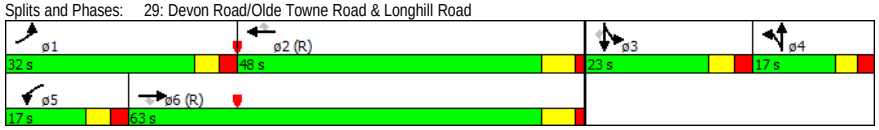
HCM 2000 Control Delay	243.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	114.5	Sum of lost time (s)	23.5
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	560	5	15	460	135	50	15	25	195	5	145
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850		0.906				0.850
Flt Protected	0.950			0.950			0.950			0.950	0.954	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1688	0	1681	1688	1583
Flt Permitted	0.950			0.950			0.950			0.950	0.954	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1688	0	1681	1688	1583
Satd. Flow (RTOR)			132			186		27				186
Adj. Flow (vph)	179	609	5	16	500	147	54	16	27	212	5	158
Lane Group Flow (vph)	179	609	5	16	500	147	54	43	0	108	109	158
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Total Split (s)	32.0	63.0	63.0	17.0	48.0	48.0	17.0	17.0		23.0	23.0	23.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5		6.0	6.0	6.0
Act Effct Green (s)	16.5	78.0	78.0	5.8	60.6	60.6	9.1	9.1		12.8	12.8	12.8
Actuated g/C Ratio	0.14	0.65	0.65	0.05	0.50	0.50	0.08	0.08		0.11	0.11	0.11
v/c Ratio	0.74	0.26	0.00	0.19	0.28	0.16	0.40	0.28		0.60	0.61	0.47
Control Delay	66.9	11.6	0.0	59.3	20.2	1.9	61.3	31.1		64.7	64.8	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.9	11.6	0.0	59.3	20.2	1.9	61.3	31.1		64.7	64.8	8.7
LOS	E	B	A	E	C	A	E	C		E	E	A
Approach Delay		24.0			17.1			47.9			41.1	
Approach LOS		C			B			D			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 29: Devon Road/Olde Towne Road & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	560	5	15	460	135	50	15	25	195	5	145
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	5.5	5.5		6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1687		1681	1689	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1687		1681	1689	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)	179	609	5	16	500	147	54	16	27	212	5	158
RTOR Reduction (vph)	0	0	2	0	0	74	0	25	0	0	0	141
Lane Group Flow (vph)	179	609	3	16	500	73	54	18	0	108	109	17
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		3	3	
Permitted Phases			6			2						3
Actuated Green, G (s)	16.5	73.3	73.3	2.7	59.5	59.5	7.7	7.7		12.8	12.8	12.8
Effective Green, g (s)	16.5	73.3	73.3	2.7	59.5	59.5	7.7	7.7		12.8	12.8	12.8
Actuated g/C Ratio	0.14	0.61	0.61	0.02	0.50	0.50	0.06	0.06		0.11	0.11	0.11
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5		6.0	6.0	6.0
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	243	2161	966	39	1754	784	113	108		179	180	168
v/s Ratio Prot	c0.10	c0.17		0.01	0.14		c0.03	0.01		0.06	c0.06	
v/s Ratio Perm			0.00			0.05						0.01
v/c Ratio	0.74	0.28	0.00	0.41	0.29	0.09	0.48	0.16		0.60	0.61	0.10
Uniform Delay, d1	49.7	11.0	9.1	57.9	17.8	16.0	54.2	53.1		51.2	51.2	48.4
Progression Factor	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	9.6	0.3	0.0	2.5	0.4	0.2	3.2	0.7		5.6	5.7	0.3
Delay (s)	59.2	11.3	9.1	60.4	18.2	16.2	57.4	53.8		56.8	56.8	48.7
Level of Service	E	B	A	E	B	B	E	D		E	E	D
Approach Delay (s)		22.1			18.8			55.8			53.4	
Approach LOS		C			B			E			D	

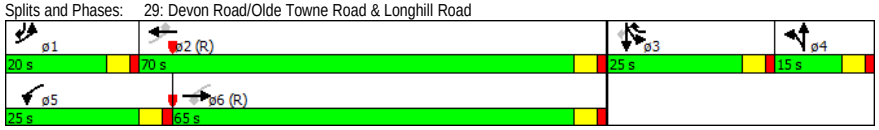
Intersection Summary					
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.42				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		23.5	
Intersection Capacity Utilization	49.1%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	625	10	195	1080	335	5	15	35	325	5	430
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850			0.850		0.894				0.850
Flt Protected	0.950			0.950			0.950			0.950	0.954	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1665	0	1681	1688	1583
Flt Permitted	0.156			0.349			0.950			0.950	0.954	
Satd. Flow (perm)	291	3539	1583	650	3539	1583	1770	1665	0	1681	1688	1583
Satd. Flow (RTOR)			101			364		38				183
Adj. Flow (vph)	266	679	11	212	1174	364	5	16	38	353	5	467
Lane Group Flow (vph)	266	679	11	212	1174	364	5	54	0	180	178	467
Turn Type	D.P+P	NA	Perm	D.P+P	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2	3	4	4		3	3	1
Permitted Phases	2		6	6		2						3
Total Split (s)	20.0	65.0	65.0	25.0	70.0	25.0	15.0	15.0		25.0	25.0	20.0
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
Act Effct Green (s)	86.6	76.5	76.5	86.6	73.2	96.2	7.9	7.9		18.0	18.0	32.4
Actuated g/C Ratio	0.67	0.59	0.59	0.67	0.56	0.74	0.06	0.06		0.14	0.14	0.25
v/c Ratio	0.77	0.33	0.01	0.41	0.59	0.29	0.05	0.40		0.78	0.76	0.88
Control Delay	29.2	16.0	0.0	10.1	22.0	1.2	57.6	33.8		76.0	74.8	40.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	29.2	16.0	0.0	10.1	22.0	1.2	57.6	33.8		76.0	74.8	40.1
LOS	C	B	A	B	C	A	E	C		E	E	D
Approach Delay		19.5			16.2			35.9			55.5	
Approach LOS		B			B			D			E	

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 80 (62%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 26.4 — Intersection LOS: C
Intersection Capacity Utilization 74.8% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 29: Devon Road/Olde Towne Road & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	625	10	195	1080	335	5	15	35	325	5	430
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1666		1681	1688	1583
Flt Permitted	0.16	1.00	1.00	0.35	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	291	3539	1583	650	3539	1583	1770	1666		1681	1688	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)	266	679	11	212	1174	364	5	16	38	353	5	467
RTOR Reduction (vph)	0	0	5	0	0	112	0	36	0	0	0	139
Lane Group Flow (vph)	266	679	6	212	1174	252	5	18	0	180	178	328
Turn Type	D.P+P	NA	Perm	D.P+P	NA	pm+ov	Split	NA		Split	NA	pm+ov
Protected Phases	1	6		5	2	3	4	4		3	3	1
Permitted Phases	2		6	6		2						3
Actuated Green, G (s)	85.5	75.4	75.4	85.5	72.1	90.1	6.5	6.5		18.0	18.0	31.4
Effective Green, g (s)	85.5	75.4	75.4	85.5	72.1	90.1	6.5	6.5		18.0	18.0	31.4
Actuated g/C Ratio	0.66	0.58	0.58	0.66	0.55	0.69	0.05	0.05		0.14	0.14	0.24
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
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	3.0	3.0	3.0		3.0	3.0	2.0
Lane Grp Cap (vph)	343	2052	918	514	1962	1158	88	83		232	233	382
v/s Ratio Prot	0.08	0.19		0.03	0.33	0.03	0.00	c0.01		0.11	0.11	c0.09
v/s Ratio Perm	c0.43		0.00	c0.24		0.13						0.12
v/c Ratio	0.78	0.33	0.01	0.41	0.60	0.22	0.06	0.22		0.78	0.76	0.86
Uniform Delay, d1	15.0	14.2	11.5	9.0	19.3	7.2	58.8	59.3		54.1	54.0	47.2
Progression Factor	0.99	1.02	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.6	0.4	0.0	0.2	1.4	0.1	0.3	1.3		14.9	13.8	16.6
Delay (s)	24.4	14.9	11.5	9.2	20.7	7.3	59.1	60.6		69.0	67.8	63.8
Level of Service	C	B	B	A	C	A	E	E		E	E	E
Approach Delay (s)		17.5			16.5			60.5			65.8	
Approach LOS		B			B			E			E	

Intersection Summary

HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.76				
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0		
Intersection Capacity Utilization	74.8%	ICU Level of Service	D		
Analysis Period (min)	15				

c Critical Lane Group

Intersection F

Buford Road and Longhill Road

Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	622	1	7	507	11	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.926	
Flt Protected			0.950		0.978	
Satd. Flow (prot)	1861	0	1770	1863	1687	0
Flt Permitted			0.950		0.978	
Satd. Flow (perm)	1861	0	1770	1863	1687	0
Adj. Flow (vph)	707	4	12	874	20	24
Lane Group Flow (vph)	711	0	12	874	44	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	622	1	7	507	11	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.25	0.58	0.58	0.55	0.67
Hourly flow rate (vph)	707	4	12	874	20	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			711		1607	709
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			711		1607	709
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		82	95
cM capacity (veh/h)			889		114	434

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	711	12	874	44
Volume Left	0	12	0	20
Volume Right	4	0	0	24
cSH	1700	889	1700	190
Volume to Capacity	0.42	0.01	0.51	0.23
Queue Length 95th (ft)	0	1	0	21
Control Delay (s)	0.0	9.1	0.0	29.5
Lane LOS		A		D
Approach Delay (s)	0.0	0.1		29.5
Approach LOS				D

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		42.8%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	663	15	44	984	9	15
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.902	
Flt Protected			0.950		0.987	
Satd. Flow (prot)	1857	0	1770	1863	1658	0
Flt Permitted			0.950		0.987	
Satd. Flow (perm)	1857	0	1770	1863	1658	0
Adj. Flow (vph)	861	20	52	1106	12	32
Lane Group Flow (vph)	881	0	52	1106	44	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	663	15	44	984	9	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.75	0.85	0.89	0.75	0.47
Hourly flow rate (vph)	861	20	52	1106	12	32
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			881		2080	871
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			881		2080	871
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		78	91
cM capacity (veh/h)			767		55	350

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	881	52	1106	44
Volume Left	0	52	0	12
Volume Right	20	0	0	32
cSH	1700	767	1700	141
Volume to Capacity	0.52	0.07	0.65	0.31
Queue Length 95th (ft)	0	5	0	31
Control Delay (s)	0.0	10.0	0.0	41.5
Lane LOS		B		E
Approach Delay (s)	0.0	0.4		41.5
Approach LOS				E

Intersection Summary				
Average Delay		1.1		
Intersection Capacity Utilization		61.8%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Volume (vph)	710	5	5	15	640	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0		90		0	0
Storage Lanes		0		1		1	0
Taper Length (ft)				80		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					0.865	
Flt Protected				0.950			
Satd. Flow (prot)	1861	0	0	1770	1863	1611	0
Flt Permitted				0.950			
Satd. Flow (perm)	1861	0	0	1770	1863	1611	0
Link Speed (mph)	45				45	25	
Link Distance (ft)	511				965	696	
Travel Time (s)	7.7				14.6	19.0	
Adj. Flow (vph)	789	6	6	17	711	0	39
Lane Group Flow (vph)	795	0	0	23	711	39	0
Sign Control	Free				Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Volume (veh/h)	710	5	5	15	640	0	35
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	789	6	0	17	711	0	39
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			0.00				
vC, conflicting volume			0	794		1536	792
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	794		1536	792
tC, single (s)			0.0	4.1		6.4	6.2
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	98		100	90
cM capacity (veh/h)			0	827		125	389

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	794	17	711	39
Volume Left	0	17	0	0
Volume Right	6	0	0	39
cSH	1700	827	1700	389
Volume to Capacity	0.47	0.02	0.42	0.10
Queue Length 95th (ft)	0	2	0	8
Control Delay (s)	0.0	9.4	0.0	15.3
Lane LOS		A		C
Approach Delay (s)	0.0	0.2		15.3
Approach LOS				C

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		47.7%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	835	15	175	1280	10	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.903	
Flt Protected			0.950		0.986	
Satd. Flow (prot)	1859	0	1770	1863	1659	0
Flt Permitted			0.950		0.986	
Satd. Flow (perm)	1859	0	1770	1863	1659	0
Adj. Flow (vph)	928	17	194	1422	11	28
Lane Group Flow (vph)	945	0	194	1422	39	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	835	15	175	1280	10	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	928	17	194	1422	11	28
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			944		2747	936
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			944		2747	936
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			73		31	91
cM capacity (veh/h)			726		16	321

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	944	194	1422	39
Volume Left	0	194	0	11
Volume Right	17	0	0	28
cSH	1700	726	1700	50
Volume to Capacity	0.56	0.27	0.84	0.78
Queue Length 95th (ft)	0	27	0	80
Control Delay (s)	0.0	11.8	0.0	193.1
Lane LOS		B		F
Approach Delay (s)	0.0	1.4		193.1
Approach LOS				F

Intersection Summary				
Average Delay		3.8		
Intersection Capacity Utilization		77.4%	ICU Level of Service	D
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Volume (vph)	710	5	5	15	640	0	35
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999						0.865
Flt Protected				0.950			
Satd. Flow (prot)	3536	0	0	1770	3539	0	1611
Flt Permitted				0.950			
Satd. Flow (perm)	3536	0	0	1770	3539	0	1611
Adj. Flow (vph)	772	5	5	16	696	0	38
Lane Group Flow (vph)	777	0	0	21	696	0	38
Sign Control	Free				Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Volume (veh/h)	710	5	5	15	640	0	35
Sign Control	Free				Free	Stop	
Grade	0%				0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	772	5	0	16	696	0	38
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			0.00				
vC, conflicting volume			0	777		1155	389
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol			0	777		1155	389
tC, single (s)			0.0	4.1		6.8	6.9
tC, 2 stage (s)							
tF (s)			0.0	2.2		3.5	3.3
p0 queue free %			0	98		100	94
cM capacity (veh/h)			0	835		186	610

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	514	263	16	348	348	38
Volume Left	0	0	16	0	0	0
Volume Right	0	5	0	0	0	38
cSH	1700	1700	835	1700	1700	610
Volume to Capacity	0.30	0.15	0.02	0.20	0.20	0.06
Queue Length 95th (ft)	0	0	1	0	0	5
Control Delay (s)	0.0	0.0	9.4	0.0	0.0	11.3
Lane LOS			A			B
Approach Delay (s)	0.0		0.2			11.3
Approach LOS						B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	29.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	835	15	175	1280	0	35
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.865
Flt Protected			0.950			
Satd. Flow (prot)	3539	1583	1770	3539	0	1611
Flt Permitted			0.950			
Satd. Flow (perm)	3539	1583	1770	3539	0	1611
Adj. Flow (vph)	908	16	190	1391	0	38
Lane Group Flow (vph)	908	16	190	1391	0	38
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	835	15	175	1280	0	35
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)	908	16	190	1391	0	38
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			924		1984	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			924		1984	454
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			74		100	93
cM capacity (veh/h)			735		40	553

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	454	454	16	190	696	696	38
Volume Left	0	0	0	190	0	0	0
Volume Right	0	0	16	0	0	0	38
cSH	1700	1700	1700	735	1700	1700	553
Volume to Capacity	0.27	0.27	0.01	0.26	0.41	0.41	0.07
Queue Length 95th (ft)	0	0	0	26	0	0	6
Control Delay (s)	0.0	0.0	0.0	11.6	0.0	0.0	12.0
Lane LOS				B			B
Approach Delay (s)	0.0			1.4			12.0
Approach LOS							B

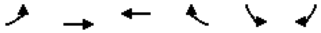
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	46.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection G

Lafayette Boulevard and Longhill Road

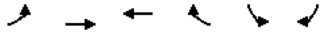
Intersection LOS Analysis

AM/PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	575	509	18	55	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1770	1863	1863	1583	1736	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1770	1863	1863	1583	1736	0
Adj. Flow (vph)	16	676	909	24	64	20
Lane Group Flow (vph)	16	676	909	24	84	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	11	575	509	18	55	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.69	0.85	0.56	0.75	0.86	0.55
Hourly flow rate (vph)	16	676	909	24	64	20
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	933				1617	909
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	933				1617	909
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				43	94
cM capacity (veh/h)	734				111	333

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	16	676	909	24	84
Volume Left	16	0	0	0	64
Volume Right	0	0	0	24	20
cSH	734	1700	1700	1700	132
Volume to Capacity	0.02	0.40	0.53	0.01	0.63
Queue Length 95th (ft)	2	0	0	0	84
Control Delay (s)	10.0	0.0	0.0	0.0	70.5
Lane LOS	B				F
Approach Delay (s)	0.2		0.0		70.5
Approach LOS					F

Intersection Summary				
Average Delay		3.6		
Intersection Capacity Utilization		40.6%	ICU Level of Service	A
Analysis Period (min)		15		

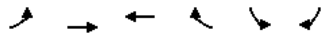
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	614	923	71	55	13
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.977	
Flt Protected	0.950				0.960	
Satd. Flow (prot)	1770	1863	1863	1583	1747	0
Flt Permitted	0.950				0.960	
Satd. Flow (perm)	1770	1863	1863	1583	1747	0
Adj. Flow (vph)	12	690	972	108	96	20
Lane Group Flow (vph)	12	690	972	108	116	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 59.1%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	9	614	923	71	55	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.89	0.95	0.66	0.57	0.65
Hourly flow rate (vph)	12	690	972	108	96	20
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	1079				1685	972
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1079				1685	972
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				5	93
cM capacity (veh/h)	646				101	306

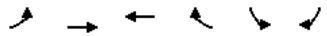
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	12	690	972	108	116
Volume Left	12	0	0	0	96
Volume Right	0	0	0	108	20
cSH	646	1700	1700	1700	115
Volume to Capacity	0.02	0.41	0.57	0.06	1.02
Queue Length 95th (ft)	1	0	0	0	168
Control Delay (s)	10.7	0.0	0.0	0.0	160.1
Lane LOS	B				F
Approach Delay (s)	0.2		0.0		160.1
Approach LOS					F

Intersection Summary				
Average Delay		9.9		
Intersection Capacity Utilization		59.1%	ICU Level of Service	B
Analysis Period (min)		15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	660	620	20	55	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			150	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.971	
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1770	1863	1863	1583	1740	0
Flt Permitted	0.950				0.962	
Satd. Flow (perm)	1770	1863	1863	1583	1740	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		221	511		672	
Travel Time (s)		3.3	7.7		18.3	
Adj. Flow (vph)	17	733	689	22	61	17
Lane Group Flow (vph)	17	733	689	22	78	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	660	620	20	55	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	733	689	22	61	17
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	711				1456	689
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	711				1456	689
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				56	96
cM capacity (veh/h)	888				140	446

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	17	733	689	22	78
Volume Left	17	0	0	0	61
Volume Right	0	0	0	22	17
cSH	888	1700	1700	1700	165
Volume to Capacity	0.02	0.43	0.41	0.01	0.47
Queue Length 95th (ft)	1	0	0	0	56
Control Delay (s)	9.1	0.0	0.0	0.0	45.1
Lane LOS	A				E
Approach Delay (s)	0.2		0.0		45.1
Approach LOS					E

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	45.4%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (vph)	10	10	770	25	1170	95	55	15
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850	0.971	
Flt Protected		0.950			0.999		0.962	
Satd. Flow (prot)	0	1770	1863	0	1861	1583	1740	0
Flt Permitted		0.950			0.999		0.962	
Satd. Flow (perm)	0	1770	1863	0	1861	1583	1740	0
Adj. Flow (vph)	11	11	856	28	1300	106	61	17
Lane Group Flow (vph)	0	22	856	0	1328	106	78	0
Sign Control			Free		Free		Stop	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 92.3%	ICU Level of Service F
Analysis Period (min) 15	

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (veh/h)	10	10	770	25	1170	95	55	15
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	11	856	0	1300	106	61	17
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	0.00			0.00				
vC, conflicting volume	0	1406		0			2178	1300
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0	1406		0			2178	1300
tC, single (s)	0.0	4.1		0.0			6.4	6.2
tC, 2 stage (s)								
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	98		0			0	92
cM capacity (veh/h)	0	486		0			50	197

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	11	856	1300	106	78
Volume Left	11	0	0	0	61
Volume Right	0	0	0	106	17
cSH	486	1700	1700	1700	59
Volume to Capacity	0.02	0.50	0.76	0.06	1.31
Queue Length 95th (ft)	2	0	0	0	167
Control Delay (s)	12.6	0.0	0.0	0.0	339.0
Lane LOS	B				F
Approach Delay (s)	0.2		0.0		339.0
Approach LOS					F

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (vph)	15	15	660	0	620	20	55	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt						0.850		0.850
Flt Protected		0.950					0.950	
Satd. Flow (prot)	0	1770	3539	1863	3539	1583	1770	1583
Flt Permitted		0.950					0.950	
Satd. Flow (perm)	0	1770	3539	1863	3539	1583	1770	1583
Adj. Flow (vph)	16	16	717	0	674	22	60	16
Lane Group Flow (vph)	0	32	717	0	674	22	60	16
Sign Control			Free		Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 34.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (veh/h)	15	15	660	0	620	20	55	15
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	16	717	0	674	22	60	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	0.00			0.00				
vC, conflicting volume	0	696		0			1065	337
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0	696		0			1065	337
tC, single (s)	0.0	4.1		0.0			6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	98		0			72	98
cM capacity (veh/h)	0	896		0			214	659

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2
Volume Total	16	359	359	337	337	22	0	60	16
Volume Left	16	0	0	0	0	0	0	60	0
Volume Right	0	0	0	0	0	22	0	0	16
cSH	896	1700	1700	1700	1700	1700	1700	214	659
Volume to Capacity	0.02	0.21	0.21	0.20	0.20	0.01	0.00	0.28	0.02
Queue Length 95th (ft)	1	0	0	0	0	0	0	28	2
Control Delay (s)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	28.3	10.6
Lane LOS	A							D	B
Approach Delay (s)	0.2			0.0				24.5	
Approach LOS								C	

Intersection Summary				
Average Delay		1.3		
Intersection Capacity Utilization		34.9%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (vph)	10	10	770	25	1160	95	55	15
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt						0.850		0.850
Flt Protected		0.950		0.950			0.950	
Satd. Flow (prot)	0	1770	3539	1770	3539	1583	1770	1583
Flt Permitted		0.950		0.950			0.950	
Satd. Flow (perm)	0	1770	3539	1770	3539	1583	1770	1583
Adj. Flow (vph)	11	11	837	27	1261	103	60	16
Lane Group Flow (vph)	0	22	837	27	1261	103	60	16
Sign Control			Free		Free		Stop	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 42.1%	ICU Level of Service A
Analysis Period (min) 15	

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Volume (veh/h)	10	10	770	25	1160	95	55	15
Sign Control			Free		Free		Stop	
Grade			0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	837	0	1261	103	60	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	0.00			0.00				
vC, conflicting volume	0	1364		0			1701	630
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0	1364		0			1701	630
tC, single (s)	0.0	4.1		0.0			6.8	6.9
tC, 2 stage (s)								
tF (s)	0.0	2.2		0.0			3.5	3.3
p0 queue free %	0	98		0			26	96
cM capacity (veh/h)	0	500		0			81	424

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1	SB 2
Volume Total	11	418	418	630	630	103	0	60	16
Volume Left	11	0	0	0	0	0	0	60	0
Volume Right	0	0	0	0	0	103	0	0	16
cSH	500	1700	1700	1700	1700	1700	1700	81	424
Volume to Capacity	0.02	0.25	0.25	0.37	0.37	0.06	0.00	0.74	0.04
Queue Length 95th (ft)	2	0	0	0	0	0	0	90	3
Control Delay (s)	12.4	0.0	0.0	0.0	0.0	0.0	0.0	125.4	13.8
Lane LOS	B							F	B
Approach Delay (s)	0.2			0.0				101.5	
Approach LOS								F	

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	42.1%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection H

Sheffield Road and Longhill Road

Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	575	5	7	517	13	26
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.939	
Flt Protected			0.950		0.973	
Satd. Flow (prot)	1859	0	1770	1863	1702	0
Flt Permitted			0.950		0.973	
Satd. Flow (perm)	1859	0	1770	1863	1702	0
Adj. Flow (vph)	661	8	12	940	39	32
Lane Group Flow (vph)	669	0	12	940	71	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	575	5	7	517	13	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.62	0.58	0.55	0.33	0.81
Hourly flow rate (vph)	661	8	12	940	39	32
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			669		1629	665
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			669		1629	665
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		64	93
cM capacity (veh/h)			921		110	460

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	669	12	940	71
Volume Left	0	12	0	39
Volume Right	8	0	0	32
cSH	1700	921	1700	168
Volume to Capacity	0.39	0.01	0.55	0.43
Queue Length 95th (ft)	0	1	0	48
Control Delay (s)	0.0	9.0	0.0	41.5
Lane LOS		A		E
Approach Delay (s)	0.0	0.1		41.5
Approach LOS				E

Intersection Summary				
Average Delay		1.8		
Intersection Capacity Utilization		40.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	573	16	50	901	16	33
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.913	
Flt Protected			0.950		0.982	
Satd. Flow (prot)	1853	0	1770	1863	1670	0
Flt Permitted			0.950		0.982	
Satd. Flow (perm)	1853	0	1770	1863	1670	0
Adj. Flow (vph)	699	28	52	1036	20	36
Lane Group Flow (vph)	727	0	52	1036	56	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	573	16	50	901	16	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.57	0.96	0.87	0.80	0.92
Hourly flow rate (vph)	699	28	52	1036	20	36
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			727		1853	713
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			727		1853	713
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		74	92
cM capacity (veh/h)			876		77	432

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	727	52	1036	56
Volume Left	0	52	0	20
Volume Right	28	0	0	36
cSH	1700	876	1700	162
Volume to Capacity	0.43	0.06	0.61	0.34
Queue Length 95th (ft)	0	5	0	36
Control Delay (s)	0.0	9.4	0.0	38.4
Lane LOS		A		E
Approach Delay (s)	0.0	0.4		38.4
Approach LOS				E

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	645	5	0	635	15	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			50		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.911	
Flt Protected					0.983	
Satd. Flow (prot)	1861	0	1863	1863	1668	0
Flt Permitted					0.983	
Satd. Flow (perm)	1861	0	1863	1863	1668	0
Link Speed (mph)	45			45	25	
Link Distance (ft)	523			221	637	
Travel Time (s)	7.9			3.3	17.4	
Adj. Flow (vph)	717	6	0	706	17	33
Lane Group Flow (vph)	723	0	0	706	50	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	645	5	0	635	15	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	717	6	0	706	17	33
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			722		1425	719
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			722		1425	719
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		89	92
cM capacity (veh/h)			880		149	428

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	722	0	706	50
Volume Left	0	0	0	17
Volume Right	6	0	0	33
cSH	1700	1700	1700	264
Volume to Capacity	0.42	0.00	0.42	0.19
Queue Length 95th (ft)	0	0	0	17
Control Delay (s)	0.0	0.0	0.0	21.8
Lane LOS				C
Approach Delay (s)	0.0	0.0		21.8
Approach LOS				C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	745	20	0	1195	0	45
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.865	
Flt Protected						
Satd. Flow (prot)	1857	0	1863	1863	1611	0
Flt Permitted						
Satd. Flow (perm)	1857	0	1863	1863	1611	0
Adj. Flow (vph)	828	22	0	1328	0	50
Lane Group Flow (vph)	850	0	0	1328	50	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	745	20	0	1195	0	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	828	22	0	1328	0	50
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			850		2167	839
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			850		2167	839
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	86
cM capacity (veh/h)			788		52	366

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	850	0	1328	50
Volume Left	0	0	0	0
Volume Right	22	0	0	50
cSH	1700	1700	1700	366
Volume to Capacity	0.50	0.00	0.78	0.14
Queue Length 95th (ft)	0	0	0	12
Control Delay (s)	0.0	0.0	0.0	16.4
Lane LOS				C
Approach Delay (s)	0.0	0.0		16.4
Approach LOS				C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		72.9%	ICU Level of Service	C
Analysis Period (min)		15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	645	5	0	650	0	45
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.865
Flt Protected						
Satd. Flow (prot)	3536	0	0	3539	0	1611
Flt Permitted						
Satd. Flow (perm)	3536	0	0	3539	0	1611
Adj. Flow (vph)	701	5	0	707	0	49
Lane Group Flow (vph)	706	0	0	707	0	49
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	645	5	0	650	0	45
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)	701	5	0	707	0	49
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			707		1057	353
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			707		1057	353
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	92
cM capacity (veh/h)			888		220	643

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	467	239	353	353	49
Volume Left	0	0	0	0	0
Volume Right	0	5	0	0	49
cSH	1700	1700	1700	1700	643
Volume to Capacity	0.27	0.14	0.21	0.21	0.08
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	11.1
Lane LOS					B
Approach Delay (s)	0.0		0.0		11.1
Approach LOS					B

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	28.0%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	745	20	0	1185	0	45
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.996					0.865
Flt Protected						
Satd. Flow (prot)	3525	0	0	3539	0	1611
Flt Permitted						
Satd. Flow (perm)	3525	0	0	3539	0	1611
Adj. Flow (vph)	810	22	0	1288	0	49
Lane Group Flow (vph)	832	0	0	1288	0	49
Sign Control	Free			Free	Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	745	20	0	1185	0	45
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)	810	22	0	1288	0	49
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			832		1465	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			832		1465	416
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	92
cM capacity (veh/h)			797		119	586

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	540	292	644	644	49
Volume Left	0	0	0	0	0
Volume Right	0	22	0	0	49
cSH	1700	1700	1700	1700	586
Volume to Capacity	0.32	0.17	0.38	0.38	0.08
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	11.7
Lane LOS					B
Approach Delay (s)	0.0		0.0		11.7
Approach LOS					B

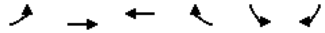
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection I

Seasons Trace and Longhill Road

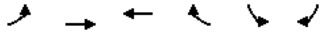
Intersection LOS Analysis

AM/PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	456	494	19	115	57
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.952	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1770	1863	1676	1583	1718	0
Flt Permitted	0.950				0.969	
Satd. Flow (perm)	1770	1863	1676	1583	1718	0
Adj. Flow (vph)	20	549	915	24	144	80
Lane Group Flow (vph)	20	549	915	24	224	0
Sign Control		Free	Free		Stop	

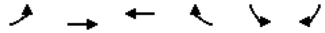
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	456	494	19	115	57
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.83	0.54	0.79	0.80	0.71
Hourly flow rate (vph)	20	549	915	24	144	80
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	939				1504	915
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	939				1504	915
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				0	76
cM capacity (veh/h)	730				130	331

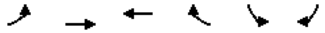
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	20	549	915	24	224
Volume Left	20	0	0	0	144
Volume Right	0	0	0	24	80
cSH	730	1700	1700	1700	166
Volume to Capacity	0.03	0.32	0.54	0.01	1.35
Queue Length 95th (ft)	2	0	0	0	337
Control Delay (s)	10.1	0.0	0.0	0.0	244.3
Lane LOS	B				F
Approach Delay (s)	0.4		0.0		244.3
Approach LOS					F

Intersection Summary				
Average Delay		31.7		
Intersection Capacity Utilization		42.5%	ICU Level of Service	A
Analysis Period (min)		15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	507	778	138	70	31
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.956	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1770	1863	1863	1583	1722	0
Flt Permitted	0.950				0.967	
Satd. Flow (perm)	1770	1863	1863	1583	1722	0
Adj. Flow (vph)	44	583	915	164	84	40
Lane Group Flow (vph)	44	583	915	164	124	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 53.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	38	507	778	138	70	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.87	0.85	0.84	0.83	0.78
Hourly flow rate (vph)	44	583	915	164	84	40
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	1080				1586	915
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1080				1586	915
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				24	88
cM capacity (veh/h)	646				111	330

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	44	583	915	164	124
Volume Left	44	0	0	0	84
Volume Right	0	0	0	164	40
cSH	646	1700	1700	1700	141
Volume to Capacity	0.07	0.34	0.54	0.10	0.88
Queue Length 95th (ft)	5	0	0	0	146
Control Delay (s)	11.0	0.0	0.0	0.0	108.1
Lane LOS	B				F
Approach Delay (s)	0.8		0.0		108.1
Approach LOS					F

Intersection Summary				
Average Delay		7.6		
Intersection Capacity Utilization		53.4%	ICU Level of Service	A
Analysis Period (min)		15		

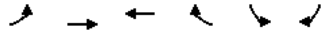
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	440	625	25	210	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	120			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	85				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.970	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1770	1863	1676	1583	1740	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1770	1863	1676	1583	1740	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		396	841		566	
Travel Time (s)		6.0	12.7		15.4	
Adj. Flow (vph)	17	489	694	28	233	67
Lane Group Flow (vph)	17	489	694	28	300	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	440	625	25	210	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	489	694	28	233	67
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	722				1217	694
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	722				1217	694
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				0	85
cM capacity (veh/h)	880				196	443

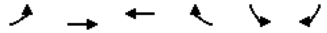
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	17	489	694	28	300
Volume Left	17	0	0	0	233
Volume Right	0	0	0	28	67
cSH	880	1700	1700	1700	224
Volume to Capacity	0.02	0.29	0.41	0.02	1.34
Queue Length 95th (ft)	1	0	0	0	410
Control Delay (s)	9.2	0.0	0.0	0.0	222.7
Lane LOS	A				F
Approach Delay (s)	0.3		0.0		222.7
Approach LOS					F

Intersection Summary				
Average Delay	43.8			
Intersection Capacity Utilization	54.9%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	40	625	1010	185	140	35
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.973	
Flt Protected	0.950				0.962	
Satd. Flow (prot)	1770	1863	1863	1583	1744	0
Flt Permitted	0.950				0.962	
Satd. Flow (perm)	1770	1863	1863	1583	1744	0
Adj. Flow (vph)	44	694	1122	206	156	39
Lane Group Flow (vph)	44	694	1122	206	195	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 69.7%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	40	625	1010	185	140	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	44	694	1122	206	156	39
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	1328				1906	1122
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1328				1906	1122
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				0	84
cM capacity (veh/h)	520				69	250

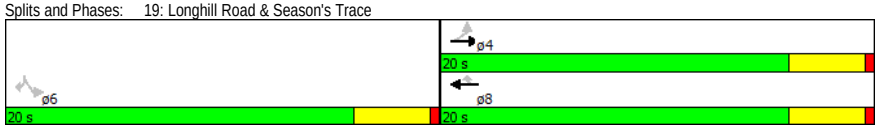
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	44	694	1122	206	194
Volume Left	44	0	0	0	156
Volume Right	0	0	0	206	39
cSH	520	1700	1700	1700	81
Volume to Capacity	0.09	0.41	0.66	0.12	2.41
Queue Length 95th (ft)	7	0	0	0	456
Control Delay (s)	12.6	0.0	0.0	0.0	753.1
Lane LOS	B				F
Approach Delay (s)	0.8		0.0		753.1
Approach LOS					F

Intersection Summary				
Average Delay		65.0		
Intersection Capacity Utilization		69.7%	ICU Level of Service	C
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	440	625	25	210	60
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3362	1583	1770	1583
Flt Permitted	0.332				0.950	
Satd. Flow (perm)	618	3539	3362	1583	1770	1583
Satd. Flow (RTOR)				27		65
Adj. Flow (vph)	16	478	679	27	228	65
Lane Group Flow (vph)	16	478	679	27	228	65
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		4	8			
Permitted Phases	4			8	6	6
Total Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	12.7	12.7	12.7	12.7	16.1	16.1
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.44	0.44
v/c Ratio	0.08	0.39	0.59	0.05	0.29	0.09
Control Delay	8.6	10.0	12.0	4.0	8.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	10.0	12.0	4.0	8.9	3.2
LOS	A	A	B	A	A	A
Approach Delay		9.9	11.7		7.6	
Approach LOS		A	B		A	

Intersection Summary			
Cycle Length: 40			
Actuated Cycle Length: 36.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 35.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Longhill Road & Season's Trace



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	440	625	25	210	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3362	1583	1770	1583
Flt Permitted	0.33	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	619	3539	3362	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	478	679	27	228	65
RTOR Reduction (vph)	0	0	0	18	0	37
Lane Group Flow (vph)	16	478	679	9	228	28
Parking (#/hr)			0			
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		4	8			
Permitted Phases	4			8	6	6
Actuated Green, G (s)	12.7	12.7	12.7	12.7	16.1	16.1
Effective Green, g (s)	12.7	12.7	12.7	12.7	16.1	16.1
Actuated g/C Ratio	0.35	0.35	0.35	0.35	0.44	0.44
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	213	1221	1160	546	774	692
v/s Ratio Prot		0.14	c0.20			
v/s Ratio Perm	0.03			0.01	c0.13	0.02
v/c Ratio	0.08	0.39	0.59	0.02	0.29	0.04
Uniform Delay, d1	8.1	9.1	9.9	7.9	6.7	5.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.8	0.0	1.0	0.1
Delay (s)	8.3	9.3	10.6	7.9	7.7	6.0
Level of Service	A	A	B	A	A	A
Approach Delay (s)		9.3	10.5		7.3	
Approach LOS		A	B		A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	40	625	1010	175	140	35
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3362	1583	1770	1583
Flt Permitted	0.223				0.950	
Satd. Flow (perm)	415	3539	3362	1583	1770	1583
Satd. Flow (RTOR)				190		38
Adj. Flow (vph)	43	679	1098	190	152	38
Lane Group Flow (vph)	43	679	1098	190	152	38
Turn Type	D.P+P	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases	2			2	3	3
Total Split (s)	16.0	76.0	60.0	60.0	24.0	24.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	75.8	77.2	71.9	71.9	13.8	13.8
Actuated g/C Ratio	0.76	0.77	0.72	0.72	0.14	0.14
v/c Ratio	0.11	0.25	0.45	0.16	0.62	0.15
Control Delay	4.0	4.0	7.9	1.4	51.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.0	4.0	7.9	1.4	51.2	12.7
LOS	A	A	A	A	D	B
Approach Delay		4.0	6.9		43.5	
Approach LOS		A	A		D	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 97 (97%), Referenced to phase 2:EBWB and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 9.1 Intersection LOS: A
Intersection Capacity Utilization 48.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 19: Longhill Road & Season's Trace



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	40	625	1010	175	140	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3362	1583	1770	1583
Flt Permitted	0.22	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	415	3539	3362	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	679	1098	190	152	38
RTOR Reduction (vph)	0	0	0	56	0	33
Lane Group Flow (vph)	43	679	1098	134	152	5
Parking (#/hr)			0			
Turn Type	D.P+P	NA	NA	Perm	Prot	Prot
Protected Phases	1	6	2		3	3
Permitted Phases	2			2	3	3
Actuated Green, G (s)	74.2	77.2	70.3	70.3	13.8	13.8
Effective Green, g (s)	74.2	77.2	70.3	70.3	13.8	13.8
Actuated g/C Ratio	0.74	0.77	0.70	0.70	0.14	0.14
Clearance Time (s)	4.0	5.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	360	2732	2363	1112	244	218
v/s Ratio Prot	0.00	c0.19	c0.33		c0.09	0.00
v/s Ratio Perm	0.08			0.08		
v/c Ratio	0.12	0.25	0.46	0.12	0.62	0.02
Uniform Delay, d1	4.0	3.2	6.6	4.8	40.6	37.3
Progression Factor	1.08	1.07	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.7	0.2	4.9	0.0
Delay (s)	4.4	3.6	7.2	5.0	45.5	37.3
Level of Service	A	A	A	A	D	D
Approach Delay (s)		3.7	6.9		43.9	
Approach LOS		A	A		D	

Intersection Summary

HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

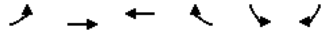
c Critical Lane Group

Intersection J

Lafayette High School Entrance and Longhill Road

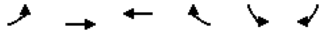
Intersection LOS Analysis

AM/PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	97	360	314	238	95	58
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.922		0.954	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1770	1863	1717	0	1720	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1770	1863	1717	0	1720	0
Adj. Flow (vph)	269	514	498	680	202	104
Lane Group Flow (vph)	269	514	1178	0	306	0
Sign Control		Free	Free		Stop	

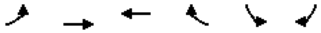
Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	97	360	314	238	95	58
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.36	0.70	0.63	0.35	0.47	0.56
Hourly flow rate (vph)	269	514	498	680	202	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1178				1892	838
vC1, stage 1 conf vol					838	
vC2, stage 2 conf vol					1053	
vCu, unblocked vol	1178				1892	838
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	55				0	72
cM capacity (veh/h)	593				166	366

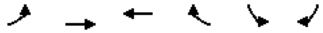
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	269	514	1178	306
Volume Left	269	0	0	202
Volume Right	0	0	680	104
cSH	593	1700	1700	204
Volume to Capacity	0.45	0.30	0.69	1.50
Queue Length 95th (ft)	59	0	0	470
Control Delay (s)	16.0	0.0	0.0	291.5
Lane LOS	C			F
Approach Delay (s)	5.5		0.0	291.5
Approach LOS				F

Intersection Summary				
Average Delay		41.2		
Intersection Capacity Utilization		55.2%	ICU Level of Service	B
Analysis Period (min)		15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	26	487	694	75	66	31
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.983		0.952	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1770	1863	1831	0	1718	0
Flt Permitted	0.950				0.969	
Satd. Flow (perm)	1770	1863	1831	0	1718	0
Adj. Flow (vph)	57	580	816	115	108	60
Lane Group Flow (vph)	57	580	931	0	168	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	487	694	75	66	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.46	0.84	0.85	0.65	0.61	0.52
Hourly flow rate (vph)	57	580	816	115	108	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	932				1567	874
vC1, stage 1 conf vol					874	
vC2, stage 2 conf vol					693	
vCu, unblocked vol	932				1567	874
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	92				66	83
cM capacity (veh/h)	734				317	349

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	57	580	932	168
Volume Left	57	0	0	108
Volume Right	0	0	115	60
cSH	734	1700	1700	328
Volume to Capacity	0.08	0.34	0.55	0.51
Queue Length 95th (ft)	6	0	0	69
Control Delay (s)	10.3	0.0	0.0	27.0
Lane LOS	B			D
Approach Delay (s)	0.9		0.0	27.0
Approach LOS				D

Intersection Summary				
Average Delay		2.9		
Intersection Capacity Utilization		53.3%	ICU Level of Service	A
Analysis Period (min)		15		

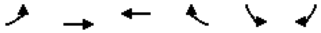
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	100	455	445	240	0	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	100				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.953		0.865	
Flt Protected	0.950					
Satd. Flow (prot)	1770	1863	1775	0	1611	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1775	0	1611	0
Link Speed (mph)		45	45		10	
Link Distance (ft)		517	396		817	
Travel Time (s)		7.8	6.0		55.7	
Adj. Flow (vph)	111	506	494	267	0	67
Lane Group Flow (vph)	111	506	761	0	67	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	100	455	445	240	0	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	111	506	494	267	0	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761				1356	628
vC1, stage 1 conf vol					628	
vC2, stage 2 conf vol					728	
vCu, unblocked vol	761				1356	628
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	87				100	86
cM capacity (veh/h)	851				346	483

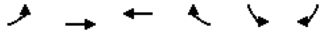
Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	111	506	761	67
Volume Left	111	0	0	0
Volume Right	0	0	267	67
cSH	851	1700	1700	483
Volume to Capacity	0.13	0.30	0.45	0.14
Queue Length 95th (ft)	11	0	0	12
Control Delay (s)	9.9	0.0	0.0	13.6
Lane LOS	A			B
Approach Delay (s)	1.8		0.0	13.6
Approach LOS				B

Intersection Summary				
Average Delay		1.4		
Intersection Capacity Utilization		57.3%	ICU Level of Service	B
Analysis Period (min)		15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	30	665	950	95	0	40
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.988		0.865	
Flt Protected	0.950					
Satd. Flow (prot)	1770	1863	1840	0	1611	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1840	0	1611	0
Adj. Flow (vph)	33	739	1056	106	0	44
Lane Group Flow (vph)	33	739	1162	0	44	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	30	665	950	95	0	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	739	1056	106	0	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1161				1914	1108
vC1, stage 1 conf vol					1108	
vC2, stage 2 conf vol					806	
vCu, unblocked vol	1161				1914	1108
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	94				100	83
cM capacity (veh/h)	602				254	255

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	33	739	1161	44
Volume Left	33	0	0	0
Volume Right	0	0	106	44
cSH	602	1700	1700	255
Volume to Capacity	0.06	0.43	0.68	0.17
Queue Length 95th (ft)	4	0	0	15
Control Delay (s)	11.3	0.0	0.0	22.1
Lane LOS	B			C
Approach Delay (s)	0.5		0.0	22.1
Approach LOS				C

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		65.8%	ICU Level of Service	C
Analysis Period (min)		15		

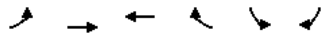
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	100	455	445	240	0	60
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	3539	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	3539	1583	0	1611
Adj. Flow (vph)	109	495	484	261	0	65
Lane Group Flow (vph)	109	495	484	261	0	65
Sign Control		Free	Free		Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 27.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	100	455	445	240	0	60
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)	109	495	484	261	0	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			396			
pX, platoon unblocked	0.97				0.97	0.97
vC, conflicting volume	745				948	242
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	667				878	148
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				100	92
cM capacity (veh/h)	888				244	844

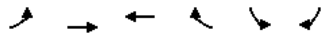
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	109	247	247	242	242	261	65
Volume Left	109	0	0	0	0	0	0
Volume Right	0	0	0	0	0	261	65
cSH	888	1700	1700	1700	1700	1700	844
Volume to Capacity	0.12	0.15	0.15	0.14	0.14	0.15	0.08
Queue Length 95th (ft)	10	0	0	0	0	0	6
Control Delay (s)	9.6	0.0	0.0	0.0	0.0	0.0	9.6
Lane LOS	A						A
Approach Delay (s)	1.7			0.0			9.6
Approach LOS							A

Intersection Summary				
Average Delay		1.2		
Intersection Capacity Utilization		27.1%	ICU Level of Service	A
Analysis Period (min)		15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	30	665	950	95	0	40
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected	0.950					
Satd. Flow (prot)	1770	3539	3539	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	3539	3539	1583	0	1611
Adj. Flow (vph)	33	723	1033	103	0	43
Lane Group Flow (vph)	33	723	1033	103	0	43
Sign Control		Free	Free		Stop	

Intersection Summary	
Control Type: Unsignalized	
Intersection Capacity Utilization 36.3%	ICU Level of Service A
Analysis Period (min) 15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	30	665	950	95	0	40
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)	33	723	1033	103	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			396			
pX, platoon unblocked	0.86				0.86	0.86
vC, conflicting volume	1136				1459	516
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	840				1214	122
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	94
cM capacity (veh/h)	683				143	782

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	33	361	361	516	516	103	43
Volume Left	33	0	0	0	0	0	0
Volume Right	0	0	0	0	0	103	43
cSH	683	1700	1700	1700	1700	1700	782
Volume to Capacity	0.05	0.21	0.21	0.30	0.30	0.06	0.06
Queue Length 95th (ft)	4	0	0	0	0	0	4
Control Delay (s)	10.5	0.0	0.0	0.0	0.0	0.0	9.9
Lane LOS	B						A
Approach Delay (s)	0.5			0.0			9.9
Approach LOS							A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection K

Lafayette High School Bus Loop and Longhill Road

Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	415	0	2	317	4	0	0	2	17	0	8
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					0.994				0.850		0.957	
Flt Protected	0.950			0.950							0.967	
Satd. Flow (prot)	1770	1863	1863	1770	1852	0	1863	0	1583	0	1724	0
Flt Permitted	0.950			0.950							0.967	
Satd. Flow (perm)	1770	1863	1863	1770	1852	0	1863	0	1583	0	1724	0
Adj. Flow (vph)	16	1339	0	5	356	16	0	0	8	68	0	32
Lane Group Flow (vph)	16	1339	0	5	372	0	0	0	8	0	100	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		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)	4	415	0	2	317	4	0	0	2	17	0	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.31	0.25	0.38	0.89	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Hourly flow rate (vph)	16	1339	0	5	356	16	0	0	8	68	0	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	372			1339			1769	1753	1339	1753	1745	364
vC1, stage 1 conf vol							1371	1371		375	375	
vC2, stage 2 conf vol							399	383		1379	1371	
vCu, unblocked vol	372			1339			1769	1753	1339	1753	1745	364
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			100	100	96	57	100	95
cM capacity (veh/h)	1186			515			169	200	187	157	196	681

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	16	1339	0	5	372	0	8	100
Volume Left	16	0	0	5	0	0	0	68
Volume Right	0	0	0	0	16	0	8	32
cSH	1186	1700	1700	515	1700	1700	187	208
Volume to Capacity	0.01	0.79	0.00	0.01	0.22	0.00	0.04	0.48
Queue Length 95th (ft)	1	0	0	1	0	0	3	59
Control Delay (s)	8.1	0.0	0.0	12.1	0.0	0.0	25.1	37.2
Lane LOS	A			B		A	D	E
Approach Delay (s)	0.1			0.2		25.1		37.2
Approach LOS						D		E

Intersection Summary					
Average Delay	2.2				
Intersection Capacity Utilization	38.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	487	1	2	530	0	1	0	0	0	0	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			0.850									
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	1863	1583	1770	1863	0	1770	0	1863	0	1863	0
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1863	1583	1770	1863	0	1770	0	1863	0	1863	0
Adj. Flow (vph)	4	553	4	4	589	0	4	0	0	0	0	0
Lane Group Flow (vph)	4	553	4	4	589	0	4	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 37.9%		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)	1	487	1	2	530	0	1	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.88	0.25	0.50	0.90	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Hourly flow rate (vph)	4	553	4	4	589	0	4	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	589			557			1158	1158	553	1158	1162	589
vC1, stage 1 conf vol							561	561		597	597	
vC2, stage 2 conf vol							597	597		561	565	
vCu, unblocked vol	589			557			1158	1158	553	1158	1162	589
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	986			1013			379	386	532	379	385	508

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	4	553	4	4	589	4	0	0
Volume Left	4	0	0	4	0	4	0	0
Volume Right	0	0	4	0	0	0	0	0
cSH	986	1700	1700	1013	1700	379	1700	1700
Volume to Capacity	0.00	0.33	0.00	0.00	0.35	0.01	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0	1	0	0
Control Delay (s)	8.7	0.0	0.0	8.6	0.0	14.6	0.0	0.0
Lane LOS	A			A		B	A	A
Approach Delay (s)	0.1			0.1		14.6		0.0
Approach LOS						B		A

Intersection Summary					
Average Delay	0.1				
Intersection Capacity Utilization	37.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	530	25	25	470	10	0	0	5	20	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		120	50		0	0		0	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	160			25			25			25		
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			0.850		0.997				0.850		0.955	
Flt Protected	0.950			0.950							0.968	
Satd. Flow (prot)	1770	1863	1583	1770	1857	0	1863	0	1583	0	1722	0
Flt Permitted	0.950			0.950							0.968	
Satd. Flow (perm)	1770	1863	1583	1770	1857	0	1863	0	1583	0	1722	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1389			517			400			302	
Travel Time (s)		21.0			7.8			10.9			8.2	
Adj. Flow (vph)	17	589	28	28	522	11	0	0	6	22	0	11
Lane Group Flow (vph)	17	589	28	28	533	0	0	0	6	0	33	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.6%	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)	15	530	25	25	470	10	0	0	5	20	0	10
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)	17	589	28	28	522	11	0	0	6	22	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	533			617			1211	1211	589	1211	1233	528
vC1, stage 1 conf vol							622	622		583	583	
vC2, stage 2 conf vol							589	589		628	650	
vCu, unblocked vol	533			617			1211	1211	589	1211	1233	528
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			100	100	99	94	100	98
cM capacity (veh/h)	1034			963			348	361	508	345	350	550

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	17	589	28	28	533	0	6	33
Volume Left	17	0	0	28	0	0	0	22
Volume Right	0	0	28	0	11	0	6	11
cSH	1034	1700	1700	963	1700	1700	508	394
Volume to Capacity	0.02	0.35	0.02	0.03	0.31	0.00	0.01	0.08
Queue Length 95th (ft)	1	0	0	2	0	0	1	7
Control Delay (s)	8.5	0.0	0.0	8.8	0.0	0.0	12.2	15.0
Lane LOS	A			A		A	B	B
Approach Delay (s)	0.2			0.4		12.2		15.0
Approach LOS						B		B

Intersection Summary					
Average Delay	0.8				
Intersection Capacity Utilization	44.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	685	5	25	960	5	10	0	5	5	0	5
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			0.850		0.999				0.850		0.932	
Flt Protected	0.950			0.950			0.950				0.976	
Satd. Flow (prot)	1770	1863	1583	1770	1861	0	1770	0	1583	0	1694	0
Flt Permitted	0.950			0.950			0.950				0.976	
Satd. Flow (perm)	1770	1863	1583	1770	1861	0	1770	0	1583	0	1694	0
Adj. Flow (vph)	6	761	6	28	1067	6	11	0	6	6	0	6
Lane Group Flow (vph)	6	761	6	28	1073	0	11	0	6	0	12	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		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)	5	685	5	25	960	5	10	0	5	5	0	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)	6	761	6	28	1067	6	11	0	6	6	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1072			767			1900	1900	761	1903	1903	1069
vC1, stage 1 conf vol							772	772		1125	1125	
vC2, stage 2 conf vol							1128	1128		778	778	
vCu, unblocked vol	1072			767			1900	1900	761	1903	1903	1069
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			94	100	99	97	100	98
cM capacity (veh/h)	650			847			197	224	405	199	223	269

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	6	761	6	28	1072	11	6	11
Volume Left	6	0	0	28	0	11	0	6
Volume Right	0	0	6	0	6	0	6	6
cSH	650	1700	1700	847	1700	197	405	229
Volume to Capacity	0.01	0.45	0.00	0.03	0.63	0.06	0.01	0.05
Queue Length 95th (ft)	1	0	0	3	0	4	1	4
Control Delay (s)	10.6	0.0	0.0	9.4	0.0	24.4	14.0	21.6
Lane LOS	B			A		C	B	C
Approach Delay (s)	0.1			0.2		20.9		21.6
Approach LOS						C		C

Intersection Summary					
Average Delay	0.5				
Intersection Capacity Utilization	62.6%	ICU Level of Service		B	
Analysis Period (min)	15				

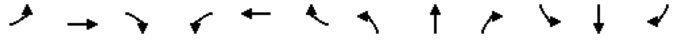
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	530	25	25	470	10	0	0	5	20	0	10
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.850	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1863	1583	1770	1583	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1863	1583	1770	1583	0
Adj. Flow (vph)	16	576	27	27	511	11	0	0	5	22	0	11
Lane Group Flow (vph)	16	576	27	27	511	11	0	0	5	22	11	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 31.3%		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)	15	530	25	25	470	10	0	0	5	20	0	10
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)	16	576	27	27	511	11	0	0	5	22	0	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)					913							
pX, platoon unblocked												
vC, conflicting volume	522			603			929	1185	288	891	1201	255
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	522			603			929	1185	288	891	1201	255
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 %	98			97			100	100	99	90	100	99
cM capacity (veh/h)	1041			970			212	180	709	227	176	744

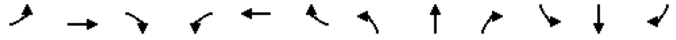
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	16	288	288	27	27	255	255	11	0	5	22	11
Volume Left	16	0	0	0	27	0	0	0	0	0	22	0
Volume Right	0	0	0	27	0	0	0	11	0	5	0	11
cSH	1041	1700	1700	1700	970	1700	1700	1700	1700	709	227	744
Volume to Capacity	0.02	0.17	0.17	0.02	0.03	0.15	0.15	0.01	0.00	0.01	0.10	0.01
Queue Length 95th (ft)	1	0	0	0	2	0	0	0	0	1	8	1
Control Delay (s)	8.5	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	10.1	22.5	9.9
Lane LOS	A				A				A	B	C	A
Approach Delay (s)	0.2				0.4				10.1		18.3	
Approach LOS									B		C	

Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			31.3%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	685	5	25	960	5	10	0	5	5	0	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.850	
Flt Protected	0.950			0.950				0.950		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1770	1583	1770	1583	0
Flt Permitted	0.950			0.950				0.950		0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1770	1583	1770	1583	0
Adj. Flow (vph)	5	745	5	27	1043	5	11	0	5	5	0	5
Lane Group Flow (vph)	5	745	5	27	1043	5	0	11	5	5	5	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.4%		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)	5	685	5	25	960	5	10	0	5	5	0	5
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)	5	745	5	27	1043	5	11	0	5	5	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					913							
pX, platoon unblocked	0.88						0.88	0.88		0.88	0.88	0.88
vC, conflicting volume	1049			750			1337	1859	372	1486	1859	522
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774			750			1103	1698	372	1273	1698	173
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 %	99			97			92	100	99	95	100	99
cM capacity (veh/h)	734			855			140	77	625	105	77	737

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	SB 2
Volume Total	5	372	372	5	27	522	522	5	11	5	5	5
Volume Left	5	0	0	0	27	0	0	0	11	0	5	0
Volume Right	0	0	0	5	0	0	0	5	0	5	0	5
cSH	734	1700	1700	1700	855	1700	1700	1700	140	625	105	737
Volume to Capacity	0.01	0.22	0.22	0.00	0.03	0.31	0.31	0.00	0.08	0.01	0.05	0.01
Queue Length 95th (ft)	1	0	0	0	2	0	0	0	6	1	4	1
Control Delay (s)	9.9	0.0	0.0	0.0	9.3	0.0	0.0	0.0	32.8	10.8	41.2	9.9
Lane LOS	A				A				D	B	E	A
Approach Delay (s)	0.1				0.2				25.5		25.6	
Approach LOS									D		D	

Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			40.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection L

Warhill Trail and Longhill Road

Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	302	49	27	322	4	68	1	20	5	2	24
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		0.979				0.850		0.960				0.850
Flt Protected	0.950			0.950				0.967			0.968	
Satd. Flow (prot)	1770	1824	0	1770	1863	1583	0	1729	0	0	1803	1583
Flt Permitted	0.950			0.950				0.967			0.968	
Satd. Flow (perm)	1770	1824	0	1770	1863	1583	0	1729	0	0	1803	1583
Adj. Flow (vph)	4	364	60	40	435	8	92	4	40	8	4	40
Lane Group Flow (vph)	4	424	0	40	435	8	0	136	0	0	12	40
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 40.8%		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)	1	302	49	27	322	4	68	1	20	5	2	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.82	0.68	0.74	0.50	0.74	0.25	0.50	0.62	0.50	0.60
Hourly flow rate (vph)	4	364	60	40	435	8	92	4	40	8	4	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	443			424			938	924	394	928	946	435
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	443			424			938	924	394	928	946	435
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 %	100			97			58	98	94	96	98	94
cM capacity (veh/h)	1117			1136			219	259	655	224	251	621

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	4	424	40	435	8	136	52
Volume Left	4	0	40	0	0	92	8
Volume Right	0	60	0	0	8	40	40
cSH	1117	1700	1136	1700	1700	274	808
Volume to Capacity	0.00	0.25	0.03	0.26	0.00	0.50	0.06
Queue Length 95th (ft)	0	0	3	0	0	64	5
Control Delay (s)	8.2	0.0	8.3	0.0	0.0	30.4	13.5
Lane LOS	A		A			D	B
Approach Delay (s)	0.1		0.7			30.4	13.5
Approach LOS						D	B

Intersection Summary					
Average Delay	4.7				
Intersection Capacity Utilization	40.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	371	219	109	322	8	130	3	68	5	0	15
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		0.939				0.850		0.959				0.850
Flt Protected	0.950			0.950				0.967			0.950	
Satd. Flow (prot)	1770	1749	0	1770	1863	1583	0	1727	0	0	1770	1583
Flt Permitted	0.950			0.950				0.967			0.950	
Satd. Flow (perm)	1770	1749	0	1770	1863	1583	0	1727	0	0	1770	1583
Adj. Flow (vph)	32	395	270	214	362	12	181	4	80	8	0	20
Lane Group Flow (vph)	32	665	0	214	362	12	0	265	0	0	8	20
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	29	371	219	109	322	8	130	3	68	5	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.94	0.81	0.51	0.89	0.67	0.72	0.75	0.85	0.62	0.25	0.75
Hourly flow rate (vph)	32	395	270	214	362	12	181	4	80	8	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	374			665			1393	1395	530	1330	1518	362
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	374			665			1393	1395	530	1330	1518	362
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 %	97			77			0	96	85	91	100	97
cM capacity (veh/h)	1185			924			93	106	549	88	89	683

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	32	665	214	362	12	265	28
Volume Left	32	0	214	0	0	181	8
Volume Right	0	270	0	0	12	80	20
cSH	1185	1700	924	1700	1700	125	307
Volume to Capacity	0.03	0.39	0.23	0.21	0.01	2.12	0.09
Queue Length 95th (ft)	2	0	22	0	0	550	7
Control Delay (s)	8.1	0.0	10.1	0.0	0.0	588.0	21.8
Lane LOS	A		B			F	C
Approach Delay (s)	0.4		3.7			588.0	21.8
Approach LOS						F	C

Intersection Summary							
Average Delay		100.6					
Intersection Capacity Utilization		67.1%	ICU Level of Service			C	
Analysis Period (min)		15					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	540	50	35	435	10	70	5	20	10	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	185		0	180		180	0		0	0		90
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	150			210			25			25		
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		0.987				0.850		0.972				0.850
Flt Protected	0.950			0.950				0.965			0.969	
Satd. Flow (prot)	1770	1839	0	1770	1863	1583	0	1747	0	0	1805	1583
Flt Permitted	0.950			0.950				0.965			0.969	
Satd. Flow (perm)	1770	1839	0	1770	1863	1583	0	1747	0	0	1805	1583
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		476			1389			557			696	
Travel Time (s)		7.2			21.0			15.2			19.0	
Adj. Flow (vph)	6	600	56	39	483	11	78	6	22	11	6	33
Lane Group Flow (vph)	6	656	0	39	483	11	0	106	0	0	17	33
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	50.1%	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)	5	540	50	35	435	10	70	5	20	10	5	30
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)	6	600	56	39	483	11	78	6	22	11	6	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	494			656			1219	1211	628	1197	1228	483
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	494			656			1219	1211	628	1197	1228	483
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			96			44	97	95	92	97	94
cM capacity (veh/h)	1069			932			139	174	483	146	170	583

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	656	39	483	11	106	50
Volume Left	6	0	39	0	0	78	11
Volume Right	0	56	0	0	11	22	33
cSH	1069	1700	932	1700	1700	166	462
Volume to Capacity	0.01	0.39	0.04	0.28	0.01	0.64	0.11
Queue Length 95th (ft)	0	0	3	0	0	89	9
Control Delay (s)	8.4	0.0	9.0	0.0	0.0	58.6	18.1
Lane LOS	A		A			F	C
Approach Delay (s)	0.1		0.7			58.6	18.1
Approach LOS						F	C

Intersection Summary					
Average Delay	5.5				
Intersection Capacity Utilization	50.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	615	220	125	795	55	130	5	70	10	0	20
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		0.961				0.850		0.954				0.850
Flt Protected	0.950			0.950				0.969			0.950	
Satd. Flow (prot)	1770	1790	0	1770	1863	1583	0	1722	0	0	1770	1583
Flt Permitted	0.950			0.950				0.969			0.950	
Satd. Flow (perm)	1770	1790	0	1770	1863	1583	0	1722	0	0	1770	1583
Adj. Flow (vph)	39	683	244	139	883	61	144	6	78	11	0	22
Lane Group Flow (vph)	39	927	0	139	883	61	0	228	0	0	11	22
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	615	220	125	795	55	130	5	70	10	0	20
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)	39	683	244	139	883	61	144	6	78	11	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												4
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	944			928			2056	2106	806	2003	2167	883
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	944			928			2056	2106	806	2003	2167	883
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 %	95			81			0	86	80	57	100	94
cM capacity (veh/h)	726			737			31	39	382	26	36	345

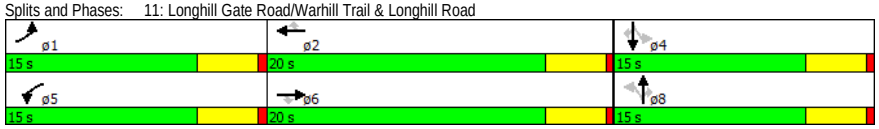
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	39	928	139	883	61	228	33
Volume Left	39	0	139	0	0	144	11
Volume Right	0	244	0	0	61	78	22
cSH	726	1700	737	1700	1700	46	78
Volume to Capacity	0.05	0.55	0.19	0.52	0.04	4.96	0.43
Queue Length 95th (ft)	4	0	17	0	0	Err	43
Control Delay (s)	10.2	0.0	11.0	0.0	0.0	Err	84.8
Lane LOS	B		B			F	F
Approach Delay (s)	0.4		1.4			Err	84.8
Approach LOS						F	F

Intersection Summary					
Average Delay		987.5			
Intersection Capacity Utilization		81.1%	ICU Level of Service		D
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	540	50	35	435	10	70	5	20	10	5	30
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.955			0.967	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1779	1583	0	1801	1583
Flt Permitted	0.950			0.950				0.731			0.753	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1362	1583	0	1403	1583
Satd. Flow (RTOR)			109			109			109			109
Adj. Flow (vph)	5	587	54	38	473	11	76	5	22	11	5	33
Lane Group Flow (vph)	5	587	54	38	473	11	0	81	22	0	16	33
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8		8	4		4
Total Split (s)	15.0	20.0	20.0	15.0	20.0	20.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Act Effct Green (s)	5.8	24.9	24.9	6.5	25.2	25.2		7.8	7.8		7.6	7.6
Actuated g/C Ratio	0.16	0.67	0.67	0.18	0.68	0.68		0.21	0.21		0.21	0.21
v/c Ratio	0.02	0.25	0.05	0.12	0.20	0.01		0.28	0.05		0.06	0.08
Control Delay	15.4	6.4	1.0	14.9	5.7	0.0		15.2	0.2		12.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	15.4	6.4	1.0	14.9	5.7	0.0		15.2	0.2		12.5	0.4
LOS	B	A	A	B	A	A		B	A		B	A
Approach Delay		6.0			6.3			12.0			4.3	
Approach LOS		A			A			B			A	

Intersection Summary			
Cycle Length: 50			
Actuated Cycle Length: 36.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 6.5		Intersection LOS: A	
Intersection Capacity Utilization 39.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Longhill Gate Road/Warhill Trail & Longhill Road



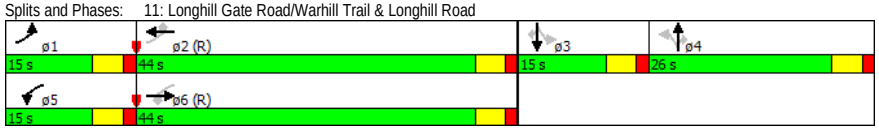
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	540	50	35	435	10	70	5	20	10	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.97	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1779	1583		1801	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73	1.00		0.75	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1362	1583		1403	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)	5	587	54	38	473	11	76	5	22	11	5	33
RTOR Reduction (vph)	0	0	24	0	0	5	0	0	19	0	0	29
Lane Group Flow (vph)	5	587	30	38	473	6	0	81	3	0	16	4
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			8			4	
Permitted Phases			6			2	8		8	4		4
Actuated Green, G (s)	1.0	23.2	23.2	1.3	23.5	23.5		5.3	5.3		5.3	5.3
Effective Green, g (s)	1.0	23.2	23.2	1.3	23.5	23.5		5.3	5.3		5.3	5.3
Actuated g/C Ratio	0.02	0.56	0.56	0.03	0.56	0.56		0.13	0.13		0.13	0.13
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	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	3.0
Lane Grp Cap (vph)	42	1964	878	55	1989	889		172	200		177	200
v/s Ratio Prot	0.00	c0.17		c0.02	0.13							
v/s Ratio Perm			0.02			0.00		c0.06	0.00		0.01	0.00
v/c Ratio	0.12	0.30	0.03	0.69	0.24	0.01		0.47	0.01		0.09	0.02
Uniform Delay, d1	20.0	5.0	4.2	20.1	4.6	4.0		16.9	16.0		16.1	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.4	0.1	31.3	0.3	0.0		2.0	0.0		0.2	0.0
Delay (s)	21.2	5.4	4.3	51.3	4.9	4.0		19.0	16.0		16.3	16.0
Level of Service	C	A	A	D	A	A		B	B		B	B
Approach Delay (s)		5.4			8.3			18.3			16.1	
Approach LOS		A			A			B			B	

Intersection Summary					
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.35				
Actuated Cycle Length (s)	41.8	Sum of lost time (s)	12.0		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	615	220	125	795	55	130	5	70	10	0	20
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.954			0.950	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1777	1583	0	1770	1583
Flt Permitted	0.267			0.344				0.726			0.800	
Satd. Flow (perm)	497	3539	1583	641	3539	1583	0	1352	1583	0	1490	1583
Satd. Flow (RTOR)			239			131			131			131
Adj. Flow (vph)	38	668	239	136	864	60	141	5	76	11	0	22
Lane Group Flow (vph)	38	668	239	136	864	60	0	146	76	0	11	22
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			3	
Permitted Phases	2		6	6		2	4		4	3		3
Total Split (s)	15.0	44.0	44.0	15.0	44.0	44.0	26.0	26.0	26.0	15.0	15.0	15.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0
Act Effct Green (s)	63.3	53.0	53.0	61.3	59.1	59.1		15.7	15.7		7.2	7.2
Actuated g/C Ratio	0.63	0.53	0.53	0.61	0.59	0.59		0.16	0.16		0.07	0.07
v/c Ratio	0.10	0.36	0.25	0.28	0.41	0.06		0.69	0.21		0.10	0.09
Control Delay	9.6	16.8	3.4	13.0	17.2	2.8		56.2	2.3		44.1	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	9.6	16.8	3.4	13.0	17.2	2.8		56.2	2.3		44.1	0.8
LOS	A	B	A	B	B	A		E	A		D	A
Approach Delay		13.1			15.8			37.7			15.2	
Approach LOS		B			B			D			B	

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 51.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Longhill Gate Road/Warhill Trail & Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	615	220	125	795	55	130	5	70	10	0	20
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
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	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	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1777	1583		1770	1583
Flt Permitted	0.27	1.00	1.00	0.34	1.00	1.00		0.73	1.00		0.80	1.00
Satd. Flow (perm)	498	3539	1583	641	3539	1583		1352	1583		1490	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)	38	668	239	136	864	60	141	5	76	11	0	22
RTOR Reduction (vph)	0	0	117	0	0	27	0	0	64	0	0	21
Lane Group Flow (vph)	38	668	122	136	864	33	0	146	12	0	11	1
Turn Type	D.P+P	NA	Perm	D.P+P	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	1	6		5	2			4			3	
Permitted Phases	2		6	6		2	4		4	3		3
Actuated Green, G (s)	59.3	51.0	51.0	59.3	55.1	55.1		15.7	15.7		5.0	5.0
Effective Green, g (s)	59.3	51.0	51.0	59.3	55.1	55.1		15.7	15.7		5.0	5.0
Actuated g/C Ratio	0.59	0.51	0.51	0.59	0.55	0.55		0.16	0.16		0.05	0.05
Clearance Time (s)	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
Lane Grp Cap (vph)	348	1804	807	473	1949	872		212	248		74	79
v/s Ratio Prot	0.00	0.19		c0.02	c0.24							
v/s Ratio Perm	0.06		0.08	0.15		0.02		c0.11	0.01		c0.01	0.00
v/c Ratio	0.11	0.37	0.15	0.29	0.44	0.04		0.69	0.05		0.15	0.01
Uniform Delay, d1	9.0	14.8	13.0	9.3	13.3	10.3		39.8	35.8		45.5	45.2
Progression Factor	1.00	1.00	1.00	1.33	1.12	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.6	0.4	0.3	0.7	0.1		9.0	0.1		0.9	0.1
Delay (s)	9.2	15.4	13.4	12.6	15.6	10.4		48.8	35.9		46.4	45.2
Level of Service	A	B	B	B	B	B		D	D		D	D
Approach Delay (s)		14.6			14.9			44.4			45.6	
Approach LOS		B			B			D			D	

Intersection Summary					
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.47				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A		
Analysis Period (min)	15				
c Critical Lane Group					

Intersection M

Ford's Colony Drive and Longhill Road

Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	254	36	112	239	3	64	0	120	1	0	1
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		0.979				0.850		0.919			0.932	
Flt Protected	0.950			0.950				0.980			0.976	
Satd. Flow (prot)	1770	1824	0	1770	1863	1583	0	1678	0	0	1694	0
Flt Permitted	0.950			0.950				0.980			0.976	
Satd. Flow (perm)	1770	1824	0	1770	1863	1583	0	1678	0	0	1694	0
Adj. Flow (vph)	4	292	48	160	295	8	91	0	136	4	0	4
Lane Group Flow (vph)	4	340	0	160	295	8	0	227	0	0	8	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 44.1%		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)	2	254	36	112	239	3	64	0	120	1	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.87	0.75	0.70	0.81	0.38	0.70	0.25	0.88	0.25	0.25	0.25
Hourly flow rate (vph)	4	292	48	160	295	8	91	0	136	4	0	4
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	303			340			943	947	316	1051	963	295
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	303			340			943	947	316	1051	963	295
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 %	100			87			58	100	81	97	100	99
cM capacity (veh/h)	1258			1219			216	226	725	149	221	744

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	4	340	160	295	8	228	8
Volume Left	4	0	160	0	0	91	4
Volume Right	0	48	0	0	8	136	4
cSH	1258	1700	1219	1700	1700	373	248
Volume to Capacity	0.00	0.20	0.13	0.17	0.00	0.61	0.03
Queue Length 95th (ft)	0	0	11	0	0	97	2
Control Delay (s)	7.9	0.0	8.4	0.0	0.0	28.7	20.0
Lane LOS	A		A			D	C
Approach Delay (s)	0.1		2.9			28.7	20.0
Approach LOS						D	C

Intersection Summary					
Average Delay	7.7				
Intersection Capacity Utilization	44.1%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	375	47	146	349	1	32	0	139	5	0	3
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		0.982				0.850		0.895			0.973	
Flt Protected	0.950			0.950				0.989			0.962	
Satd. Flow (prot)	1770	1829	0	1770	1863	1583	0	1649	0	0	1744	0
Flt Permitted	0.950			0.950				0.989			0.962	
Satd. Flow (perm)	1770	1829	0	1770	1863	1583	0	1649	0	0	1744	0
Adj. Flow (vph)	4	469	64	164	379	4	48	0	167	16	0	4
Lane Group Flow (vph)	4	533	0	164	379	4	0	215	0	0	20	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		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)	1	375	47	146	349	1	32	0	139	5	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.80	0.73	0.89	0.92	0.25	0.67	0.25	0.83	0.31	0.25	0.75
Hourly flow rate (vph)	4	469	64	164	379	4	48	0	167	16	0	4
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	383			533			1220	1220	501	1352	1249	379
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	383			533			1220	1220	501	1352	1249	379
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 %	100			84			65	100	71	80	100	99
cM capacity (veh/h)	1175			1035			137	151	570	79	145	668

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	4	533	164	379	4	215	20
Volume Left	4	0	164	0	0	48	16
Volume Right	0	64	0	0	4	167	4
cSH	1175	1700	1035	1700	1700	334	95
Volume to Capacity	0.00	0.31	0.16	0.22	0.00	0.64	0.21
Queue Length 95th (ft)	0	0	14	0	0	106	19
Control Delay (s)	8.1	0.0	9.1	0.0	0.0	33.3	52.5
Lane LOS	A		A			D	F
Approach Delay (s)	0.1		2.7			33.3	52.5
Approach LOS						D	F

Intersection Summary					
Average Delay	7.4				
Intersection Capacity Utilization	50.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	455	40	145	385	5	75	0	135	5	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105		0	150		95	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	155			110			25			25		
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		0.988				0.850		0.913			0.932	
Flt Protected	0.950			0.950				0.983			0.976	
Satd. Flow (prot)	1770	1840	0	1770	1863	1583	0	1672	0	0	1694	0
Flt Permitted	0.950			0.950				0.983			0.976	
Satd. Flow (perm)	1770	1840	0	1770	1863	1583	0	1672	0	0	1694	0
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		2164			1448			757			349	
Travel Time (s)		32.8			21.9			20.6			9.5	
Adj. Flow (vph)	6	506	44	161	428	6	83	0	150	6	0	6
Lane Group Flow (vph)	6	550	0	161	428	6	0	233	0	0	12	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.5%		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)	5	455	40	145	385	5	75	0	135	5	0	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)	6	506	44	161	428	6	83	0	150	6	0	6
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	433			550			1294	1294	528	1417	1311	428
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433			550			1294	1294	528	1417	1311	428
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 %	100			84			31	100	73	92	100	99
cM capacity (veh/h)	1126			1020			121	136	550	73	133	627

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	550	161	428	6	233	11
Volume Left	6	0	161	0	0	83	6
Volume Right	0	44	0	0	6	150	6
cSH	1126	1700	1020	1700	1700	243	131
Volume to Capacity	0.00	0.32	0.16	0.25	0.00	0.96	0.08
Queue Length 95th (ft)	0	0	14	0	0	220	7
Control Delay (s)	8.2	0.0	9.2	0.0	0.0	91.7	35.0
Lane LOS	A		A			F	E
Approach Delay (s)	0.1		2.5			91.7	35.0
Approach LOS						F	E

Intersection Summary				
Average Delay		16.7		
Intersection Capacity Utilization		58.5%	ICU Level of Service	B
Analysis Period (min)		15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	695	75	185	755	5	40	0	165	10	0	5
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		0.985				0.850		0.891			0.952	
Flt Protected	0.950			0.950				0.990			0.969	
Satd. Flow (prot)	1770	1835	0	1770	1863	1583	0	1643	0	0	1718	0
Flt Permitted	0.950			0.950				0.990			0.969	
Satd. Flow (perm)	1770	1835	0	1770	1863	1583	0	1643	0	0	1718	0
Adj. Flow (vph)	6	772	83	206	839	6	44	0	183	11	0	6
Lane Group Flow (vph)	6	855	0	206	839	6	0	227	0	0	17	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	695	75	185	755	5	40	0	165	10	0	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)	6	772	83	206	839	6	44	0	183	11	0	6
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	844			856			2081	2081	814	2217	2117	839
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844			856			2081	2081	814	2217	2117	839
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			74			0	100	51	13	100	98
cM capacity (veh/h)	792			784			31	39	378	13	37	366

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	856	206	839	6	228	17
Volume Left	6	0	206	0	0	44	11
Volume Right	0	83	0	0	6	183	6
cSH	792	1700	784	1700	1700	117	19
Volume to Capacity	0.01	0.50	0.26	0.49	0.00	1.94	0.89
Queue Length 95th (ft)	1	0	26	0	0	461	59
Control Delay (s)	9.6	0.0	11.2	0.0	0.0	514.5	447.9
Lane LOS	A		B			F	F
Approach Delay (s)	0.1		2.2			514.5	447.9
Approach LOS						F	F

Intersection Summary					
Average Delay		58.9			
Intersection Capacity Utilization		73.6%	ICU Level of Service		D
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	455	40	145	385	5	75	0	135	5	0	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.932	
Flt Protected	0.950			0.950				0.950			0.976	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1770	1583	0	1694	0
Flt Permitted	0.950			0.950				0.950			0.976	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1770	1583	0	1694	0
Adj. Flow (vph)	5	495	43	158	418	5	82	0	147	5	0	5
Lane Group Flow (vph)	5	495	43	158	418	5	0	82	147	0	10	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 37.9%		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)	5	455	40	145	385	5	75	0	135	5	0	5
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)	5	495	43	158	418	5	82	0	147	5	0	5
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	424			538			1035	1245	247	1139	1283	209
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	424			538			1035	1245	247	1139	1283	209
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			85			50	100	81	95	100	99
cM capacity (veh/h)	1132			1026			162	146	753	111	138	797

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	
Volume Total	5	247	247	43	158	209	209	5	82	147	11	
Volume Left	5	0	0	0	158	0	0	0	82	0	5	
Volume Right	0	0	0	43	0	0	0	5	0	147	5	
cSH	1132	1700	1700	1700	1026	1700	1700	1700	162	753	194	
Volume to Capacity	0.00	0.15	0.15	0.03	0.15	0.12	0.12	0.00	0.50	0.19	0.06	
Queue Length 95th (ft)	0	0	0	0	14	0	0	0	61	18	4	
Control Delay (s)	8.2	0.0	0.0	0.0	9.1	0.0	0.0	0.0	47.7	10.9	24.6	
Lane LOS	A				A				E	B	C	
Approach Delay (s)	0.1				2.5				24.1		24.6	
Approach LOS									C		C	

Intersection Summary					
Average Delay		5.3			
Intersection Capacity Utilization		37.9%	ICU Level of Service		A
Analysis Period (min)		15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	695	75	185	755	5	40	0	165	10	0	5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.958	
Flt Protected	0.950			0.950				0.950			0.967	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1770	1583	0	1726	0
Flt Permitted	0.950			0.950				0.950			0.967	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	0	1770	1583	0	1726	0
Adj. Flow (vph)	5	755	82	201	821	5	43	0	179	11	0	5
Lane Group Flow (vph)	5	755	82	201	821	5	0	43	179	0	16	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization 47.0%		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)	5	695	75	185	755	5	40	0	165	10	0	5
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)	5	755	82	201	821	5	43	0	179	11	0	5
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	826			837			1584	1995	378	1791	2071	410
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	826			837			1584	1995	378	1791	2071	410
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 %	99			75			25	100	71	62	100	99
cM capacity (veh/h)	800			793			58	44	620	29	40	590

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2	SB 1	
Volume Total	5	378	378	82	201	410	410	5	43	179	16	
Volume Left	5	0	0	0	201	0	0	0	43	0	11	
Volume Right	0	0	0	82	0	0	0	5	0	179	5	
cSH	800	1700	1700	1700	793	1700	1700	1700	58	620	42	
Volume to Capacity	0.01	0.22	0.22	0.05	0.25	0.24	0.24	0.00	0.75	0.29	0.38	
Queue Length 95th (ft)	1	0	0	0	25	0	0	0	81	30	33	
Control Delay (s)	9.5	0.0	0.0	0.0	11.1	0.0	0.0	0.0	167.2	13.2	135.4	
Lane LOS	A				B				F	B	F	
Approach Delay (s)	0.1				2.2				43.2		135.4	
Approach LOS									E		F	

Intersection Summary					
Average Delay		6.7			
Intersection Capacity Utilization		47.0%	ICU Level of Service		A
Analysis Period (min)		15			

Intersection N

Centerville Road and Longhill Road

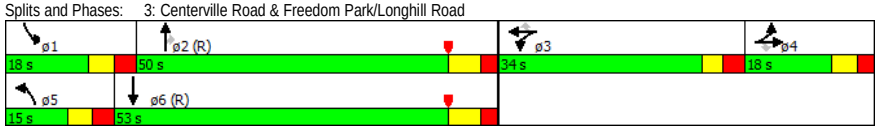
Intersection LOS Analysis

AM/PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2	1	90	4	194	1	256	75	178	198	2
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			0.850			0.850			0.850		0.998	
Flt Protected					0.954		0.950			0.950		
Satd. Flow (prot)	0	1863	1583	0	1777	1583	1770	1863	1583	1770	1859	0
Flt Permitted					0.954		0.950			0.950		
Satd. Flow (perm)	0	1863	1583	0	1777	1583	1770	1863	1583	1770	1859	0
Satd. Flow (RTOR)			150			298			141		1	
Adj. Flow (vph)	0	8	4	205	8	298	4	376	100	220	244	4
Lane Group Flow (vph)	0	8	4	0	213	298	4	376	100	220	248	0
Turn Type		NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Total Split (s)	18.0	18.0	18.0	34.0	34.0	34.0	15.0	50.0	50.0	18.0	53.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Act Effct Green (s)		7.1	7.1		20.6	20.6	5.9	49.9	49.9	24.6	78.4	
Actuated g/C Ratio		0.06	0.06		0.17	0.17	0.05	0.42	0.42	0.20	0.65	
v/c Ratio		0.07	0.02		0.70	0.58	0.05	0.49	0.13	0.61	0.20	
Control Delay		54.5	0.0		58.4	9.1	55.0	29.5	1.8	53.3	12.2	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		54.5	0.0		58.4	9.1	55.0	29.5	1.8	53.3	12.2	
LOS		D	A		E	A	D	C	A	D	B	
Approach Delay		36.3			29.6			24.0			31.5	
Approach LOS		D			C			C			C	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 28.5		Intersection LOS: C	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Centerville Road & Freedom Park/Longhill Road



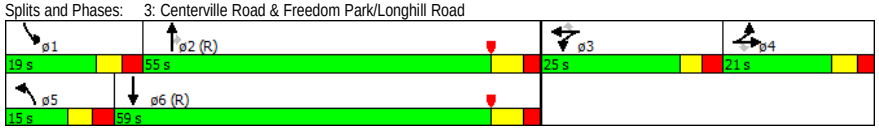
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	2	1	90	4	194	1	256	75	178	198	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583		1777	1583	1770	1863	1583	1770	1858	
Flt Permitted		1.00	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1863	1583		1777	1583	1770	1863	1583	1770	1858	
Peak-hour factor, PHF	0.25	0.25	0.25	0.44	0.50	0.65	0.25	0.68	0.75	0.81	0.81	0.50
Adj. Flow (vph)	0	8	4	205	8	298	4	376	100	220	244	4
RTOR Reduction (vph)	0	0	4	0	0	247	0	0	61	0	0	0
Lane Group Flow (vph)	0	8	0	0	213	51	4	376	39	220	248	0
Turn Type		NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Actuated Green, G (s)		2.9	2.9		20.6	20.6	1.3	46.4	46.4	24.6	69.7	
Effective Green, g (s)		2.9	2.9		20.6	20.6	1.3	46.4	46.4	24.6	69.7	
Actuated g/C Ratio		0.02	0.02		0.17	0.17	0.01	0.39	0.39	0.21	0.58	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)		3.5	3.5		3.5	3.5	3.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		45	38		305	271	19	720	612	362	1079	
v/s Ratio Prot		c0.00			c0.12		0.00	c0.20		c0.12	0.13	
v/s Ratio Perm			0.00			0.03			0.02			
v/c Ratio		0.18	0.00		0.70	0.19	0.21	0.52	0.06	0.61	0.23	
Uniform Delay, d1		57.4	57.1		46.8	42.5	58.8	28.3	23.1	43.3	12.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.0		7.1	0.4	5.5	2.7	0.2	2.9	0.5	
Delay (s)		59.6	57.2		53.8	42.9	64.3	31.0	23.3	46.2	12.7	
Level of Service		E	E		D	D	E	C	C	D	B	
Approach Delay (s)		58.8			47.5			29.7			28.4	
Approach LOS		E			D			C			C	

Intersection Summary					
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.57				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		25.5	
Intersection Capacity Utilization	51.4%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	8	4	89	7	232	3	228	155	275	194	1
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			0.850			0.850			0.850		0.997	
Flt Protected		0.976			0.957		0.950			0.950		
Satd. Flow (prot)	0	1818	1583	0	1783	1583	1770	1863	1583	1770	1857	0
Flt Permitted		0.976			0.957		0.950			0.950		
Satd. Flow (perm)	0	1818	1583	0	1783	1583	1770	1863	1583	1770	1857	0
Satd. Flow (RTOR)			150			261			225		1	
Adj. Flow (vph)	12	12	8	103	12	261	4	285	225	320	220	4
Lane Group Flow (vph)	0	24	8	0	115	261	4	285	225	320	224	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Total Split (s)	21.0	21.0	21.0	25.0	25.0	25.0	15.0	55.0	55.0	19.0	59.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Act Effct Green (s)		7.9	7.9		13.6	13.6	5.9	48.0	48.0	30.2	82.0	
Actuated g/C Ratio		0.07	0.07		0.11	0.11	0.05	0.40	0.40	0.25	0.68	
v/c Ratio		0.20	0.03		0.57	0.64	0.05	0.38	0.29	0.72	0.18	
Control Delay		56.6	0.2		60.8	13.0	55.3	27.4	4.0	54.0	10.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		56.6	0.2		60.8	13.0	55.3	27.4	4.0	54.0	10.1	
LOS		E	A		E	B	E	C	A	D	B	
Approach Delay		42.5			27.6			17.4			35.9	
Approach LOS		D			C			B			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Centerville Road & Freedom Park/Longhill Road



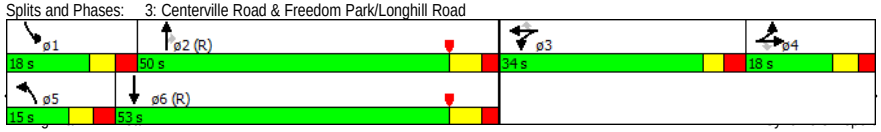
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	8	4	89	7	232	3	228	155	275	194	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583		1783	1583	1770	1863	1583	1770	1858	
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1817	1583		1783	1583	1770	1863	1583	1770	1858	
Peak-hour factor, PHF	0.50	0.67	0.50	0.86	0.58	0.89	0.75	0.80	0.69	0.86	0.88	0.25
Adj. Flow (vph)	12	12	8	103	12	261	4	285	225	320	220	4
RTOR Reduction (vph)	0	0	8	0	0	231	0	0	140	0	0	0
Lane Group Flow (vph)	0	24	0	0	115	30	4	285	86	320	224	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Actuated Green, G (s)		5.1	5.1		13.6	13.6	1.3	45.6	45.6	30.2	74.5	
Effective Green, g (s)		5.1	5.1		13.6	13.6	1.3	45.6	45.6	30.2	74.5	
Actuated g/C Ratio		0.04	0.04		0.11	0.11	0.01	0.38	0.38	0.25	0.62	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)		3.5	3.5		3.5	3.5	3.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		77	67		202	179	19	707	601	445	1153	
v/s Ratio Prot		c0.01			c0.06		0.00	c0.15		c0.18	0.12	
v/s Ratio Perm			0.00			0.02			0.05			
v/c Ratio		0.31	0.01		0.57	0.17	0.21	0.40	0.14	0.72	0.19	
Uniform Delay, d1		55.7	55.0		50.4	48.1	58.8	27.2	24.4	41.0	9.8	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.7	0.0		4.0	0.5	5.5	1.7	0.5	5.5	0.4	
Delay (s)		58.5	55.1		54.4	48.6	64.3	28.9	24.9	46.5	10.2	
Level of Service		E	E		D	D	E	C	C	D	B	
Approach Delay (s)		57.6			50.4			27.4			31.6	
Approach LOS		E			D			C			C	

Intersection Summary					
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.52				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		25.5	
Intersection Capacity Utilization	55.5%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	5	5	145	10	305	5	390	115	370	300	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		115	0		210	200		125	250		0
Storage Lanes	0		1	0		1	1		1	1		0
Taper Length (ft)	25			25			205			200		
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			0.850			0.850			0.850		0.997	
Flt Protected					0.955		0.950			0.950		
Satd. Flow (prot)	0	1863	1583	0	1779	1583	1770	1863	1583	1770	1857	0
Flt Permitted					0.955		0.950			0.950		
Satd. Flow (perm)	0	1863	1583	0	1779	1583	1770	1863	1583	1770	1857	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			150			339			141		1	
Link Speed (mph)		25			45			45			45	
Link Distance (ft)		417			2069			587			746	
Travel Time (s)		11.4			31.3			8.9			11.3	
Adj. Flow (vph)	0	6	6	161	11	339	6	433	128	411	333	6
Lane Group Flow (vph)	0	6	6	0	172	339	6	433	128	411	339	0
Turn Type		NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Total Split (s)	18.0	18.0	18.0	34.0	34.0	34.0	15.0	50.0	50.0	18.0	53.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Act Effct Green (s)		7.1	7.1		18.0	18.0	6.0	43.0	43.0	34.2	81.0	
Actuated g/C Ratio		0.06	0.06		0.15	0.15	0.05	0.36	0.36	0.28	0.68	
v/c Ratio		0.06	0.03		0.65	0.65	0.07	0.65	0.19	0.82	0.27	
Control Delay		54.4	0.2		58.6	10.6	55.6	37.7	4.1	55.9	11.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		54.4	0.2		58.6	10.6	55.6	37.7	4.1	55.9	11.6	
LOS		D	A		E	B	E	D	A	E	B	
Approach Delay		27.3			26.7			30.3			35.9	
Approach LOS		C			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 31.6		Intersection LOS: C	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Centerville Road & Freedom Park/Longhill Road



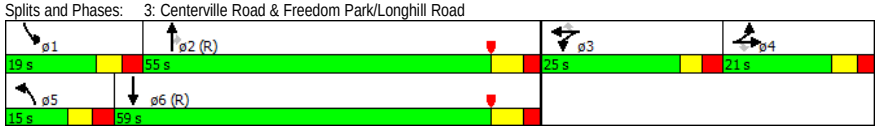
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	5	5	145	10	305	5	390	115	370	300	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583		1779	1583	1770	1863	1583	1770	1858	
Flt Permitted		1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1863	1583		1779	1583	1770	1863	1583	1770	1858	
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)	0	6	6	161	11	339	6	433	128	411	333	6
RTOR Reduction (vph)	0	0	6	0	0	288	0	0	86	0	0	0
Lane Group Flow (vph)	0	6	0	0	172	51	6	433	42	411	339	0
Turn Type		NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Actuated Green, G (s)		2.9	2.9		18.0	18.0	1.4	39.4	39.4	34.2	72.2	
Effective Green, g (s)		2.9	2.9		18.0	18.0	1.4	39.4	39.4	34.2	72.2	
Actuated g/C Ratio		0.02	0.02		0.15	0.15	0.01	0.33	0.33	0.29	0.60	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)		3.5	3.5		3.5	3.5	3.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		45	38		266	237	20	611	519	504	1117	
v/s Ratio Prot		c0.00			c0.10		0.00	c0.23		c0.23	0.18	
v/s Ratio Perm			0.00			0.03			0.03			
v/c Ratio		0.13	0.00		0.65	0.21	0.30	0.71	0.08	0.82	0.30	
Uniform Delay, d1		57.3	57.1		48.0	44.8	58.8	35.3	27.8	40.0	11.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.6	0.0		5.6	0.5	8.3	6.8	0.3	9.8	0.7	
Delay (s)		58.9	57.2		53.6	45.3	67.1	42.1	28.1	49.8	12.3	
Level of Service		E	E		D	D	E	D	C	D	B	
Approach Delay (s)		58.1			48.1			39.2			32.9	
Approach LOS		E			D			D			C	

Intersection Summary					
HCM 2000 Control Delay		39.2	HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio		0.72			
Actuated Cycle Length (s)		120.0	Sum of lost time (s)		25.5
Intersection Capacity Utilization		72.5%	ICU Level of Service		C
Analysis Period (min)		15			
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	25	10	195	25	395	5	350	245	420	295	5
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			0.850			0.850			0.850		0.997	
Flt Protected		0.986			0.958		0.950			0.950		
Satd. Flow (prot)	0	1837	1583	0	1785	1583	1770	1863	1583	1770	1857	0
Flt Permitted		0.986			0.958		0.950			0.950		
Satd. Flow (perm)	0	1837	1583	0	1785	1583	1770	1863	1583	1770	1857	0
Satd. Flow (RTOR)			150			439			210		1	
Adj. Flow (vph)	11	28	11	217	28	439	6	389	272	467	328	6
Lane Group Flow (vph)	0	39	11	0	245	439	6	389	272	467	334	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Total Split (s)	21.0	21.0	21.0	25.0	25.0	25.0	15.0	55.0	55.0	19.0	59.0	
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Act Effct Green (s)		8.7	8.7		18.5	18.5	6.0	48.0	48.0	21.9	73.7	
Actuated g/C Ratio		0.07	0.07		0.15	0.15	0.05	0.40	0.40	0.18	0.61	
v/c Ratio		0.29	0.04		0.89	0.71	0.07	0.52	0.36	1.45	0.29	
Control Delay		57.9	0.3		82.5	11.4	55.6	30.4	7.7	255.1	13.8	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		57.9	0.3		82.5	11.4	55.6	30.4	7.7	255.1	13.8	
LOS		E	A		F	B	E	C	A	F	B	
Approach Delay		45.2			36.9			21.4			154.5	
Approach LOS		D			D			C			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.45			
Intersection Signal Delay: 75.1		Intersection LOS: E	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Centerville Road & Freedom Park/Longhill Road



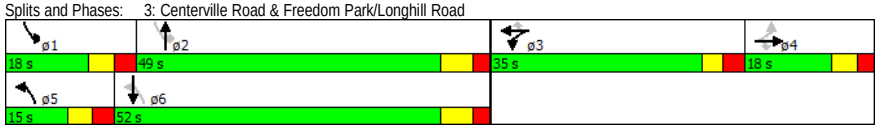
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	25	10	195	25	395	5	350	245	420	295	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1837	1583		1784	1583	1770	1863	1583	1770	1858	
Flt Permitted		0.99	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1837	1583		1784	1583	1770	1863	1583	1770	1858	
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)	11	28	11	217	28	439	6	389	272	467	328	6
RTOR Reduction (vph)	0	0	10	0	0	371	0	0	128	0	0	0
Lane Group Flow (vph)	0	39	1	0	245	68	6	389	144	467	334	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			
Actuated Green, G (s)		7.3	7.3		18.5	18.5	1.4	46.8	46.8	21.9	67.3	
Effective Green, g (s)		7.3	7.3		18.5	18.5	1.4	46.8	46.8	21.9	67.3	
Actuated g/C Ratio		0.06	0.06		0.15	0.15	0.01	0.39	0.39	0.18	0.56	
Clearance Time (s)		6.0	6.0		6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)		3.5	3.5		3.5	3.5	3.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		111	96		275	244	20	726	617	323	1042	
v/s Ratio Prot		c0.02			c0.14		0.00	c0.21		c0.26	0.18	
v/s Ratio Perm			0.00			0.04			0.09			
v/c Ratio		0.35	0.01		0.89	0.28	0.30	0.54	0.23	1.45	0.32	
Uniform Delay, d1		54.1	52.9		49.8	44.8	58.8	28.2	24.6	49.0	14.1	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.3	0.0		28.5	0.7	8.3	2.8	0.9	217.3	0.8	
Delay (s)		56.3	53.0		78.3	45.6	67.1	31.0	25.4	266.4	14.9	
Level of Service		E	D		E	D	E	C	C	F	B	
Approach Delay (s)		55.6			57.3			29.1			161.5	
Approach LOS		E			E			C			F	

Intersection Summary					
HCM 2000 Control Delay		86.6	HCM 2000 Level of Service		F
HCM 2000 Volume to Capacity ratio		0.80			
Actuated Cycle Length (s)		120.0	Sum of lost time (s)		25.5
Intersection Capacity Utilization		76.7%	ICU Level of Service		D
Analysis Period (min)		15			
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	5	5	145	10	305	5	390	115	370	300	5
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			0.850			0.850			0.850		0.998	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1863	1863	1583	1770	1863	1583	1770	1863	1583	1770	1859	0
Flt Permitted				0.950			0.537			0.416		
Satd. Flow (perm)	1863	1863	1583	1770	1863	1583	1000	1863	1583	775	1859	0
Satd. Flow (RTOR)			150			332			141		1	
Adj. Flow (vph)	0	5	5	158	11	332	5	424	125	402	326	5
Lane Group Flow (vph)	0	5	5	158	11	332	5	424	125	402	331	0
Turn Type	Perm	NA	Perm	Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4		4			3	6		2	2		
Total Split (s)	18.0	18.0	18.0	35.0	35.0	35.0	15.0	49.0	49.0	18.0	52.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Act Effct Green (s)		7.1	7.1	14.4	14.4	14.4	60.0	42.4	42.4	54.5	58.5	
Actuated g/C Ratio		0.08	0.08	0.16	0.16	0.16	0.66	0.47	0.47	0.60	0.65	
v/c Ratio		0.03	0.02	0.56	0.04	0.62	0.01	0.49	0.15	0.68	0.27	
Control Delay		44.0	0.2	43.4	32.9	9.8	8.2	20.7	3.2	16.8	10.6	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		44.0	0.2	43.4	32.9	9.8	8.2	20.7	3.2	16.8	10.6	
LOS		D	A	D	C	A	A	C	A	B	B	
Approach Delay		22.1			20.9			16.6			14.0	
Approach LOS		C			C			B			B	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 90.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 72.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Centerville Road & Freedom Park/Longhill Road



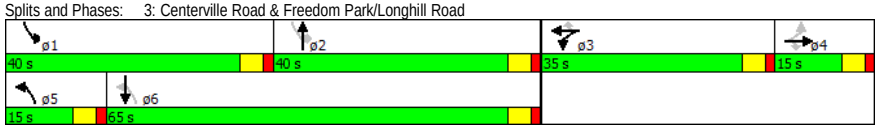
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	5	5	145	10	305	5	390	115	370	300	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1863	1583	1770	1863	1583	1770	1863	1583	1770	1859	
Flt Permitted		1.00	1.00	0.95	1.00	1.00	0.54	1.00	1.00	0.42	1.00	
Satd. Flow (perm)		1863	1583	1770	1863	1583	1000	1863	1583	774	1859	
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)	0	5	5	158	11	332	5	424	125	402	326	5
RTOR Reduction (vph)	0	0	5	0	0	284	0	0	65	0	0	0
Lane Group Flow (vph)	0	5	0	158	11	48	5	424	60	402	331	0
Turn Type	Perm	NA	Perm	Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4		4			3	6		2	2		
Actuated Green, G (s)		1.2	1.2	14.4	14.4	14.4	59.5	47.9	47.9	59.5	58.5	
Effective Green, g (s)		1.2	1.2	14.4	14.4	14.4	59.5	47.9	47.9	59.5	58.5	
Actuated g/C Ratio		0.01	0.01	0.14	0.14	0.14	0.59	0.48	0.48	0.59	0.58	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)		3.5	3.5	3.5	3.5	3.5	3.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)		22	18	253	266	226	599	887	753	572	1081	
v/s Ratio Prot		c0.00		c0.09	0.01		0.00	0.23		c0.08	0.18	
v/s Ratio Perm			0.00			0.03	0.00		0.04	c0.33		
v/c Ratio		0.23	0.00	0.62	0.04	0.21	0.01	0.48	0.08	0.70	0.31	
Uniform Delay, d1		49.2	49.1	40.6	37.2	38.1	8.5	17.9	14.3	11.9	10.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		6.1	0.1	5.0	0.1	0.6	0.0	1.8	0.2	3.9	0.7	
Delay (s)		55.4	49.2	45.5	37.2	38.6	8.5	19.7	14.5	15.8	11.4	
Level of Service		E	D	D	D	D	A	B	B	B	B	
Approach Delay (s)		52.3			40.8			18.4			13.8	
Approach LOS		D			D			B			B	

Intersection Summary					
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.68				
Actuated Cycle Length (s)	100.6	Sum of lost time (s)	25.5		
Intersection Capacity Utilization	72.0%	ICU Level of Service	C		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	25	10	195	25	395	5	350	245	420	295	5
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			0.850			0.850			0.850		0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1859	0
Flt Permitted	0.870			0.950			0.521			0.380		
Satd. Flow (perm)	1621	1863	1583	1770	1863	1583	970	1863	1583	708	1859	0
Satd. Flow (RTOR)			143			429			239		1	
Adj. Flow (vph)	11	27	11	212	27	429	5	380	266	457	321	5
Lane Group Flow (vph)	11	27	11	212	27	429	5	380	266	457	326	0
Turn Type	Perm	NA	Perm	Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4		4			3	6		2	2		
Total Split (s)	15.0	15.0	15.0	35.0	35.0	35.0	15.0	40.0	40.0	40.0	65.0	
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	
Act Effct Green (s)	8.1	8.1	8.1	19.5	19.5	19.5	66.7	39.7	39.7	62.3	65.7	
Actuated g/C Ratio	0.08	0.08	0.08	0.19	0.19	0.19	0.64	0.38	0.38	0.60	0.63	
v/c Ratio	0.09	0.19	0.04	0.64	0.08	0.67	0.01	0.54	0.36	0.70	0.28	
Control Delay	54.8	55.4	0.3	50.4	38.5	9.5	10.8	35.1	7.8	18.1	12.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.8	55.4	0.3	50.4	38.5	9.5	10.8	35.1	7.8	18.1	12.8	
LOS	D	E	A	D	D	A	B	D	A	B	B	
Approach Delay		42.9			23.6			23.7			15.9	
Approach LOS		D			C			C			B	

Intersection Summary			
Cycle Length: 130			
Actuated Cycle Length: 104.6			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 21.3		Intersection LOS: C	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Centerville Road & Freedom Park/Longhill Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	25	10	195	25	395	5	350	245	420	295	5
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	
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	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1858	
Flt Permitted	0.87	1.00	1.00	0.95	1.00	1.00	0.52	1.00	1.00	0.38	1.00	
Satd. Flow (perm)	1620	1863	1583	1770	1863	1583	970	1863	1583	708	1858	
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)	11	27	11	212	27	429	5	380	266	457	321	5
RTOR Reduction (vph)	0	0	11	0	0	353	0	0	144	0	0	0
Lane Group Flow (vph)	11	27	0	212	27	76	5	380	122	457	326	0
Turn Type	Perm	NA	Perm	Split	NA	Perm	D.P+P	NA	Perm	D.P+P	NA	
Protected Phases		4		3	3		5	2		1	6	
Permitted Phases	4		4			3	6		2	2		
Actuated Green, G (s)	4.6	4.6	4.6	19.5	19.5	19.5	66.7	44.1	44.1	66.7	65.7	
Effective Green, g (s)	4.6	4.6	4.6	19.5	19.5	19.5	66.7	44.1	44.1	66.7	65.7	
Actuated g/C Ratio	0.04	0.04	0.04	0.18	0.18	0.18	0.60	0.40	0.40	0.60	0.59	
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	
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.0	5.0	5.0	3.0	5.0	
Lane Grp Cap (vph)	67	77	65	311	327	278	591	741	630	642	1101	
v/s Ratio Prot		c0.01		c0.12	0.01		0.00	0.20		c0.15	0.18	
v/s Ratio Perm	0.01		0.00			0.05	0.01		0.08	c0.28		
v/c Ratio	0.16	0.35	0.01	0.68	0.08	0.27	0.01	0.51	0.19	0.71	0.30	
Uniform Delay, d1	51.2	51.6	50.9	42.7	38.2	39.5	8.9	25.2	21.8	13.2	11.1	
Progression Factor	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	1.4	3.2	0.1	6.3	0.1	0.6	0.0	2.5	0.7	3.7	0.7	
Delay (s)	52.6	54.9	51.0	49.0	38.3	40.1	8.9	27.8	22.4	16.9	11.8	
Level of Service	D	D	D	D	D	D	A	C	C	B	B	
Approach Delay (s)		53.5			42.9			25.4			14.8	
Approach LOS		D			D			C			B	

Intersection Summary					
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.69				
Actuated Cycle Length (s)	110.8	Sum of lost time (s)	20.0		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C		
Analysis Period (min)	15				
c Critical Lane Group					

Arterial LOS Analysis

Longhill Road

AM/PM Peak Hour

Arterial Level of Service: EB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Devon Road	II	45	125.9	25.0	150.9	1.58	37.6	A
Williamsburg W Drive	II	45	38.2	128.0	166.2	0.41	8.8	F
Humelsine Parkway WB	II	45	25.8	12.7	38.5	0.25	23.2	C
Humelsine Parkway WB	II	45	12.0	14.7	26.7	0.11	14.8	E
Total	II		201.9	180.4	382.3	2.34	22.0	C

Arterial Level of Service: WB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Humelsine Parkway WB	II	45	27.1	5.2	32.3	0.26	29.0	B
Humelsine Parkway EB	II	45	12.0	5.9	17.9	0.11	22.1	C
Lane Pl Drive	II	45	25.8	20.0	45.8	0.25	19.5	D
Olde Towne Road	II	45	38.2	70.8	109.0	0.41	13.4	E
Centerville Road	II	45	159.6	58.4	218.0	2.00	33.0	B
Total	II		262.7	160.3	423.0	3.02	25.7	C

Arterial Level of Service: EB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Devon Road	II	45	125.9	52.2	178.1	1.58	31.9	B
Williamsburg W Drive	II	45	38.2	115.1	153.3	0.41	9.5	F
Humelsine Parkway WB	II	45	25.8	13.4	39.2	0.25	22.8	C
Humelsine Parkway WB	II	45	12.0	21.9	33.9	0.11	11.6	F
Total	II		201.9	202.6	404.5	2.34	20.8	D

Arterial Level of Service: WB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Humelsine Parkway WB	II	45	27.1	9.4	36.5	0.26	25.7	C
Humelsine Parkway EB	II	45	12.0	7.4	19.4	0.11	20.3	D
Lane Pl Drive	II	45	25.8	335.1	360.9	0.25	2.5	F
Olde Towne Road	II	45	38.2	204.3	242.5	0.41	6.0	F
Centerville Road	II	45	159.6	60.8	220.4	2.00	32.7	B
Total	II		262.7	617.0	879.7	3.02	12.4	F

Arterial Level of Service: EB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Devon Road	II	45	125.9	25.2	151.1	1.58	37.6	A
Williamsburg W Drive	II	45	38.2	188.8	227.0	0.41	6.4	F
Humelsine Parkway WB	II	45	25.8	14.9	40.7	0.25	21.9	D
Humelsine Parkway WB	II	45	12.0	15.6	27.6	0.11	14.3	E
Total	II		201.9	244.5	446.4	2.34	18.9	D

Arterial Level of Service: WB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Humelsine Parkway WB	II	45	27.1	5.4	32.5	0.26	28.8	B
Humelsine Parkway EB	II	45	12.0	6.1	18.1	0.11	21.8	D
Lane Pl Drive	II	45	25.8	24.1	49.9	0.25	17.9	D
Olde Towne Road	II	45	38.2	42.4	80.6	0.41	18.1	D
Centerville Road	II	45	159.6	58.6	218.2	2.00	33.0	B
Total	II		262.7	136.6	399.3	3.02	27.3	C

Arterial Level of Service: EB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Devon Road	II	45	125.9	149.7	275.6	1.58	20.6	D
Williamsburg W Drive	II	45	38.2	349.5	387.7	0.41	3.8	F
Humelsine Parkway WB	II	45	25.8	15.4	41.2	0.25	21.6	D
Humelsine Parkway WB	II	45	12.0	23.2	35.2	0.11	11.2	F
Total	II		201.9	537.8	739.7	2.34	11.4	F

Arterial Level of Service: WB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Humelsine Parkway WB	II	45	27.1	9.2	36.3	0.26	25.8	C
Humelsine Parkway EB	II	45	12.0	10.3	22.3	0.11	17.7	D
Lane Pl Drive	II	45	25.8	733.5	759.3	0.25	1.2	F
Olde Towne Road	II	45	38.2	528.9	567.1	0.41	2.6	F
Centerville Road	II	45	159.6	82.5	242.1	2.00	29.7	B
Total	II		262.7	1364.4	1627.1	3.02	6.7	F

Arterial Level of Service: EB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Longhill Gate Road	II	45	95.2	6.4	101.6	1.19	42.2	A
Season's Trace	II	45	39.7	10.0	49.7	0.44	31.6	B
Devon Road	II	45	61.9	11.6	73.5	0.78	38.0	A
Williamsburg W Drive	II	45	21.2	12.3	33.5	0.19	20.9	D
Humelsine Parkway WB	II	45	25.8	7.3	33.1	0.25	26.9	C
Humelsine Parkway WB	II	45	12.0	10.1	22.1	0.11	17.9	D
Total	II		255.8	57.7	313.5	2.96	33.9	B

Arterial Level of Service: WB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Humelsine Parkway WB	II	45	27.1	4.3	31.4	0.26	29.9	B
Humelsine Parkway EB	II	45	12.0	8.1	20.1	0.11	19.6	D
Lane Pl Drive	II	45	25.8	3.6	29.4	0.25	30.3	B
Olde Towne Road	II	45	23.0	20.2	43.2	0.21	17.6	D
Season's Trace	II	45	61.9	12.0	73.9	0.78	37.8	A
Warhill Trail	II	45	39.7	5.7	45.4	0.44	34.6	B
Centerville Road	II	45	95.2	32.9	128.1	1.19	33.5	B
Total	II		284.7	86.8	371.5	3.23	31.3	B

Arterial Level of Service: EB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Longhill Gate Road	II	45	95.2	16.8	112.0	1.19	38.3	A
Season's Trace	II	45	39.7	4.0	43.7	0.44	35.9	A
Devon Road	II	45	61.9	16.0	77.9	0.78	35.9	A
Williamsburg W Drive	II	45	21.2	29.0	50.2	0.19	14.0	E
Humelsine Parkway WB	II	45	25.8	3.3	29.1	0.25	30.6	B
Humelsine Parkway WB	II	45	12.0	17.6	29.6	0.11	13.3	E
Total	II		255.8	86.7	342.5	2.96	31.1	B

Arterial Level of Service: WB Longhill Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Humelsine Parkway WB	II	45	27.1	15.4	42.5	0.26	22.1	C
Humelsine Parkway EB	II	45	12.0	16.6	28.6	0.11	13.8	E
Lane Pl Drive	II	45	25.8	17.5	43.3	0.25	20.6	D
Olde Towne Road	II	45	23.0	22.0	45.0	0.21	16.9	E
Season's Trace	II	45	61.9	7.9	69.8	0.78	40.0	A
Warhill Trail	II	45	39.7	17.2	56.9	0.44	27.6	C
Centerville Road	II	45	95.2	38.5	133.7	1.19	32.1	B
Total	II		284.7	135.1	419.8	3.23	27.7	C

Appendix F

Lafayette High School and Season's Trace

Site Access Options

CONSIDERATION ITEM

MEMORANDUM

DATE: August 19, 2014

TO: Williamsburg James City County (WJCC) Schools – School Board

FROM: Ellen Cook, Senior Planner II

SUBJECT: Longhill Road Corridor Study – Matters Pertaining to Lafayette High School

---

Longhill Road is a primary travel corridor in the community that has seen steady increases in traffic volumes over the years leading to current periods of significant congestion and safety issues. Concern over these conditions was documented in the County's 2009 Comprehensive Plan, which included a vision statement for Longhill Road that suggested conducting a study to explore needs along the corridor and context-sensitive transportation solutions. In response, the County applied for an allocation of federal funds to conduct a study, and having received the funds, authorized a contract with Kimley Horn and Associates, Inc., to begin work on the study in April 2013. To date, the study has included extensive technical analysis (traffic count data collection, data on crash reports, etc.), a public input process (creation of a stakeholder Project Advisory Committee, four public meetings, a website, etc.), and check-in meetings with the County's Planning Commission and Board of Supervisors.

Using the technical analysis and the input received, Kimley Horn developed proposed typical sections for the corridor, an access management plan, and an intersection design plan. Together, these were used to produce concept renderings for the whole length of the corridor, as well as a listing of the recommended improvements and phasing recommendations. The proposal for the corridor includes widening to four lanes with a raised center median. With this configuration, which greatly enhances roadway operations and safety, there are some challenges with access into and out of the driveways along the corridor. One area in particular, is in the vicinity of the Lafayette High School (LHS) driveways (specifically the main entrance driveway) and the adjacent Season's Trace intersection. This segment of the corridor is a challenge due to closely spaced intersections. The recommended widening combined with the introduction of median, complicates the issue when attempting to meet VDOT access management requirements for distances between signalized and full-movement intersections (i.e., intersections that allow right turns in and out, as well as left turns in and out). In an effort to address the access needs of LHS and the Season's Trace neighborhood, Kimley Horn has investigated a number of options, and has reviewed the options with School Division staff. The table below provides a brief summary of the options, which are shown graphically in attachment 1, and described in greater detail and evaluated in attachment 2.

Brief Description	Staff/Consultant notes
#1: Signalized full movement intersection at Season's Trace. The LHS Main entrance access would be Right-in/Right-out (RI/RO) and Left-In (but not left out). Construction of a new connection road between LHS and Season's Trace to accommodate LHS traffic wishing to travel eastbound on Longhill Road.	Anticipated to have least cost and environmental impact. However, has the drawback of mixing school and neighborhood traffic.
#2: Moving the Season's Trace entrance road approximately 300 feet to the east. This would create enough distance to allow the Season's Trace and LHS entrances to each be full movement.	This option seems feasible, assuming VDOT would grant a design exception for the new curvature on Season's Trace, but does have a number of other drawbacks (see attachment 2).
#3: Eliminate the current main LHS entrance. The bus loop entrance would now be the main/only entrance. The bus loop itself would be moved to the west side of the school, while the main entrance road would split off and travel in front of the school before joining the existing	This option has the major safety drawback of mixing bus and car traffic at LHS, which does not meet School Division standards.

entrance road alignment. This would create enough distance to allow the Season's Trace and LHS entrances to each be full movement.	
#4: A new segment of road would be built that would connect the existing bus loop entrance to the rear parking lot. The existing main LHS entrance would either be eliminated or be RI/RO only. This would create enough distance to allow the Season's Trace and LHS bus loop entrances to each be full movement.	This option could be feasible, but appears extremely costly, with a substantial list of other drawbacks and numerous on-site impacts.
#5: Conversion of the bus loop intersection into a roundabout. In this option, motorists wishing to travel eastbound on Longhill Road (but unable to make a left out at the main entrance) would be accommodated by first turning right, then going around the roundabout at the LHS bus loop/Christian Life Center in order to reverse direction.	This option has the major safety drawback of mixing bus and car traffic at the LHS bus loop/Christian Life Center intersection, which does not meet School Division standards. It also has a number of other drawbacks.
#6: Conversion of the LHS main entrance into a roundabout. The Season's Trace and bus loop entrances would also remain full movement.	Staff is still in the process of determining whether VDOT would permit a roundabout in this location due to the spacing issues. However, in discussions with VDOT they are always in favor of roundabouts being taken into consideration for a means of access to/from a site or as a means of alternative traffic control. If permitted, it would allow full movement for the main entrance.
#7: The main entrance would have partial access (no left turn out) – the left-out movements would be accommodated by a new road segment that would take these vehicles across the front of the school over to the LHS bus loop entrance, where they would be able to do so.	This is not recommended from a feasibility, safety, and operations standpoint.
#8: A new segment of road would be built that would connect the parking at the rear of LHS to Warhill Sports Complex. The existing main entrance would be eliminated (or RI/RO only).	This is not recommended from a feasibility, cost, and environmental impact standpoint.
#9: In this option, all entrances would remain in their current locations, would have full movement, and would be signalized.	While this option would be ideal in many ways, it does not meet access management/intersection spacing guidelines. Staff can continue to work with VDOT to determine if there might be any chance that a design or access waiver could be granted.

Due to the complexity of this situation, staff and the consultant have determined that as far as the Longhill Road Corridor Study is concerned, the text will discuss the options, but will not make a final recommendation on this matter. Further, staff would note that widening of the segment of Longhill Road between Olde Towne Road and Warhill Trail intersections is not projected to occur until 2025-2027, and that funding has yet to be secured for this segment of the road. Staff would look to the School Board for any input it may have on the options, but a final determination on this matter is not necessary at this time. County staff anticipates additional discussion with the School Division and Board over time as implementation of improvements to Longhill Road proceeds, and would particularly look forward to further coordination efforts should it appear that there was an opportunity to address some safety and/or operations issues in the vicinity of LHS in advance of the actual widening project.

_____

Ellen Cook

Attachments

1. Depiction of Options
2. Description and Evaluation of Options

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #1



New Road Connection

Unsignalized
Full Movement

Unsignalized Partial Access
RI/RO Channelized Left-Turn

Signalized

James City County
Hydrology

Feet
0 115 230 460

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #2



New Road Connection

Unsignalized
Full Movement

Unsignalized Partial Access
RI/RO Channelized Left-Turn

Signalized

James City County
Hydrology

Feet
0 90 180 360

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #3



New Road Connection

Unsignalized
Full Movement

Unsignalized Partial Access
RI/RO Channelized Left-Turn

Signalized

James City County
Hydrology

Feet
0 90 180 360

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #4



New Road Connection

Unsignalized
Full Movement

Unsignalized Partial Access
RI/RO Only

Signalized

James City County
Hydrology

0 90 180 360 Feet

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

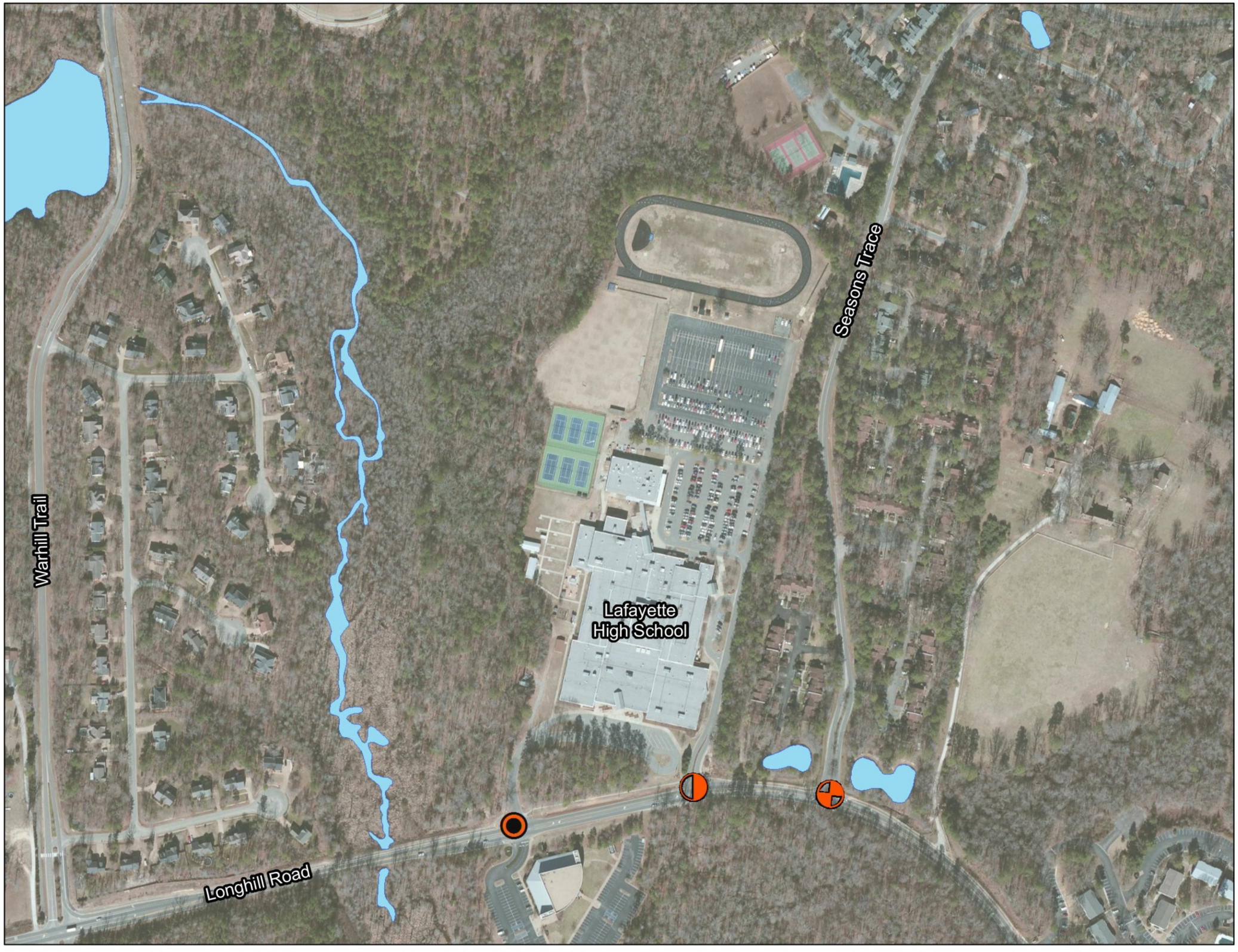
Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #5



- Roundabout
- Unsignalized Full Movement
- Unsignalized Partial Access RI/RO Channelized Left-Turn
- Signalized
- James City County Hydrology

0 90 180 360 Feet

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #6



Roundabout

Unsignalized
Full Movement

Signalized

James City County
Hydrology

0 90 180 360 Feet

Coordinate System: NAD 1983 StatePlane
Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #7



New Road Connection

Unsignalized
Full Movement

Unsignalized Partial Access
RI/RO Channelized Left-Turn

Signalized

James City County
Hydrology

0 90 180 360 Feet

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #8



New Road Connection

Unsignalized
Full Movement

Unsignalized Partial Access
RI/RO Channelized Left-Turn

Signalized

James City County
Hydrology

0 90 180 360 Feet

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

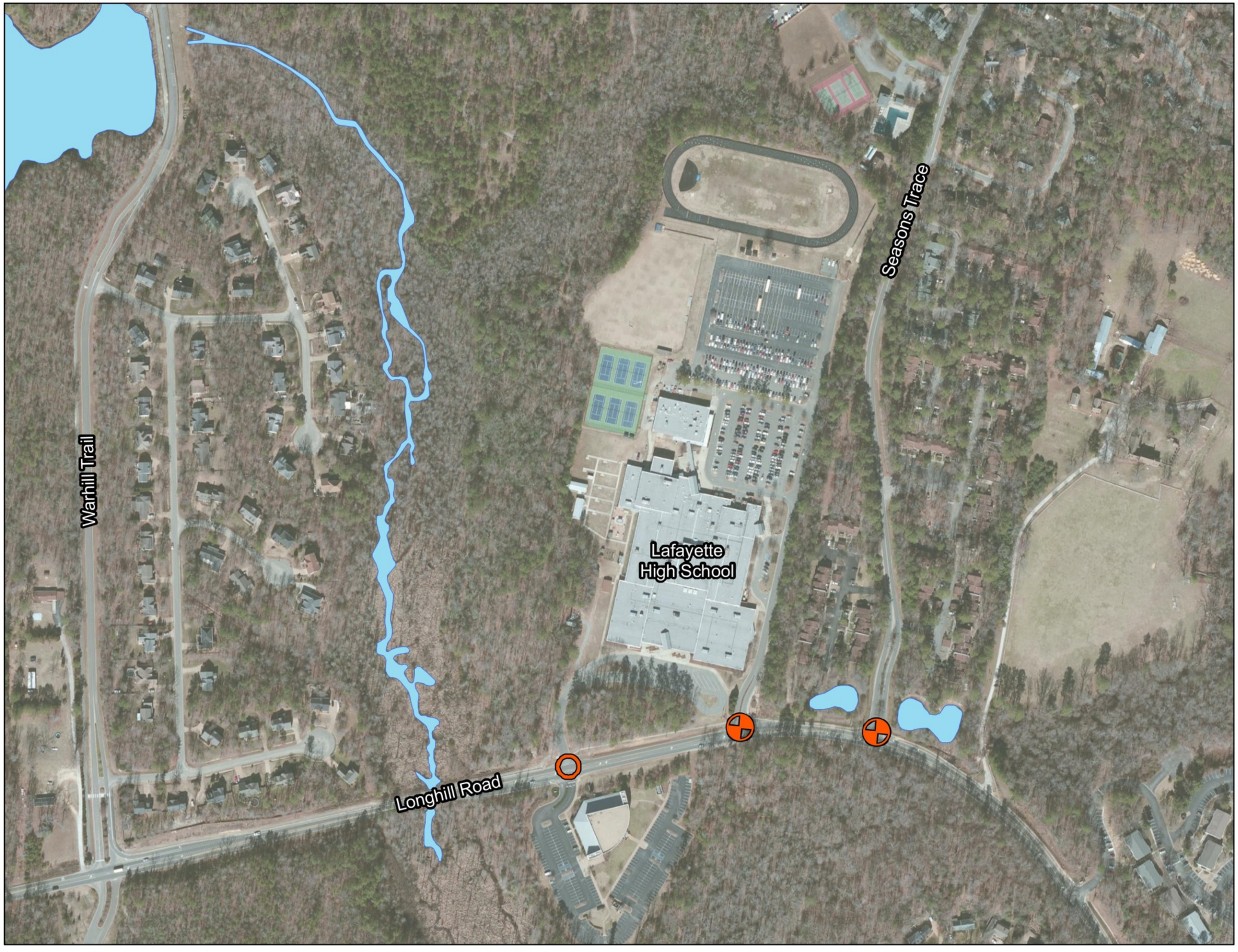
Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Longhill Road Corridor Study

Lafayette High School and Seasons Trace Intersections

Option #9



- Unsignalized Full Movement
- Unsignalized Partial Access RI/RO Channelized Left-Turn
- Signalized
- James City County Hydrology

0 90 180 360 Feet

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User CommunityJames City County

Kimley»Horn

Lafayette High School Site Access to Longhill Road Improvement Options Comparison

Improvement Option	Access	Rationale	Operations		Environmental Impact	Cost *	Comments
			Pros	Cons			
Option 1	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Unsignlized/Partial Access (RI/RO Channelized EB Left-Turn Lane) 3) Seasons Trace Entrance – Signalized/Full-Movement 4) New Roadway Connection constructed between LHS and Seasons Trace	1) Traffic volumes, the configuration of the road, and travel speeds have resulted, and are expected to continue to result in conditions that many road users feel are unsafe. A signal to accommodate left-turn movements exiting both site access driveways would help alleviate these issues. 2) The Seasons Trace community could warrant a traffic signal by themselves. However, this would not resolve the operational concerns/challenges LHS students, faculty, staff, and buses would continue to deal with when exiting the site during peak operational times. 3) Collectively LHS and Season's Trace traffic volumes will warrant a traffic signal. This results in both groups benefiting. 4) Locating the traffic signal at Season's Trace site driveway serves year-round residents, who have peak entering/exiting movements for a greater proportion of the day. 5) In addition, it is better to have LHS motorists using a public road than to have residents in Seasons Trace traveling through along the high school entrance road. 6) The lefts-out from LHS main entrance would be restricted because the distance between the two existing site access driveways is too short to allow a full-movement intersection and a signalized intersection, or two signalized intersections (VDOT Access Management regulations). 7) Based on the anticipated cost of improving the Longhill Road/Season's Trace intersection to adequately install a traffic signal and associated exclusive turn-lanes providing a connection between the two sites enhances the number of users that benefit from the improvement. The additional user benefits component improves the probability of funding.	1) Traffic signal would help address safety issues and operational issues where side streets currently experience longer periods of delay during peak traffic conditions. 2) The connection road between LHS and Season's Trace could also function as a secondary emergency services access in the event of an emergency that blocked the main entrance road at the Longhill Road intersection.	1) Adds car and bus traffic to Season's Trace. However, this would be offset by the fact that having a traffic signal would allow motorists exiting Season's Trace to have a dedicated, predictable amount of time to more safely exit on to Longhill Road. As cars are stopped on Longhill Road this allows Seasons Trace and LHS to exit safely and efficiently. 2) Concern has been expressed that some busses do stage at the rear of the high school (not in the bus loop area) – these buses would travel through Season's Trace. (The school division may be able to figure out alternatives to staging some or all of these buses at Lafayette). 3) Seasons Trace residents have voiced they do not want this connection.	1) Intersection improvements will likely result in the modification of the stormwater ponds. 2) No Environmental Resources would be impacted by the road connection between Season's Trace and LHS.	1) For the road connection between Season's Trace and Lafayette, a distance of approximately 230 feet, the estimated cost would be: $400K ~ $500K 2) Traffic Signal and Intersection Improvements is in the range of $1.4 ~ $1.6 Million	Anticipated to have least cost and environmental impact. However, has the drawback of mixing school and neighborhood traffic.

Lafayette High School Site Access to Longhill Road Improvement Options Comparison

Improvement Option	Access	Rationale	Operations		Environmental Impact	Cost *	Comments
			Pros	Cons			
Option 2	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Unsignalized/Full-Movement 3) Season's Trace Entrance (RELOCATED approximately 300 feet to the East) – Unsignalized/Full-Movement	1) Intersection spacing is such that it allows for two-full movement intersections to be maintained if one or the other were to be signalized in the future. 2) Since the Seasons Trace community could warrant a traffic signal by themselves, and the Seasons Trace community does not want a connection between the two properties, this will allow LHS to maintain full-movement access at the main entrance.	1) Maintains separation of motorists from LHS and Seasons Trace. 2) Provides both locations with full-movement access.	1) Neither entrance would be signalized resulting in operational conditions similar to those that exist today. 2) The relocated entrance would be a substantially different geometry (curved versus straight), and would require a VDOT design exception (due to having to have a lower than 35 mph design speed). 3) The re-located entrance would likely be quite close to the side of the units on Spring East (in Season's Trace). 4) The entrance to the Warhill Inn B&B would be affected (joined to the entrance road with a T-intersection).	1) The relocated entrance would be closer/into the stream and RPA features. 2) Likely to result in the modification of the stormwater ponds to a greater degree than would occur with just the widening of Longhill Road.	1) For the relocated entrance road to Seasons Trace, a distance of approximately 560 feet (this also includes substantial reconstruction of the existing culverts), the estimated cost would be in the range of : $1.3 ~ $1.5 Million*With signal/intersections improvements additional $400K to $600K	This option seems feasible, assuming VDOT would grant the design exception, but also has a number of other environmental and neighborhood impact related drawbacks.
Option 3	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Intersection eliminated 3) Season's Trace Entrance – Unsignalized/Full-Movement 4) OTHER ITEMS: The bus loop entrance would now be the main/only entrance. The bus loop itself would be moved to the west side of the high school, while the main entrance road would split off and travel in front of the school before joining the existing entrance road alignment.	1) As noted in Options 1 or 2, there is currently not enough separation distance to allow for either two signalized intersections or a signalized intersection and a full movement unsignalized intersection (per VDOT Access Management Guidelines). 2) However, if the current bus entrance was made into the main entrance for LHS, it would be possible to achieve enough distance to allow for two full-movements unsignalized or a full-movement and a signalized intersection. This option differs from #4 below by not including the new road around the school by instead moving the bus loop location.	1) This option would maintain the separation of motorists from LHS and Seasons Trace. 2) Provides both locations with full-movement access.	1) This option would mix bus and other vehicle traffic, which is a safety issue not desired by the WJCC School Division. 2) This option creates a situation where two intersections are placed in extremely close proximity to one another creating a very unsafe traffic operation condition on site. 3) There is currently a cell tower in the location where the bus loop would need to go. The cell tower lease will end in 2018. 4) Other elements on the west side of the building might also need to be re-located (pavilion, garden, playground area, possible the area where trailers could go).	1) There is question/concern regarding whether the bus loop could fit along the west side of the building given the RPA, wetlands and steep slopes. 2) A preliminary examination based on an exhibit that was prepared for the cell tower site plan suggests that there may be sufficient space; however, further formal investigation would be needed to confirm this with certainty.	1) There would be costs associated with relocating the bus loop and re-routing the main entrance drive in front of the school. 2) These costs could be fairly significant due to grading of the new connection across the front of the school and construction of a new bus loop.	This option seems feasible, but has drawback of mixing bus and car traffic at Lafayette, extreme safety concerns.

Lafayette High School Site Access to Longhill Road Improvement Options Comparison

Improvement Option	Access	Rationale	Operations		Environmental Impact	Cost *	Comments
			Pros	Cons			
Option 4	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – (Undetermined whether it would be eliminated, or be Right-In/Right-Out (RI/RO only) 3) Season's Trace Entrance – Signalized/Full Movement 4) OTHER ITEMS: A new segment of road would be built that would connect the bus loop entrance to the rear parking lot.	1) As noted in Options 1 or 2, there is currently not enough separation distance to allow for either two signalized intersections or a signalized intersection and a full movement unsignalized intersection (per VDOT Access Management Guidelines). 2) However, if the current bus entrance was made into the main entrance for Lafayette, it would be possible to achieve enough distance to allow for two full-movement unsignalized intersections or a full-movement and a signalized intersection.	1) This option would maintain the separation of motorists from LHS and Seasons Trace. 2) Provides both locations with full-movement access.	1) Mixes bus and other vehicle traffic, which is a safety issue not desired by the School Division. 2) Building this new segment of road would have significant impacts on the site. It would likely mean relocating or eliminating at least two of the tennis courts, as well as conflicting with the position of the existing cell tower on the site (the land is leased for a 10 year period, ending in 2018). 3) Building the road through this area would likely eliminate the ability to have trailers where they have been placed on site (where infrastructure is already in place). 4) Places a roadway fairly close to the building structure posing further concern over constructing a new road along this alignment on site.	1) Tying a new road into the existing bus loop entrance road could mean more impacts to the RPA.	1) This new road segment would be approximately 1,000 feet long, with an estimated cost of: $1.4 to $1.6 Million 2) *Note that this cost estimate does not include moving the tennis courts.	This option could be feasible, but appears extremely costly, with a substantial list of other drawbacks. Numerous on-site impacts.
Option 5	1) LHS Bus Loop Entrance: Roundabout 2) LHS Main Entrance – Unsignlized/Partial Access (RI/RO Channelized EB Left-Turn Lane) 3) Seasons Trace Entrance – Signalized/Full Movement	1) The lefts-out from LHS main entrance would be restricted because the distance between the two existing site access driveways is too short to allow a full-movement intersection and a signalized intersection, or two signalized intersections (VDOT Access Management regulations). 2) In this option, motorists wishing to travel eastbound on Longhill (but unable to make a left out) would not be accommodated by the connection to the Season's Trace traffic signal, but would instead be accommodated by first turning right, then going around the roundabout at the bus loop/Christian Life Center in order to reverse direction.	1) This option would maintain the separation of motorists from Lafayette and Season's Trace.	1) Mixes all eastbound LHS motorists with the bus traffic exiting the current bus loop. This is not recommended from a safety standpoint. 2) A roundabout slows traffic to approximately 20 mph – so this is a solution that would affect all traffic on Longhill Road at all times of day (not just at school let out). 3) Slow moving buses making a U-Turn in the Roundabout.	1) The construction of a roundabout at this point in the road would be difficult – roundabouts require a larger area than a standard intersection to construct, and this area is adjacent to the wetlands.	1) Construction of a Roundabout at this intersection is in the range of $1.8 to $2.0 Million.	Not recommended from a safety/mixing of traffic standpoint and operational impacts to traffic flow along Longhill Road.

Lafayette High School Site Access to Longhill Road Improvement Options Comparison

Improvement Option	Access	Rationale	Operations		Environmental Impact	Cost *	Comments
			Pros	Cons			
Option 6	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Roundabout 3) Seasons Trace Entrance – Signalized/Full-Movement	1) The lefts-out from LHS main entrance would be restricted because the distance between the two existing site access driveways is too short to allow a full-movement intersection and a signalized intersection, or two signalized intersections (VDOT Access Management regulations). 2) However, with a roundabout, motorists wishing to travel eastbound on Longhill Road (but unable to make a left out) would be accommodated via the roundabout.	1) This option would maintain the separation of motorists from LHS and Seasons Trace.	1) Might not meet VDOT standards due to spacing issues.	1) Does not appear to be significant.		Staff is still in the process of determining whether VDOT would permit a roundabout in this location due to the spacing issues. However, in discussions with VDOT they are always in favor of roundabouts being taken into consideration for a means of access to/from a site or as a means of alternative traffic control. If permitted, it would allow full movement for the main entrance.
Option 7	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Unsignlized/Partial Access (RI/RO Channelized EB Left-Turn Lane) 3) Seasons Trace Entrance – Unsignalized/Full-Movement 4) OTHER ITEMS: Construct a new road segment that would take those wishing to make a left-out across the front of the school over to the bus loop entrance, where they would be able to do so.	1) This option would allow for left-out turning movements.	1) This option would maintain the separation of motorists from Lafayette and Season's Trace.	1) Two choices for the new road segment – a) Routing it within the existing bus loop, b) building a new connection that would thread in between the bus loop at Longhill Road. 2) Either configuration mixes general LHS traffic with bus traffic, which is not an ideal scenario from a safety point of view. 3) As far as building a new connection in between the bus loop and Longhill, it does not appear that there would be sufficient space, especially once Longhill Road were widened. It is also hard to imagine how this new connection could be brought into the bus loop entrance safely (would involve a T-intersection?). 4) Routing this left turning group within the existing bus loop, would seem to involve either bringing motorists in between the school and the buses (potentially unsafe) or bringing motorists in right at the point that the buses are turning around (which seems like a bad point to merge these two types of traffic).	1) It appears no Environmental resources would be impacted by the road connection between the LHS main entrance and the LHS bus loop.	1) Construction of a Roundabout at this intersection is in the range of $1.1 to $1.5 Million.	This is not recommended from a feasibility, safety and operations standpoint.

Lafayette High School Site Access to Longhill Road Improvement Options Comparison

Improvement Option	Access	Rationale	Operations		Environmental Impact	Cost *	Comments
			Pros	Cons			
Option 8	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Eliminated (relocated – see description below). Consideration for a RI/RO only. 3) Seasons Trace Entrance – Unsignalized/Full-Movement 4) OTHER ITEMS: A new segment of road would be built that would connect the parking at the rear of LHS site to Warhill Sports Complex.	1) This option would solve the issue of the LHS-Seasons Trace connection and intersection spacing by routing most traffic to Warhill Trail through the Warhill Sports Complex.	1) This option would maintain the separation of motorists from Lafayette and Season's Trace. 2) A traffic signal is planned/proposed at the entrance to the Warhill Sports Complex, so motorists accessing LHS would be able to enter/exit Longhill Road at a signal. 3) This option would keep bus and passenger vehicles separated.	1) This option would likely impact either the track or the multi-purpose field at Lafayette, likely necessitating relocation (if possible) or elimination. 2) Crossing over onto the Complex property, there is pinch point between the baseball field and the RPA – a new road would likely impact one or the other. In addition, the new road would cause the existing multi-use path to have to be relocated. 3) Warhill Trail already experiences very heavy traffic at certain times, so it would not be ideal to add Lafayette traffic to this scenario.	1) The new road segment would have to cross a major area of RPA and wetlands, necessitating a bridge.	1) Building the new segment of road would likely be extremely costly. 2) The estimated distance would be approximately 1,950 and would include at least one bridge and/or box culverts, resulting in an approximate cost of: $7 ~ $8 Million	This is not recommended from a feasibility, cost and environmental impact standpoint.
Option 9	1) LHS Bus Loop Entrance – Unsignalized/Full-Movement 2) LHS Main Entrance – Signalized/Full-Movement 3) Seasons Trace Entrance – Signalized/Full-Movement	1) Provides signalized traffic control at both site access driveway intersections. Keeps LHS and Seasons Trace traffic separated. 2) Traffic volumes, the configuration of the road, and travel speeds have resulted, and are expected to continue to result in conditions that many road users feel are unsafe. Traffic signals to accommodate left-turn movements exiting both site access driveways would help alleviate these issues. 3) The Seasons Trace community could warrant a traffic signal by themselves. 4) LHS is close to also warranting a traffic signal by itself.	1) Traffic signals would help address safety issues and operational issues where side streets currently experience longer periods of delay during peak traffic conditions – this is the only option that includes having a signal along this part of Longhill Road.	1) Despite both intersections either meeting and/or very close to meeting necessary signal warrants it is highly unlikely VDOT would signalize both intersections. 2) The distance between the LHS intersection and the Seasons Trace entrance is too short to allow for two signalized intersections (VDOT access management regulations).	1) Intersection improvements will likely result in the modification of the stormwater ponds. 2) No Environmental Resources would be impacted by the road connection between Season's Trace and LHS.	1) Traffic signalization of both intersections and intersection improvements at both locations is in the range of $2.0 ~ $2.4 Million	While this option would be ideal in many ways, it does not meet access management/intersection spacing guidelines. Staff can continue to work with VDOT to determine if there might be a chance that a design or access waiver could be granted.

* Very general Planning Level Cost Estimates.

WJCC School Board Meeting – August 19, 2014

Longhill Road Corridor Study Site Access Options

Main issues from School Board meeting by each option:

Options and Issues

1. Many concerns regarding the residents of Season's Trace and increased traffic. No issues noted regarding the school. Questions about possible widening of the Season's Trace main road to accommodate traffic.
2. Same question about widening the Season's Trace main road.
3. Question about who would pay for the new bus loop construction?
4. Questions about need to move tennis courts and possible wetlands implications.
5. Major concerns about bus loop roundabout and student drivers.
6. Major concerns about main entrance roundabout and student drivers.
7. Some concerns about mixing car and bus traffic.
8. Basically dismissed as a viable solution.
9. Favorable responses. Board urged JCC to work with VDOT for approval of two signals.

Other Comments

* Board noted repeatedly during the above discussion in their view that a signal is needed at the Lafayette main entrance.

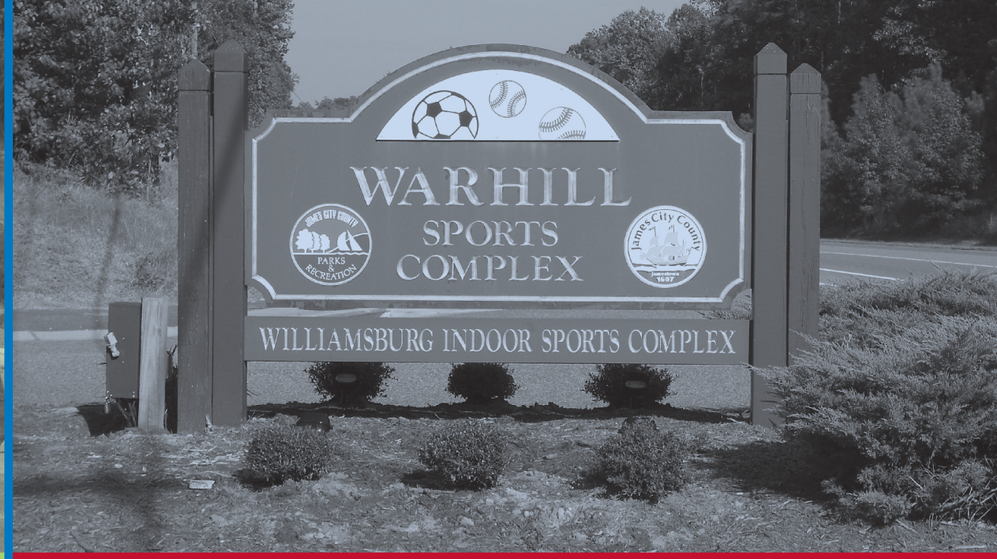
* Board would like to give parents and staff an opportunity for input into this process as options narrowed.

* Noted main goal for the Board is the safety of students and staff.

* Board thanked JCC for the collaboration on this project.

* Mr. Fuentes asked that serious consideration be given before 2025 to adding traffic calming measures by Lafayette. This could include rumble strips and moving the flashing sign further out. He also asked for crosswalks, especially at Windsor Forest and Regency, and possibly extending the multi-use trail.





Longhill Road Corridor Study

James City County





PREPARED FOR

James City County VIRGINIA Jamestown 1607

WILLIAMSBURG - JAMES CITY COUNTY SCHOOL

LAFAYETTE HIGH SCHOOL

PREPARED BY

Kimley»Horn

August 2014

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



Longhill Road Corridor Study
James City County, Virginia

August 2014

Prepared for:
James City County
Development Management
101-A Mounts Bay Road
Williamsburg, VA 23185

Prepared by:
Kimley-Horn and Associates, Inc.
4500 Main Street
Suite 500
Virginia Beach, Virginia 23462
Project Number: 116085034



Table of Contents

Chapter 1.0 Executive Summary 5
Chapter 2.0 Introduction 8
Section 2.1 Guiding Principles 8
Section 2.2 Corridor Limits and Study Area 8
Section 2.3 Study Purpose 8
Section 2.4 Public Involvement Process 10
2.4.1 Project Committees 10
2.4.2 Planning Commission and Board of Supervisor Presentations 10
2.4.3 Project Website 11
2.4.4 Public Involvement 11
Chapter 3.0 Existing Conditions 18
Section 3.1 Existing Land Use 18
Section 3.2 Existing Study Area Roadway Characteristics 18
Section 3.3 Special Traffic Generators 18
Section 3.4 Existing Traffic Volumes and Characteristics 19
Section 3.5 Functional Classification 24
3.5.1 Interstates, Expressways, and Freeways 24
3.5.2 Arterials 24
3.5.3 Principal Arterials 24
3.5.4 Minor Arterials 24
3.5.5 Collectors 24
3.5.6 Locals 24
Section 3.6 Congested Corridors Level of Service 25
Section 3.7 Existing Level of Service (LOS) 25
3.7.1 Roadway Capacity Analysis 25
3.7.2 Intersection LOS Analysis 26
Section 3.8 Bicycle and Pedestrian Environment 30
3.8.1 Sidewalks and Trails 30
3.8.2 Crosswalks 31
3.8.3 Bike Lanes 31
Section 3.9 Transit Conditions 32
3.9.1 Bus Service 32
3.9.2 Bus Stops 33
Section 3.10 Crash Analysis 34
Chapter 4.0 Environmental Existing Conditions Screening 37
Section 4.1 Wetlands and Surface Waters 37
Section 4.2 Floodplain 40
Section 4.3 Dam Break Inundation Zone 41
Section 4.4 Threatened and Endangered Species 41
Section 4.5 Cultural and Historic Resources 45
Section 4.6 Hazardous Materials 45
Section 4.7 Environmental Summary 48
Chapter 5.0 Future Traffic Volume Projections 49
Section 5.1 Background 49
Section 5.2 Development of Growth Rates 49
5.2.1 Historical VDOT Annual Average Traffic Volume Estimates 49
5.2.2 Hampton Roads Regional Travel Demand Model 49
5.2.3 Socioeconomic Data 50
5.2.4 Planned or Approved Land Development 50
Section 5.3 Market Assessment 52
5.3.1 Definition of Corridor and Market Area 52
5.3.2 Population Growth 52
5.3.3 Wage and Salaried Employment 54
5.3.4 Industry Mix 54
5.3.5 Population and Employment Projections 55
5.3.6 Employment Projections 56
5.3.7 Other Economic Development Factors 57
5.3.8 Market Assessment Summary 57
Section 5.4 Results: Growth Rates and Future Traffic Volumes 57
5.4.1 Growth Rates 57
5.4.2 Future Traffic Volume Projections 58
5.4.3 Future Roadway Improvements 61
Chapter 6.0 Future Conditions Analysis 63
Section 6.1 Arterial Level of Service 63
Section 6.2 Intersection Level of Service 64
Chapter 7.0 Access Management Strategies 69
Section 7.1 Introduction 69



7.1.1 Need for Access Management 69
Section 7.2 Access Management Strategies 69
7.2.1 Site Access Treatments 70
Chapter 8.0 Median Treatments 71
Section 8.1 Corridor Median Treatments 71
8.1.1 Non-Traversable Median 71
8.1.2 Median U-Turn Treatment 71
8.1.3 Directional Crossover (Left-Over Crossing) 71
8.1.4 Left-Turn Storage Bays 72
8.1.5 Offset Left-Turn Treatment 72
Section 8.2 Intersection and Minor Street Treatments 72
8.2.1 Skip Marks (Dotted Line Markings) 72
8.2.2 Intersection and Driveway Curb Radii 72
8.2.3 Minor Street Approach Improvements 72
Section 8.3 Intelligent Transportation System Solutions 72
8.3.1 Signalization 72
8.3.2 -Controlled Signal System 72
8.3.3 Dynamic Message Signs (DMS) 73
8.3.4 Closed Circuit Television Traffic Monitoring 73
8.3.5 Emergency Vehicle Preemption 73
Chapter 9.0 Corridor Recommendations 74
Section 9.1 Short Term Recommendations and Planning Level Cost Estimates 75
9.1.1 Planning Level Cost Estimates – Short Term 79
Section 9.2 Mid-Term Recommendations and Planning Level Cost Estimates 81
9.2.1 Planning Level Cost Estimates – Mid Term 84
Section 9.3 Long Term Recommendations and Planning Level Cost Estimates 87
9.3.1 Planning Level Cost Estimates – Long Term 88
Chapter 10.0 Implementation Plan 90
Section 10.1 Introduction 90
Section 10.2 Federal Funding Source Alternatives 90
10.2.1 Congestion Mitigation and Air Quality (CMAQ) 90
10.2.2 Highway Safety Improvement Program (HSIP) 90
10.2.3 Surface Transportation Program (STP) 91
10.2.4 Transportation Alternatives Program (TAP) 91
Section 10.3 State Funding Source Alternatives 91
10.3.1 Revenue Sharing 91
Section 10.4 Local Funding Source Alternatives 92
Section 10.5 Funding Summary 92
Appendices 93
Appendix A. Data Collection 93
Appendix B. Public Involvement 93
Appendix C. Environmental Screening 93
Appendix D. Traffic Projection Methodology Memorandum 93
Appendix E. Capacity Analysis 93
Appendix F. Lafayette High School and Season's Trace Site Access Options 93



List of Figures

Figure 2-1: Longhill Road Corridor Study Area 9
Figure 2-2: Thought Wall Results 12
Figure 2-3: Priority Decision Tree Results 13
Figure 2-4: Build-A-Street Results 14
Figure 2-5: Summary of Common Participant Comments 17
Figure 3-1: Study Area Existing Zoning 20
Figure 3-2: Study Area Future Land Use Map 21
Figure 3-3: Existng (2013) Peak Hour Turning Movement Counts and Average Weekday Daily Traffic Volumes (Intersection A – H) 22
Figure 3-4: Existng (2013) Peak Hour Turning Movement Counts and Average Weekday Daily Traffic Volumes (Intersections I – N) 23
Figure 3-5: Purple Line Route 32
Figure 3-6: WATA Bus Stop Locactions along Longhill Road 33
Figure 3-7: Distribution of Crashes by Severity 34
Figure 3-8: Distribution of Crashes by Type 34
Figure 3-9: Longhill Road Corridor Historic Crash Data (2010-2012) 35
Figure 3-10: Distribution of Crashes by Day of Week 36
Figure 3-11: Distribution of Crashes by Weather Conditions 36
Figure 4-1: Site Location and Topographic Map 38
Figure 4-2: Wetlands and Surface Waters 39
Figure 4-3: FEMA Floodplains 42
Figure 4-4: Threatened and Endangered Species 44
Figure 4-5: Cultural and Historic Resources 46
Figure 4-6: Hazardous Materials 47
Figure 5-1: TAZ Map 51
Figure 5-2: Population by Census Tract 52
Figure 5-3: Population of Market Area and James City County 52
Figure 5-4: Market Area Census Boundaries 53
Figure 5-5: Total Employment by Year 54
Figure 5-6: Future (2034) Peak Hour Turning Movement Counts and Average Daily Traffic Volumes (Intersections A –H) 59
Figure 5-7: Future (2034) Peak Hour Turning Movement Counts and Average Weekday Traffic Volumes (Intersections I – P) 60
Figure 9-1: Preferred Alternative Typical Section 76



List of Tables

Table 2-1: Project Advisory Committee (PAC) Members 10
Table 2-2: Technical Advisory Team (TAT) Members 10
Table 3-1: HCM Arterial Classification II – LOS Criteria 25
Table 3-2: 2013 Existing Arterial Level of Service – Eastbound Longhill Road 26
Table 3-3: 2013 Existing Arterial Level of Service – Westbound Longhill Road 26
Table 3-4: Signalized and Unsignalized Intersection HCM LOS Criteria 26
Table 3-5: Route 199 WB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection A) 27
Table 3-6: Route 199 EB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection B) 27
Table 3-7: Williamsburg W. Drive/Lane Place and Longhill Road Signalized Intersection LOS (Intersection C) 27
Table 3-8: Olde Towne Road and Longhill Road Signalized Intersection LOS (Intersection E) 27
Table 3-9: Centerville Road and Longhill Road Signalized Intersection LOS (Intersection N) 27
Table 3-10: Williamsburg Plantation and Longhill Road Unsignalized Intersection LOS (Intersection D) 28
Table 3-11: Buford Road and Longhill Road Unsignalized Intersection LOS (Intersection F) 28
Table 3-12: Lafayette Boulevard and Longhill Road Unsignalized Intersection LOS (Intersection G) 28
Table 3-13: Sheffield Road and Longhill Road Unsignalized Intersection LOS (Intersection H) 28
Table 3-14: Season's Trace and Longhill Road Unsignalized Intersection LOS (Intersection I) 29
Table 3-15: Lafayette High School Entrance and Longhill Road Unsignalized 29
Table 3-16: Lafayette High School Bus Loop and Longhill Road Unsignalized 29
Table 3-17: Warhill Trail and Longhill Road Unsignalized Intersection LOS (Intersection L) 29
Table 3-18: Ford's Colony Drive and Longhill Road Unsignalized Intersection LOS (Intersection M) 30
Table 3-19: Crash Summary for Longhill Road 2010 to 2012 34
Table 4-1: DHR Identified Sites 45
Table 4-2: Hazardous Materials Generators 45
Table 4-3: Sites of Interest 48
Table 5-1: VDOT Historical Annual Average Growth Rate 49
Table 5-2: Travel Demand Model Traffic Projections 49
Table 5-3: James City County Traffic Analysis Zone Socio-Economic Data 50
Table 5-4: Anticipated Developments 50
Table 5-5: Population Changes in Market Area and James City County 54
Table 5-6: Employment Share by Market Industry Sector 55
Table 5-7: Historic Residential Population 55
Table 5-8: Resident Population Projection 55
Table 5-9: Historic Number of Households 56
Table 5-10: Household Projections 56
Table 5-11: Historic Employment 56
Table 5-12: Total Employment Projection 56
Table 5-13: Employment Projection by Sector 56
Table 5-14: Proposed Annualized Growth Rates 57
Table 6-1: 2034 Horizon Arterial Level of Service – Eastbound Longhill Road 63
Table 6-2: 2034 Horizon Arterial Level of Service – Westbound Longhill Road 63
Table 6-3: Signalized and Unsignalized Intersection HCM LOS Criteria 64
Table 6-4: Future (2034) Overall Intersection LOS 64
Table 6-5: Route 199 WB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection A) 65
Table 6-6: Route 199 EB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection B) 65
Table 6-7: Williamsburg W. Drive/Lane Place and Longhill Road Signalized 65
Table 6-8: Olde Towne Road and Longhill Road Signalized Intersection LOS (Intersection E) 65
Table 6-9: Centerville Road and Longhill Road Signalized Intersection LOS (Intersection N) 66
Table 6-10: Williamsburg Plantation and Longhill Road Unsignalized Intersection LOS (Intersection D) 66
Table 6-11: Buford Road and Longhill Road Unsignalized Intersection LOS (Intersection F) 66
Table 6-12: Lafayette Boulevard and Longhill Road Unsignalized Intersection LOS (Intersection G) 66
Table 6-13: Sheffield Road and Longhill Road Unsignalized Intersection LOS (Intersection H) 67
Table 6-14: Season's Trace and Longhill Road Unsignalized Intersection LOS (Intersection I) 67
Table 6-15: Lafayette High School Entrance and Longhill Road Unsignalized 67
Table 6-16: Lafayette High School Bus Loop and Longhill Road Unsignalized 67
Table 6-17: Warhill Trail/Longhill Gate Road and Longhill Road Unsignalized Intersection LOS (Intersection L) 68
Table 6-18: Ford's Colony Drive and Longhill Road Unsignalized Intersection LOS (Intersection M) 68
Table 7-1: Benefits of Corridor Access Management 69
Table 9-1: Short-Term "Recommendations and Action Items" 80
Table 9-2: Phase II "Recommendations and Action Items" 85
Table 9-3: Phase III "Recommendations and Action Items" 89



Chapter 1.0 Executive Summary

The James City County *Longhill Road Corridor Study* provides a comprehensive understanding of the operational and capacity improvements necessary along Longhill Road over the next twenty years to accommodate existing and anticipated future growth and economic vitality within the study area and the County. The study also identifies an implementation or phasing plan for this to realistically occur within the financial confines of the current transportation funding climate. The implementation of system-wide improvements will occur through local policies, programs, and funding as well as federal and state contributions and private investment. The study provides a blueprint for a coordinated approach to defining a transportation network capable of supporting the County's vision of a multi-modal corridor that supports economic vitality, is attractive, and maintains or enhances quality of life attributes residents, business owners, and visitors of the corridor have come to expect.

The report will serve as a beneficial tool to both James City County and VDOT in their discussions with residents, land owners, and potentially developers as they convey future plans and projects for the Longhill Road corridor. This study provides a strategic approach to phases of corridor improvements and lays the groundwork for the County and VDOT to initiate design elements, identify potential right-of-way needs, pursue funding sources, as well as realize realistic stages of implementation. On a much broader scale, the study will ultimately be used as a planning tool by the County and VDOT to manage growth and assess the transportation network impacts created by sub-regional or County level traffic demand influences internally and/or externally to the study area.

The *Longhill Road Corridor Study* examines existing and future conditions for the horizon year of 2034, with the intent of gaining a better understanding of the more immediate needs along the corridor while also establishing a vision for this important multi-modal corridor that is consistent with the priorities and objectives of not only County leadership but that of the local community.

Growth within the study area corridor has been very dynamic over the past twenty years in terms of residential development, the presence of two regional parks, two schools, as well as increases in traffic volumes stemming from the corridor's role in the County's transportation network. This study considered planned and approved growth within the study area (e.g., approved but undeveloped lots in Ford's Colony, Williamsburg Business Center, Warhill Sportsplex Master Plan, Freedom Park Master Plan, etc.). The comprehensive approach to the development of future traffic projections was necessary due to travel pattern behaviors, the anticipated cumulative impact on intersection operations, the need to establish a preferred typical section for the corridor and the ability to capture the operational benefits of the proposed improvements to Longhill Road.

As a result of the field reviews, traffic analyses, policy review, and discussions with the County, project stakeholders, public workshops, public information meetings, and VDOT, recommendations for improvements have been identified within the study area to include; operational and capacity improvements as well as bike and pedestrian improvements, and public transportation improvements along the corridor, that primarily relieve corridor congestion through capacity enhancements, access management strategies, and the encouragement or accommodation of alternative transportation modes. The recommendations were based on the desire to safely and efficiently address future internal and external traffic growth associated with the key study area components (i.e., operational and capacity enhancements along the corridor, overall traffic safety, and bike and pedestrian accommodations).

The primary recommendation of the study involves the widening of Longhill Road between the Route 199 eastbound off/on-ramp intersection in the east to the Centerville Road intersection in the west over the next twenty years. This approximate 3.0 mile corridor as a single project is economically significant in nature and therefore it is not practical under current economic conditions to expect that the construction of the full length of the corridor and the associated improvements would all occur within a relatively short period of one another. Rather, the proposed corridor improvement projects are grouped and/or categorized into short, mid, and long-term phases based on the magnitude of the project (i.e., cost), timing/schedule of when the particular project could be constructed, as well as the scale of the issue a particular project is intended to address. This approach allows communities to prioritize larger scale projects over time while also being able to implement "quick hitter" projects that mitigate immediate needs. The types of projects can often be implemented within six months to two years. Such projects may include: signal timing adjustments, upgrade existing or installation of new pavement markings, installation of new or relocation of existing signage, removal of vegetation along the roadway, installation of traffic calming measures, implementation of access management treatments, pedestrian accommodations at existing signalized intersections, safety enhancements to corridor operations, or installation of new traffic control devices. Please refer to **Chapter 9.0** for a list of the "quick hitter" projects.

Short-term or Phase 1 recommendations are those that are intended to be implemented within two years to seven years. These improvements typically cost less than longer term improvements. However, in the case of this project Phase 1 represents this first segment of the Longhill Road widening effort and will consist of the following types of improvements (e.g., roadway widening, raised/landscaped median, multi-use path, traffic signals, supplemental signage and pavement markings, etc.). The Phase I improvements include, but are not limited to the following:

- Widening of Longhill Road from a 2-lane undivided roadway to a 4-lane divided roadway beginning in the east in the immediate vicinity of Williamsburg W. Drive/Lane Place Drive intersection and continuing west to location in the vicinity of New Point Road (approximately 600 feet west of Olde Towne Road intersection) to include; 10-foot multi-use path along the north side, pedestrian crosswalks/accommodations, street lighting, relocation of overhead utilities, and bus pull-out areas for public transit pick-up/drop-off operations
- Traffic signal timing phasing and timing/coordination improvements (Route 199 EB/WB Off/On-Ramp intersections, Williamsburg W Drive/Lane Place Drive, Olde Towne Road intersections)
- Upgrade/replace traffic signal (Williamsburg W Drive/Lane Place Drive at Longhill Road)
- Upgrade traffic signal (Olde Towne Road at Longhill Road) based on widening and laneage changes
- Install Signal System Wireless Interconnection along the Longhill Road corridor
- Access management improvements with Longhill Road widening
- Construction of roundabout at the intersection of Williamsburg Plantation Drive and Longhill Road
- Turn-lane/partial access improvements at the intersections of King of Glory Lutheran Church Entrance Driveway, Wellspring United Methodist Entrance Driveway, Olde Towne Shopping Center Entrance Driveway, and New Point Road.

Mid-term or Phase II recommendations are those that are intended to be implemented within seven to fifteen years, which will range from relatively low cost to several million dollars. Mid-term improvements have been identified that include, but are not limited to the following:

- Widening of Longhill Road from a 2-lane undivided roadway to a 4-lane divided roadway beginning in the east in the immediate vicinity of the New Point Road intersection and continuing west to location in the vicinity of Warhill Trail/Longhill Gate Road (approximately 1,000 feet west of the Warhill Trail intersection) to include; 10-foot multi-use path along the north side, pedestrian crosswalks/accommodations, street lighting, relocation of overhead utilities, and bus pull-out areas for public transit pick-up/drop-off operations.
- Install a new traffic signal (Season's Trace at Longhill Road)
- Install a new traffic signal (Warhill Trail/Longhill Gate Road at Longhill Road)
- Install Signal System Wireless Interconnection along the Longhill Road corridor
- Access management improvements with Longhill Road widening
- Turn-lane/partial access improvements at the intersections of Glenburnie Road, Lafayette Boulevard, Buford Road, Sheffield Road, Woods of Williamsburg Access Driveway, War Hill Inn Bed and Breakfast, Lafayette High School Entrance Driveway, Lafayette High School Bus Loop/Christian Life Center Driveway.

Long-term or Phase III recommendations are those that are intended to be implemented within fifteen to twenty-plus years. These long-term recommendations can range in cost and magnitude, but are typically higher in cost and larger in scale, involving major construction and right-of-way acquisition. The Phase III improvements include, but are not limited to the following:

Widening of Longhill Road from a 2-lane undivided roadway to a 4-lane divided roadway beginning in the east in the immediate vicinity of the Williamsburg Montessori School site driveway intersection and continuing west to the Centerville Road intersection) to include; 10-foot multi-use path along the north side of the roadway but then shifting to the south side of the roadway at the Ford's Colony Drive intersection, pedestrian crosswalks/accommodations, street lighting, relocation of overhead utilities, and bus pull-out areas for public transit pick-up/drop-off operations.

- Relocate approximately 2,000 feet of the Longhill Road Corridor be approximately 400 feet north of the current Longhill Road alignment.
- Construct approaches to connect "Old Longhill Road" (the segment being bypassed by new construction) to the relocated corridor.
- Reconstruct "Old Longhill Road" as two-lane collector street
    - Two 12-foot travel lanes
    - Curb and gutter
    - 5-foot sidewalk along one side of roadway
    - Posted speed limit of 25 mph
- Upgrade/replace traffic signal (Centerville Road at Longhill Road)
- Install Signal System Wireless Interconnection along the Longhill Road corridor
- Access management improvements with Longhill Road widening
- Turn-lane/partial access improvements at the intersections of Longhill Grove Apartment Entrance Driveway.

Additionally there are recommendations that consist of recommended ongoing/cyclic activities, policies, and procedures. These ongoing recommendations include the following:

- Closing/modifying access points and consolidating commercial and residential driveways as site plan approval, rezoning approval, and special use permits are given.
- Routinely clearing vegetation that blocks sign visibility, especially on minor street approaches.
- Retiming all traffic signals along the corridor on a regular schedule at 3 to 5 year intervals once all signals along the Longhill Road corridor are interconnected.
- Installation of pedestrian displays and pedestrian crosswalk push buttons at signalized intersections

Project specific recommendations focus on operational, capacity, and safety improvements within the study area. Planning-level cost estimates, expressed in year 2014 dollars, have been included for all recommendations. These planning-level cost estimates have been based on VDOT's statewide four-year cost averages for 2009, the VDOT Transportation & Mobility Planning Division's (TMPD) "Statewide Planning Level Cost Estimates" worksheet from 2006, as well as familiarity with similar project and improvement costs throughout Virginia. Due to fluctuations in the costs of labor, materials, and equipment, variability in the market and the outcome of competitive bidding, and the general planning-level nature of the recommendations, these estimated costs are neither exact nor guaranteed.

Variation between actual and estimated costs will change as time passes, and the time value of money has not been taken into account. Cost estimations performed using the "Statewide Planning Level Cost Estimates" worksheet include right-of-way acquisition cost estimates developed with the sheet's methodology. Variation between actual and estimated costs will change as time passes, and the time value of money has not been taken into account. Cost estimations performed using the "Statewide Planning Level Cost Estimates" worksheet include right-of-way acquisition cost estimates developed with the sheet's methodology. The stormwater collection and conveyance cost estimates included in this report assume the use of standard VDOT design specifications for roadway drainage including the use of concrete curb and gutter and concrete pipe for conveying stormwater to the treatment locations. The costs for specific stormwater management features are not included in this corridor study because of the large variability in the type of stormwater treatment facilities contained in the Virginia Stormwater Management Clearinghouse and the uncertainty in the amount of additional right of way that the County may need to purchase to accommodate such features. Overall stormwater management costs will ultimately be dictated by the combination and number of total number of stormwater management measures determined necessary as a part of the roadway design.

The cost breakdown per scenario includes engineering/design costs, roadway/intersection improvement costs (e.g., cost per mile for a particular roadway typical section, turn-lane improvements, roundabout, bridges/box culverts, milling, overlay, sidewalks, multi-use paths, channelization, stormwater collection and conveyance, landscaping (e.g., trees, seeding), etc.), traffic signal equipment improvement costs (e.g., poles, mast arms, signal heads, pedestrian signal head equipment and construction), construction engineering and inspection (CEI) costs, right-of-way (ROW) acquisition, and utility relocation costs as well as miscellaneous costs which includes, mobilization, sediment and erosion control, traffic control (i.e., maintenance of traffic (MOT) during construction). Furthermore, a 10 percent contingency was applied to construction cost. Lastly, estimated dollars were rounded to the nearest $1,000.

Chapter 9.0 reflects the cost estimates for those projects that fall within a particular time frame (i.e., short term, mid-term, long term or Phase I, Phase II, and Phase III). **Table 9-1** through **Table 9-3** provides recommendations and action times for improvements to include general project description, overall cost estimate, general timeframe for implementation, and likely responsible parties. The study outlines the long-term vision for the corridor and its associated transportation network needs. The intent is to now use the vision as projects emerge, whether small or large, public or private, to ensure that the ultimate overarching desires and needs of the corridor study area are achieved. Each project should be evaluated against the overall *Longhill Road Corridor Study* to determine specifically how it can best contribute towards realizing the vision.

The next key step in the planning process is to determine how the recommended improvements will be implemented. Both James City County and VDOT officials will need to determine implementation strategies as well as establish project priorities. Implementation strategies to consider include seeking and identifying funding streams, both public and private, to construct improvements. There are several potential public programs that may assist with funding projects. At the federal level there are earmarks, National Highway System funds, Congestion Mitigation Air Quality (CMAQ) funds, bridge funds, Regional Surface Transportation Program (RSTP) funds, Highway Safety Improvement Program (HSIP) funds, and Transportation Alternatives Program (TAP) funds, to name a few. At the state level there is the VDOT six-year improvement program (SYIP) can help define what alternative funding sources the project may qualify for such as; the Recreational Access Program, the Economic Development Access Program, or the Revenue Sharing Program.

At the local level, James City County is a member of the Hampton Roads Transportation Planning Organization (HRTPO) which can assist local planning efforts by providing services and guidance on funding strategies/coordination with VDOT. Private funds may be realized through rezoning action and proffer contributions, as well as dedication of right-of-way. All the referenced funding programs and strategies require some portion of commitment and/or match at the local level but serve as a means for communities to increase the effectiveness of their budgetary dollars toward priority projects. One source of local match funding could be the inclusion of specific transportation-match funds in the County's Capital Improvement Program (CIP), or another dedicated local fund. All of these programs should be considered for each recommended improvement as outlined in the report. It is recommended that proposed improvements be prioritized into projects with both County and VDOT input. Each project should be thoroughly evaluated then identified for priority order, time frame from implementation, and potential funding sources.



Chapter 2.0 Introduction

Section 2.1 Guiding Principles

The consultant team worked with James City County, VDOT, key stakeholders, and members of the public to create a set of guiding principles that would support, encourage, and implement the community's corridor vision. Longhill Road is an essential corridor that connects residents with significant places within their community; therefore, design improvements to the corridor should:

- Respect the context of the area,
- enhance safety for all users,
- respond to existing and projected traffic volumes,
- be visually appealing, and
- minimize impacts to natural and built environments.

Section 2.2 Corridor Limits and Study Area

The corridor limits for the Longhill Road Corridor Study is in the immediate vicinity (i.e., 0.25 miles north and south) of the Centerville Road (State Route 614) and Longhill Road (State Route 612) signalized intersection and continue east along Longhill Road to the Humelsine Parkway (State Route 199) interchange which includes the eastbound and westbound on/off-ramps. The corridor study will also include segments of Ford's Colony Drive, Warhill Trail, Season's Trace, Olde Towne Road, and Williamsburg West Drive. The study area covers a distance of approximately 3.1 miles along Longhill Road. The corridor limits and study area is illustrated in **Figure 2-1**.

Within the study area, the key intersections include the following:

A. Route 199 WB Off/On-Ramp and Longhill Road – Signalized
B. Route 199 EB Off/On-Ramp and Longhill Road – Signalized
C. Williamsburg West Drive/Lane Place Drive and Longhill Road – Signalized
D. Williamsburg Plantation and Longhill Road – Unsignalized
E. Olde Towne Road (State Route 658)/Devon Road and Longhill Road – Signalized
F. Buford Road and Longhill Road – Unsignalized
G. Lafayette Boulevard and Longhill Road – Unsignalized
H. Sheffield Road and Longhill Road – Unsignalized
I. Season's Trace and Longhill Road – Unsignalized
J. Lafayette High School Entrance Driveway and Longhill Road – Unsignalized
K. Lafayette High School Bus Loop/Christian Life Center Driveway and Longhill Road – Unsignalized
L. Warhill Trail/Longhill Gate Drive and Longhill Road – Unsignalized
M. Ford's Colony Drive and Longhill Road – Unsignalized
N. Centerville Road (State Route 614) and Longhill Road (State Route 612) – Signalized

Study area roadways and intersections were identified during conversations with VDOT and James City County personnel. The study area intersections are illustrated in **Figure 2-1**. In addition to these intersections, there are numerous paved public and private driveways along the study corridor.

Section 2.3 Study Purpose

The key objective of the Longhill Road Corridor Study is to serve as a planning level document that includes a technical review and analysis of the study area corridor, as well as proposed transportation improvements. The study will be used for three (3) purposes: 1) as a planning tool used by James City County and VDOT to identify operational and capacity improvements necessary to accommodate anticipated growth, corridor safety measures, and economic vitality along the study area corridor; 2) use by James City County to manage growth and periodically assess the transportation network impacts created by regional influences internal and external to the corridor limits; and 3) determine future planning activities, corridor transportation policies (e.g. access management strategies) and levels of funding needed to support the proposed improvements.



Longhill Road Corridor Study

James City County

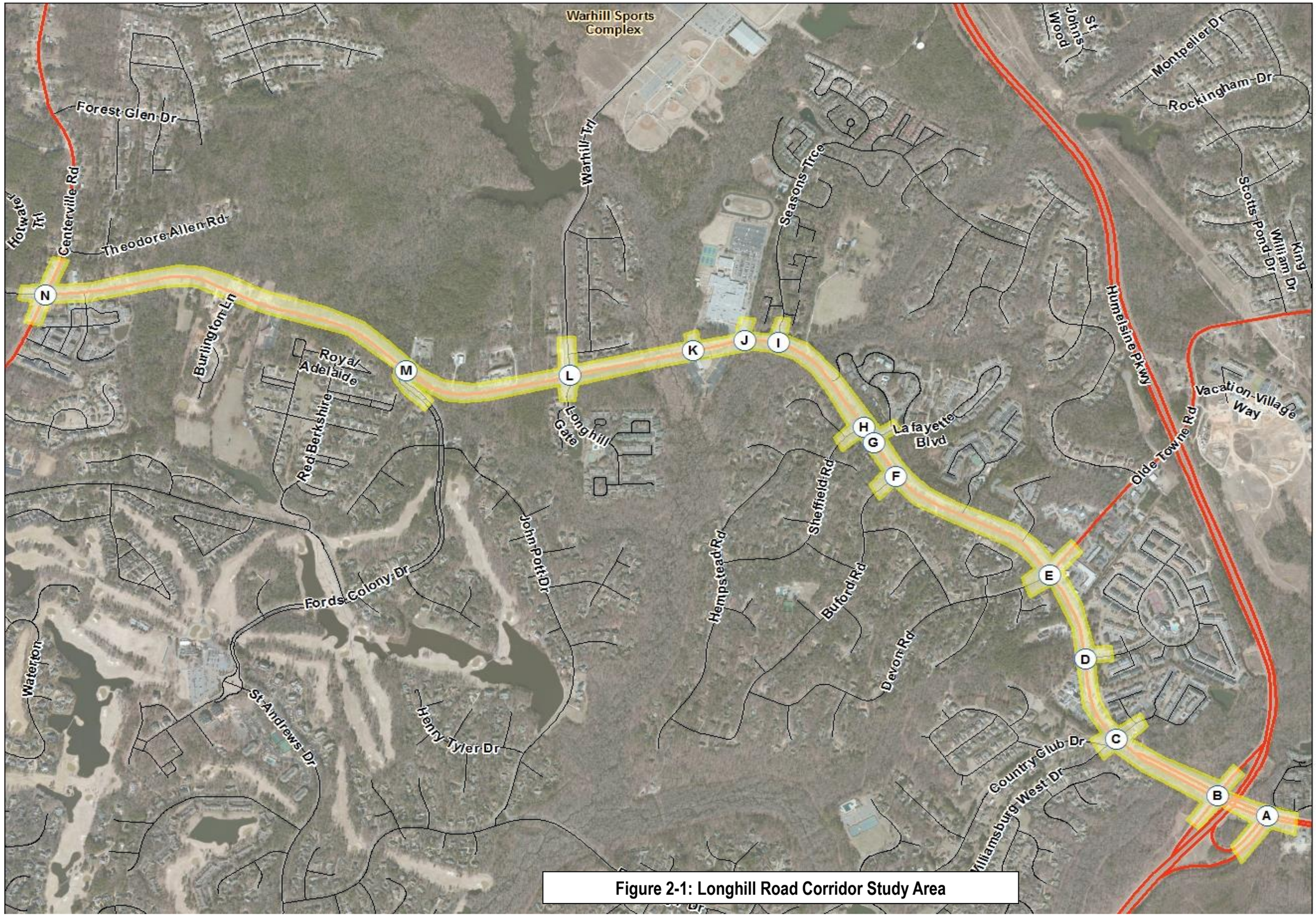


Figure 2-1: Longhill Road Corridor Study Area

- Study Intersections
- Project Study Area
- Primary Roads
- Secondary Roads

0 360 720 1,440 Feet

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: Source: Esri, DigitalGlobe,



Section 2.4 Public Involvement Process

In order to develop recommendations and conceptual plans for transportation improvements within the study area, several corridor characteristics required identification and review in conjunction with the extensive stakeholder outreach program. Land use, corridor demographics, transit, pedestrian and bicycle facilities, access, traffic, as well as environmental constraints were reviewed to understand the existing conditions and evaluate options for improvement along the corridor. Public and elected officials, project committees, other stakeholders, and citizens within the study area were engaged throughout the entire project process in order to help document existing conditions and develop preferable recommendations.

2.4.1 Project Committees

Two committees were formed for the Longhill Road Corridor Study project: a Public Advisory Committee (PAC) and a Technical Advisory Team (TAT). Both committees played important roles in project decision-making by providing input and guidance throughout the project process.

The PAC provided a broad policy perspective on corridor issues. PAC members included key community and organization representatives that provided a communication link to constituents and their respective groups regarding project progress. The PAC met five times throughout the project process. **Table 2-1** lists the PAC members.

Table 2-1: Project Advisory Committee (PAC) Members

Name	Jurisdiction
Alan Robertson	WJCC Schools
Bob Buckley	Wellspring United Methodist Church
Bobby Hornsby	Williamsburg Business Center
Bonnie Brown	Jolly Pond Vet Clinic
Charlie Ohlinger	Ford's Colony
Darryll Lewis	Virginia Department of Transportation
Ellen Cook	JCC – Planning
Jamie Jackson	Williamsburg Area Transit Authority
Jim Baldridge	King Of Glory Lutheran Church
John Carnifax Jr.	JCC – Parks and Recreation
Kate Sipes	JCC – OED
Ken McKinna	Virginia Department of Transportation
Kevan Danker	Williamsburg Area Transit Authority
Kitty Preston	Historic Triangle Bicycle Advisory Committee
Matt Connolly	King Of Glory Lutheran Church
Nancy Ellis	JCC – Parks and Recreation
Dr. Robert Whitehead	New Zion Baptist Church
Robert Weber, III	Virginia Department of Transportation
Robin Bledsoe	JCC – Planning Commission
Scott Thomas	JCC – Engineering and Resource Protection
Steve Whaley	Season's Trace
Tammy Rosario	JCC – Planning
Ted Moreland	Historic Triangle Bicycle Advisory Committee
Tina Rice	Lafayette Square Apartments
Will Lee	The War Hill Inn Bed and Breakfast

The Technical Advisory Team (TAT) was formed at the beginning of the project to provide technical oversight for the formulation of corridor recommendations and strategies while also representing the issues and priorities of the members' respective organizations. The TAT consisted of representatives from James City County, VDOT and WATA and met three times throughout the project process. **Table 2-2** lists the TAT members.

Table 2-2: Technical Advisory Team (TAT) Members

Name	Organization
Alan Robertson	WJCC Schools
Darryll Lewis	Virginia Department of Transportation
Ellen Cook	JCC – Planning
Jamie Jackson	Williamsburg Area Transit Authority
John Carnifax, Jr	JCC – Parks and Recreation
Luke Vinciguerra	JCC – Planning
Nancy Ellis	JCC – Parks and Recreation
Scott Thomas	JCC – Engineering and Resource Protection
Tammy Rosario	JCC – Planning

2.4.2 Planning Commission and Board of Supervisor Presentations

The project team provided a briefing on the study to the James City County Policy Committee and Board of Supervisors on October 10, 2013 and October 22, 2013, respectively. The purpose of these briefings was to familiarize the Policy Committee and Board members with the study and answer any project related questions. Presentation topics included project history, schedule, study area and existing conditions, public involvement process and priorities, and next steps. The briefing included a summary of the October 2013 public symposium regarding corridor priorities and an opportunity for the Board to provide input prior to the November 2013 public workshop.

On March 13, 2014, the project team provided the Policy Committee with a project update presentation. Presentation topics included a recap of the public involvement process to date, existing and future traffic volume projections, and conceptual renderings of the proposed typical sections for the corridor improvements. The briefing covered the November Public Meeting visual preference survey results and feedback from the two-day February Pubic Workshop. The presentation also discussed the general project status and next steps in the process. Due to a tight schedule, the Board of Supervisors did not receive a formal presentation but were provided with a memorandum covering the same information on project status. This briefing and the associated memorandum were a part of the continued effort to keep county leadership informed about the status of the project.



On May 27, 2014, the project team provided a briefing to the Planning Commission and Board of Supervisors during a joint work session. The presentation provided the group with a reminder of the corridor study's guiding principles, a recap of the extensive public involvement process, and existing and future operational conditions without and with proposed improvements. The presentation addressed the decision to establish one typical section for the corridor in its entirety, the phased implementation of the proposed improvements over the next twenty years, potential funding sources, and next steps in the planning process.

2.4.3 Project Website

A project website was made available at www.LonghillRoadCorridorStudy.com. Information provided on the website included project description and overview, schedule, invitations to upcoming public meetings, summaries of and materials from past meetings, completed documents, a project survey, and contact information. Updates to the website were typically performed prior to and following each public meeting by James City County staff with supporting documents provided by the consultant team. Citizens and stakeholders who signed up for updates through the website periodically received project emails.

2.4.4 Public Involvement

As previously mentioned, the planning process included an extensive stakeholder and public outreach program in order to be rooted in a public involvement platform that gathered, processed, and applied a diversity of opinions from the corridor's residents, business owners, and civic groups. The intended outcome of the public involvement efforts was for stakeholders to feel satisfied with their participation in the effort and to have assisted the County in creating a project that meets the overall purpose. It was important that the public feel positive about their contribution and feel ownership in the project that will last through subsequent phases. This was accomplished through a variety of techniques as described below.

2.4.4.1 Stakeholder Interviews

Early in the public outreach process, James City County and VDOT identified several key stakeholders to conduct interviews with to gather information relative to their relationship to the corridor, typical travel patterns along the corridor, and opinions of current and future corridor operations as well as areas of concern. The results of the stakeholder interviews are included in **Appendix B**.

2.4.4.2 Public Meeting #1 (Project Symposium) – October 2013

The first opportunity for public engagement occurred in the form of a project symposium held on October 3, 2013 from 7:00 PM to 9:00 PM at the James City County Community Center located at 5301 Longhill Road. The purpose of this symposium was to offer participants an interactive forum where they could exchange ideas and collaborate. This meeting was conducted in a workshop style with six planning themed presentations given on Safety, Traffic, Bicycles and Pedestrians, Neighborhoods, the Environment, and Development Trends at the beginning followed by a break out session of smaller groups for discussion and activities. Over 75 stakeholders from throughout the study area participated in the provoking exercises designed to identify the citizen's top priorities, concerns, and preferences moving forward.



Safety Presentation



Development Trends Presentation

The symposium consisted of two individual and two group activities to solicit citizen input on the future vision of the Longhill Road Corridor including: Planning Questionnaire, Thought Wall, Priority Decision Tree, and Build-A-Street.

The Planning Questionnaire exercise was based on a two-page questionnaire handed out at the beginning of the symposium for each participant to complete individually. The questionnaire consisted of nine questions pertaining to the citizen's opinions of how the corridor currently operates and what improvements would they make along the corridor in the future. In addition to the hard copies provided at the symposium, the questionnaire was posted on the project website for those citizens not in attendance. **Appendix B** includes the questions and results from the Planning Questionnaire.

After the Planning Theme presentations, participants were given four colored sheets (two salmon and two yellow) and asked to identify their top priorities or concerns. Each participant expressed their opinion on these sheets (salmon color for their top priority/concern and yellow for a high priority/concern) and posted them on the "Thought Wall" under the following project themes: Safety, Traffic, Bicycles and Pedestrians, Neighborhoods, the Environment, and Development Trends. The results were then stacked from the floor-up to depict a large scale histogram representing the frequency of priority votes for each theme. Based on a weighted scoring system, the top three planning themes were Bicycles and Pedestrians, Safety, and Traffic with Safety having the most top priority votes (salmon colored).The resulting histogram is illustrated in **Figure 2-2**. It is noted that early in the public involvement process (i.e., project advisory committee meetings, stakeholder interviews, and project symposium) two key desires of the community quickly came to the forefront (i.e., bike and pedestrian accommodations and safety). Much of this was voiced by an older more active population intent on maintaining their independence, their mobility, and wanting this in a safe environment along the corridor. Not only was this population group concerned about ensuring these needs were addressed for themselves, but often times they voiced the opinion that these improvements were needed for the many school age children that walk or bike along the corridor today. Both user groups needed a safe and easily accessible facility along the corridor to meet their mobility needs.



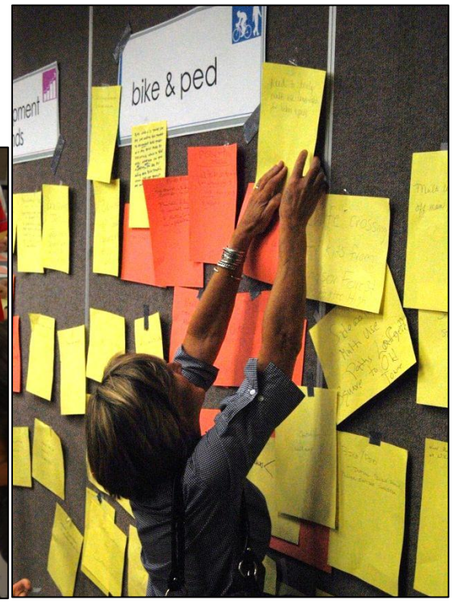
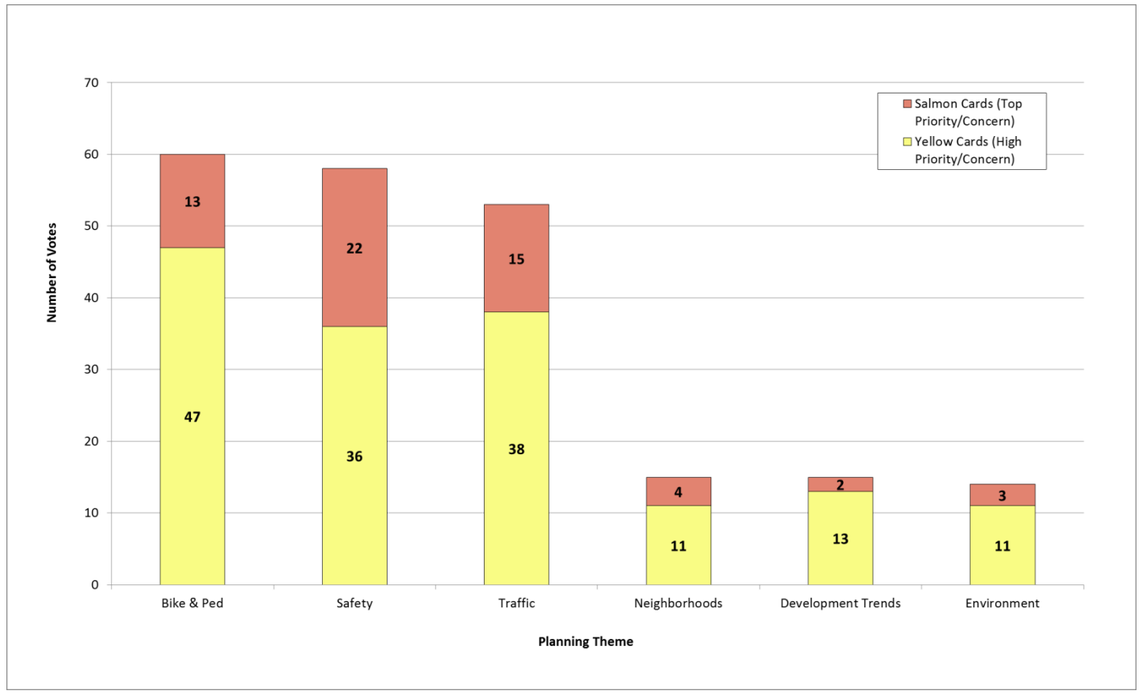






Figure 2-2: Thought Wall Results



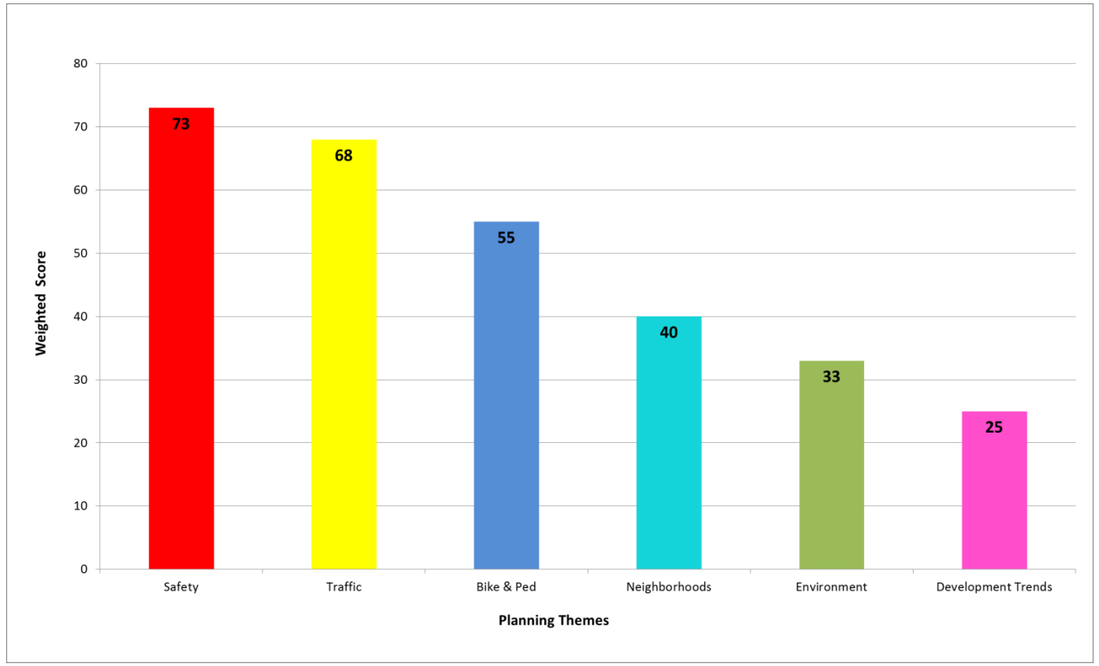
The next exercise represented a group effort to examine the same six planning themes, priorities, and concerns as the previous "Thought Wall" activity. Each table was given six colored placards with the planning themes to place on a vertical stem and base with the placards ordered by importance from top to bottom. The result was a "Priority Decision Tree" where the different groups examined trade-offs and negotiated individual perspectives for one group product. Similar to the "Thought Wall" exercise, Safety, Traffic, and Bicycles and Pedestrians were the top three planning themes with Safety claiming the majority top priority votes. **Figure 2-3** illustrates the results of the Priority Decision Tree.







Figure 2-3: Priority Decision Tree Results



The final exercise of the symposium, "Build-A-Street", entailed a group effort to identify an ideal roadway cross-section for the Longhill Road Corridor. Each group was presented with a toolbox of common corridor elements such as primary travel lanes, medians, sidewalks, street trees, bike lanes, multi-use paths, etc. and tasked with working together to negotiate the trade-offs between right-of-way (ROW) and desired corridor elements. Some of the groups went beyond the task given by developing desired cross-sections for different segments of the corridor (i.e. a cross-section between Centerville Road and Olde Towne Road and a cross-section between Olde Towne Road and Route 199). **Figure 2-4** displays the results of the Build-A-Street exercise. **Appendix B** of this report contains a Symposium Summary Brochure that captures the key elements of the vital initial public involvement meeting.

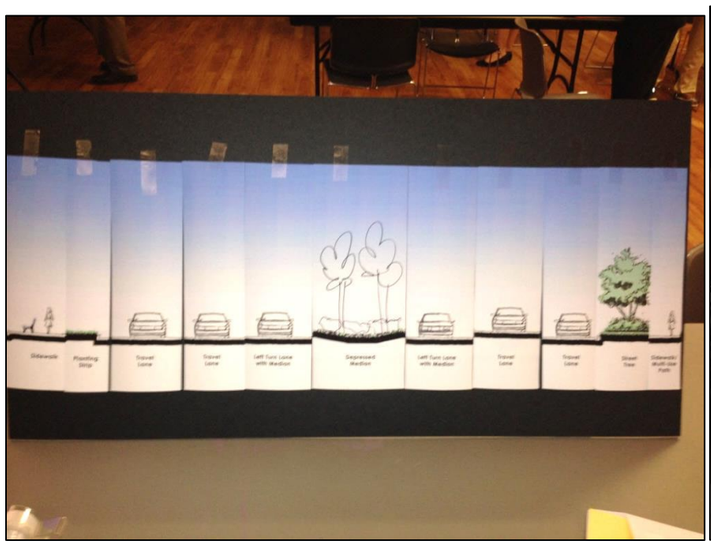




Figure 2-4: Build-A-Street Results

Table	# of Lanes	Left Turn Lane(s)	Median	Bike Lane(s)	Street Tree(s)	Planting Strip(s)	Shoulder	Multiuse Path(s)	Sidewalk(s)	Wild Card
1	4	X - 2	X - depressed with trees	-	X - 1	X - 1	-	X - 1	X - 1	-
2	4	X - 2way	-	X - 2	-	-	X - 2	X - 1	-	-
3	4	X - 2way where necessary	X - 1 where necessary	-	-	X - 1	X - 1	X - 1	-	-
4	4	X - 2way	-	X - 2 wide outside lanes	-	-	X - 2	-	-	-
5	4	X - 1 where necessary	-	-	-	-	X - 2 with street lights at intersections	X - 1	-	-
6	2	-	-	X - 1	X - 2	X - 1	-	X - 1	-	Stoplight at WISC/ Longhill Gate Intersection & occasional benches along multiuse path
7	2	X - 2way	-	X - 1	-	-	X - 2	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
8	2	X - 1 where necessary	X - planted median with curb & gutter	X - 2	X - 2	-	-	X - 1	-	Bus stop pull-offs with shelters
9	2	X - 1 where necessary	X - 1 where necessary	X - 1	X - 2 without curb & gutter	-	X - 1	X - 1	-	-
10	2	X - 2way	-	X - 2	X - 2	-	X - 2	-	X - 1	-
11	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-
12	2	X - 2way	-	-	X - 2	-	-	X - 1	X - 1 with ped lighting	Bus stop pull-offs with shelters
13 - 199 to Olde Towne	4	-	X - depressed	-	-	X - 1	-	X - 1	-	-
13 - Olde Towne to Centerville	2	X - 1 where necessary	X - 1 where necessary	X - 1	-	-	X - 2	-	X - 1	-
14 - 199 to Olde Towne	4	X - 1 where necessary	X - 1 where necessary	-	-	X - 1	-	X - 1	-	-
14 - Olde Towne to Centerville	2	X - 2way	-	-	-	X - 1	-	X - 1	-	-

2.4.4.3 Public Meeting #2 – November 2013

The second hands-on opportunity for public engagement was a public workshop held on November 21, 2013, from 7:00 P.M. to 9:00 P.M. at King of Glory Lutheran Church, 4897 Longhill Road. The purpose of the workshop was to present results from the October symposium on corridor priorities, review the draft vision statement, and learn about existing conditions and options to address them. About 50 people participated in the workshop. Meeting materials also were made available on the project website for those who were unable to attend in person.

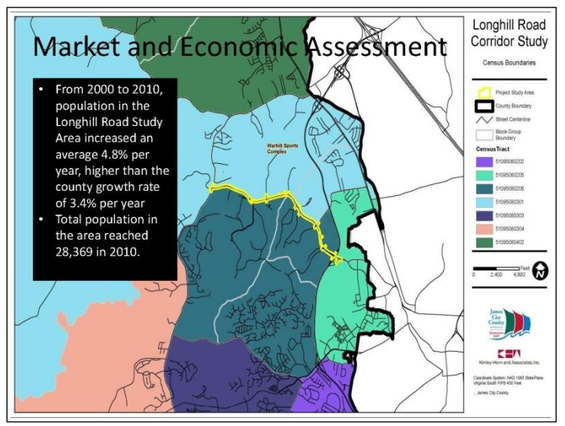
Existing Conditions

The workshop began with a presentation summarizing existing conditions on Longhill Road and the adjacent study area. The purpose of the presentation was to share information with audience members regarding fundamental issues that are driving change on the corridor and potential solutions to address them. The presentation included the following topics:

- Results of the October project symposium regarding corridor priorities
- Population and employment growth trends
- Existing traffic volumes and forecast growth

Strategies to improve traffic safety and operations as population and traffic grow in the corridor. Strategies addressed include driveway changes including shared access; center medians and median openings; traffic signals and traffic signal coordination; freeway interchanges; and increased connectivity on the street network.

This background information prepared meeting attendees for active participation in the visual preference survey.



Population Growth Trends



Safety and Operations Tools



Visual Preference Survey

The workshop used a visual preference survey to educate participants about corridor issues and solicit input on preferences for potential design treatments. Participants were presented with a series of photographs and asked to identify those that were most appropriate to Longhill Road and most visually appealing. The preference survey addressed the following topics:

- Safety: Roadway cross-sections, intersection treatments, signalized intersections, roadway edge treatments, street signs, and lighting
- Bicycle and Pedestrian Issues: user profiles and user types, bicycle and pedestrian facilities pedestrian safety and signage, crosswalks, and signals
- Aesthetics: landscaping, lighting, intersection treatments, and street signs
- Traffic Operations: roadway cross-sections and intersection treatments

During the presentation, participants held up paddles marked with an "A," "B," "C," or "D" to indicate which of four versions of each feature they thought were most appropriate for Longhill Road. After the paddle voting, participants used stickers to indicate which features they thought were most visually appealing.

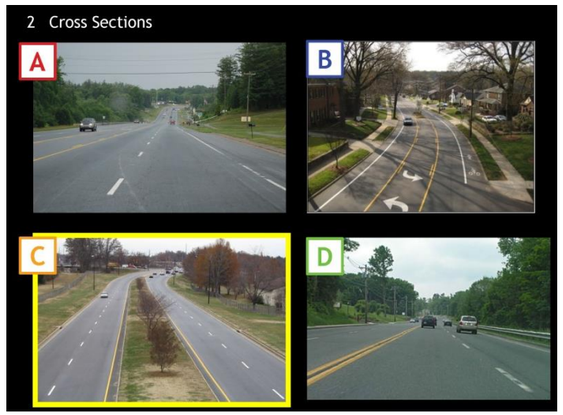


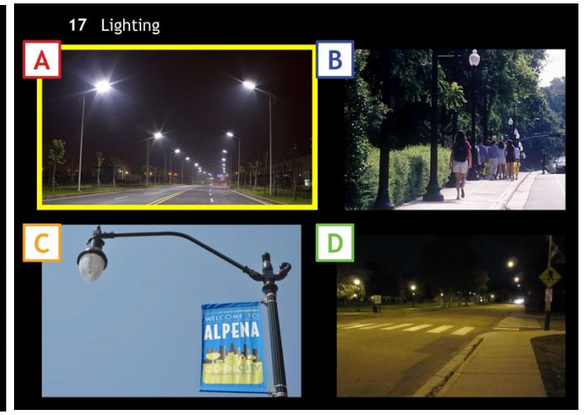
Paddle Voting - Visual Preference Survey

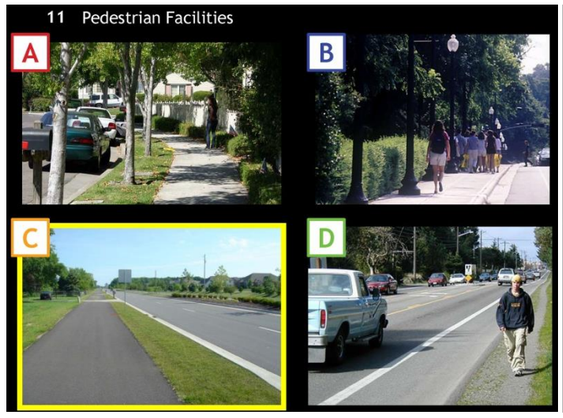


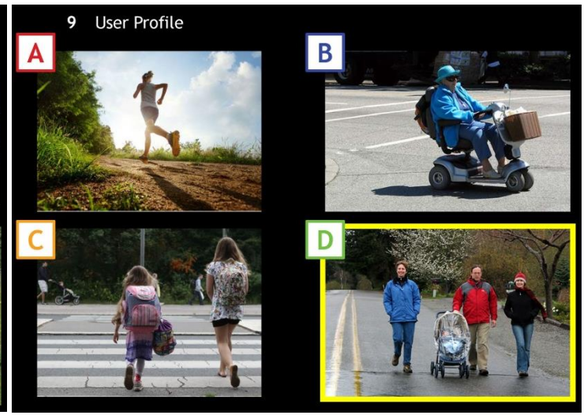
Dot Voting – Aesthetic Preferences

The following images reflect examples of the topics and options that were presented to the members of the audience at the meeting. For these images the public was asked to vote on the preferred typical section of the roadway, lighting for the roadway, pedestrian/bicycle facilities, and the general user group of these accommodations along the corridor. The images with a yellow band around them reflect the preferences of community from this exercise. Additional results from the Visual Preference Survey are attached in **Appendix B** of this report.











2.4.4.4 Public Meeting #3 – February 2014

In February 2014, a two-day public meeting was held at Lafayette High School, 4460 Longhill Road. The first meeting of the two-day event was held on February 19, 2014 from 6:30 P.M. to 9:00 P.M. and consisted of an open house format with a brief presentation followed by a comment session for the public to review the potential improvements to the corridor. The presentation outlined the following topics:

- Overview, how we got to where we are – Corridor Guiding Principles



- Results of the visual preference survey (high level)
- Overview of materials/initial design concepts
    - Preferred access plan/connectivity exhibits
    - Recommended cross-sections
    - Landscaping and gateways
    - Specific intersection geometry and traffic control treatment

Once the presentation was finished, the participants were asked to review the project materials that would result in potential revisions to improvements and recommendations along the corridor. Participants were able to write comments on all of the design concepts in order for the project team to capture common themes or concerns relative to the proposed improvements.



Day One: Presentation

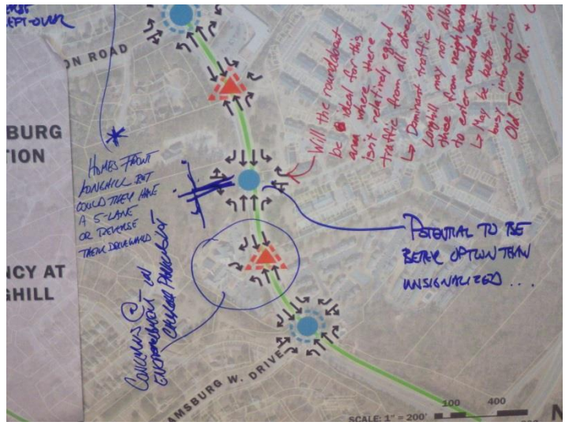


Day One: Participant Comment Session



Day One: Participant Comment Session





Day One: Participant Comments

The second meeting of the two-day public meeting was held on February 20, 2014 from 7:00 P.M. to 9:00 P.M. and consisted of a brief presentation of the evolution of the project and roadway and a summarization of the comments received from the previous meeting as well as the presentation and viewing of the updated conceptual roadway design which included input from the participants and technical committee. At the end of the presentation, participants had one final opportunity to comment on the updated design concept. **Figure 2-5** illustrates the summary of the common comments received that first night and the action plan for these participant comments.

Figure 2-5: Summary of Common Participant Comments

Comment	Action Plan		
	Agree	Consider	Disagree
1. Provide roundabout at Centerville Rd / Longhill Rd			✓
2. Connection from Warhill Sports Complex to Longhill Road.		✓	
3. Install traffic signalization at Warhill Trail and Season's Trace before roadway widening.		✓	
4. Provide a roundabout at Season's Trace.			✓
5. Provide a full movement unsignalized intersection at Glenburnie Road.	✓		
6. Provide a roundabout at Williamsburg West Drive.			✓
7. Provide street lights along corridor.	✓		
8. Provide high visibility crosswalks.	✓		
9. Remove the sidewalk since a multi-use path is provided			✓
10. Modify shared bike lane (either remove or offer dedicated)		✓	





Day Two: Participant Comment Session

2.4.4.5 Public Meeting #4 – May 2014

The final public meeting was held on May 8, 2014 from 6:00 P.M. to 8:00 P.M. at the New Zion Baptist Church, 3991 Longhill Road. This final meeting consisted of a presentation to provide an overview of the project purpose, goals, and progress as well as the final design concepts for the corridor. The final design concepts were representative of the feedback.



Presentation at Final Public Meeting



Renderings of Corridor Recommendations being viewed by Citizens



Chapter 3.0 Existing Conditions

Section 3.1 Existing Land Use

Land use is regulated through James City County ordinances and the Comprehensive Plan. Existing zoning within the corridor is shown in **Figure 3-1, w**hereas **Figure 3-2** reflects the future land use plan for the study area. The Longhill Road corridor consists primarily of residential, institutional (i.e., schools and churches), and parks and recreation land uses. Residential developments consist of a variety of larger single-family detached housing neighborhoods, several individual single-family detached housing residential lots, townhouse/condominium communities, and several multi-family apartment complexes. Institutional land uses include; the Williamsburg Montessori School, Lafayette High School, King of Glory Lutheran Church, Wellspring United Methodist Church, and New Zion Baptist Church. The Warhill Sports Complex and Freedom Park are both regional scale parks, with the Warhill Sports Complex located near the middle of the corridor and Freedom Park located at the western end of the corridor. Commercial/retail land uses are located near the intersection of Longhill Road and Olde Towne Road, with the Olde Towne Square shopping center, 7-Eleven convenience store, and the Citizens and Farmers Bank. Additional commercial development is located at the western end of the corridor in the vicinity of the Centerville Road intersection, with a 7-Eleven convenience store and the Jolly Pond Veterinary Hospital. The Williamsburg Business Center located to the west of Olde Towne Road at New Point Road, and several other smaller office developments behind the Olde Towne Square shopping center Olde Towne Square shopping center represent the office land uses located within the corridor.

Section 3.2 Existing Study Area Roadway Characteristics

Longhill Road (State Route 612) is a predominantly a two-lane undivided facility classified as an urban minor arterial with an east-west alignment. Longhill Road within the study area limits has an interchange with two signalized ramp intersections at Route 199 in the east and terminates at the signalized intersection of Centerville Road in the west. Longhill Road between the Route 199 interchange and the Williamsburg W. Drive/Lane Place Drive signalized intersection is a transitional segment where the roadway goes from 4-lanes to 2-lanes. To the west of the Williamsburg W Drive/Lane Place Drive intersection, exclusive left-turn lanes are provided at the intersections with larger residential development entrances and at the numerous signalized intersections. The speed limit along Longhill Road is posted at 45 mph (miles per hour).

Mature trees align the majority of the corridor serving as a visual and auditory buffer between adjacent residential neighborhoods, churches, and parks and the roadway. Utilities (i.e., power, telephone, cable) are located above ground beginning immediate west of the Williamsburg W Drive/Lane Place Drive signalized intersection and continuing to Centerville Road. The corridor presents some modest horizontal and vertical curvature challenges to the driver as Longhill Road essentially follows the topography of the area (i.e., rolling hills and turns) in an effort maintain an ideal alignment while attempting to avoid or minimize the number of and length of water crossings.

Currently stormwater runoff from Longhill Road is collected in ditches adjacent to the roadway. These ditches often lead to the streams, ponds, and in one instance a development related Best Management Practice (BMPs) (i.e., Season's Trace immediately adjacent to the roadway) located along the corridor to address stormwater treatment. It is noted that there are no designated or VDOT maintained BMPs or drainage basins along the corridor intended to collect and/or treat stormwater runoff from the roadway today.

However, it is anticipated that should the improvement of the roadway go forward, to include widening, is highly probably that water quality control will dictate the use of wet ponds in addition to the use of other low impact design techniques.

Route 199 (Humelsine Parkway) is a four-lane divided interstate/controlled access facility with a north-south alignment. Route 199 provides access to/from Interstate 64 north of the study area as well as additional major highways that serve the Williamsburg attractions. The speed limit is posted at 60 mph.

Olde Towne Road (State Route 658) is a two-lane undivided facility classified as an urban collector which extends from the intersection with Longhill Road and Devon Road in the south to Richmond Road (U.S. Route 60) to the north. The speed limit is posted at 35 mph.

Centerville Road (State Route 614) is a two-lane undivided facility classified as an urban minor arterial which extends from the intersection with John Tyler Highway (State Route 5) in the south to Richmond Road (U.S. Route 60) in the north. The speed limit is posted at 45 mph.

The existing geometry of the study intersections along the corridor is shown in **Figures 3-3** and **3-4**. In addition to intersection geometry, **Figures 3-3** and **3-4** reflect the average weekday daily traffic (AWDT) volumes along the corridor and the AM and PM peak hour turning movement counts. Daily traffic volumes reflect heavier traffic demand in the eastern and central portions of the corridor, particularly in the vicinity of the Route 199 interchange and the segment between Olde Towne Road and the Warhill Sports Complex. Daily traffic volumes taper off fairly quickly west of Fords Colony as the western portion of the corridor is bounded by less intense development and more rural in character.

Peak hour turning movement volumes reflect a relatively distinct directional distribution of traffic along the corridor during the AM and PM peak time periods. During the AM peak hour the predominant direction of travel is eastbound toward the Route 199 interchange. During the PM peak hour the directional distribution of travel is reversed with the prevalent direction of travel being westbound. Some segments experience even more notably defined directional distribution patterns during the PM peak than during the AM peak as a result of more traffic being on the road and a good majority of traffic returning to home to their residential communities during this time of the day.

Section 3.3 Special Traffic Generators

A general description of a special traffic generator is a facility, business, industry, or other land use that generates large amounts of traffic. Some examples include:

- Schools
- Shopping Centers
- Landfills
- Regional Malls, and
- Regional recreational facilities

At least two such land uses and the associated traffic generation characteristics that qualify as special traffic generators (i.e., Lafayette High School and Warhill Sports Complex) are located along the Longhill Road corridor. During the school year Lafayette High School has distinct periods of high traffic volume activity.



During the morning peak students, faculty, staff, and buses are arriving prior to the beginning of the school day between approximately 6:30 and 7:00 AM. While PM peak traffic generation occurs around mid-afternoon with school releasing at 2:20 PM. Although the afternoon release does not conflict or add to traditional evening peak hour traffic characteristics (e.g., 5:00 to 6:00 PM) the volume of traffic leaving the site within such a short period of time creates a notable impact to operations at the intersections immediately adjacent to the high school and along portions of the corridor for approximately 15 to 20 minutes. The influence of this volume of traffic is somewhat further complicated by the mix of traffic leaving the site that includes buses and passenger vehicles as well as driver population which ranges from very experienced to the new teenager driver. Additional special generator type events at the high school that occur after evening peak hours may include; football games or other large sporting events venues, open house or back to school night, marching band competitions, or drama productions.

The Warhill Sports Complex is the other notable special traffic generator along the corridor. The complex has multiple sports fields (i.e., eight baseball fields, six synthetic surface multi-purpose fields and eight multi-purpose grass fields) capable of hosting multiple types of sporting events (i.e., football, baseball, soccer, field hockey, and lacrosse) for recreational leagues during the week, and large regional scale tournaments over weekends drawing numerous teams from outside the area for day long competitions. The scale and quality of the complex make it attractive to both local and out of town teams. During the week numerous teams practice and play games at the facility resulting in steady flows of vehicles beginning to arrive and depart the park as early as the traditional peak hour an often many hours later into the evening. It is noted that the complex closes at 10:00 PM. On weekends during larger two-day tournaments the complex generates traffic beginning as early as 7:00 as teams arrive for early morning games, with periodic spikes in traffic volumes as teams arrive or depart the complex in between games. The peaking or spiking characteristics of traffic arriving to or departing from the park, and its impact on operations along the corridor is similar to that of the high school in that it is often only occurs for a short period of type but is quite disruptive to normal operations during that time period.

The impact to traffic operations and the delay experienced by some motorists during these times is so extension that the Virginia Department of Transportation (VDOT) has considered the installation of traffic signals at the main entrance driveways to both special traffic generators. The installation of traffic signals offers one possible solution to potentially mitigating the adverse impacts created by these sites during special events or simply their unique peak traffic characteristics.

Section 3.4 Existing Traffic Volumes and Characteristics

Existing traffic volumes along a highway corridor are determined by stationing people or automated counting equipment at selected points on the corridor and counting the number of vehicles that pass through that point during a given timeframe. Both automated and human counters can collect data on vehicle classification to distinguish passenger cars, small trucks, and SUVs from heavy vehicles while counting volumes.

Weekday turning movement counts (TMCs) were conducted at the following fourteen intersections within the study area:

1) Route 199 WB Off/On-Ramp and Longhill Road
2) Route 199 WB Off/On-Ramp and Longhill Road
3) Williamsburg West Drive/Lane Place Drive and Longhill Road
4) Williamsburg Plantation and Longhill Road
5) Olde Towne Road/Devon Road and Longhill Road
6) Buford Road and Longhill Road
7) Lafayette Boulevard and Longhill Road
8) Sheffield Road at Longhill Road
9) Season's Trace and Longhill Road
10) Lafayette High School Entrance Driveway and Longhill Road
11) Lafayette High School Bus Loop Driveway/Christian Life Center Driveway and Longhill Road
12) Warhill Trail/Longhill Gate Road and Longhill Road
13) Ford's Colony Drive and Longhill Road
14) Centerville Road and Longhill Road

Of the fourteen study intersections, eight were observed for two hours each during typical weekday AM (6:30 to 8:30) and PM (4:00 to 6:00) peak periods. For the remaining six intersections, data were collected over a twelve-hour period from 7:00 AM to 7:00 PM. Twelve-hour TMC data were provided by VDOT.

Kimley-Horn also collected average weekday daily traffic (AWDT) counts using automated counting tubes at six locations along the Longhill Road corridor and/or within the corridor study area:

1) Longhill Road between Burlington Lane and Ford's Colony Drive
2) Longhill Road between Warhill Trail and the Lafatette High School Bus Loop/Christian Life Center Driveway
3) Longhill Road between Buford Road and Glenburnie Road
4) Longhill Road between Olde Towne Road and Williamsburg Plantation Drive
5) Longhill Road between Williamsburg W. Drive/Lane Place Drive and Route 199 EB Off/On-Ramp
6) Olde Towne Road between Westmoreland Drive and the Route 199 Overpass Bridge

The AM and PM peak period TMCs for each intersection and the AWDT volumes are shown in **Figures 3-3 and 3-4.** Detailed count data are provided in the **Appendix A** of this report.



Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: James City County

Figure 3-1: Study Area Existing Zoning



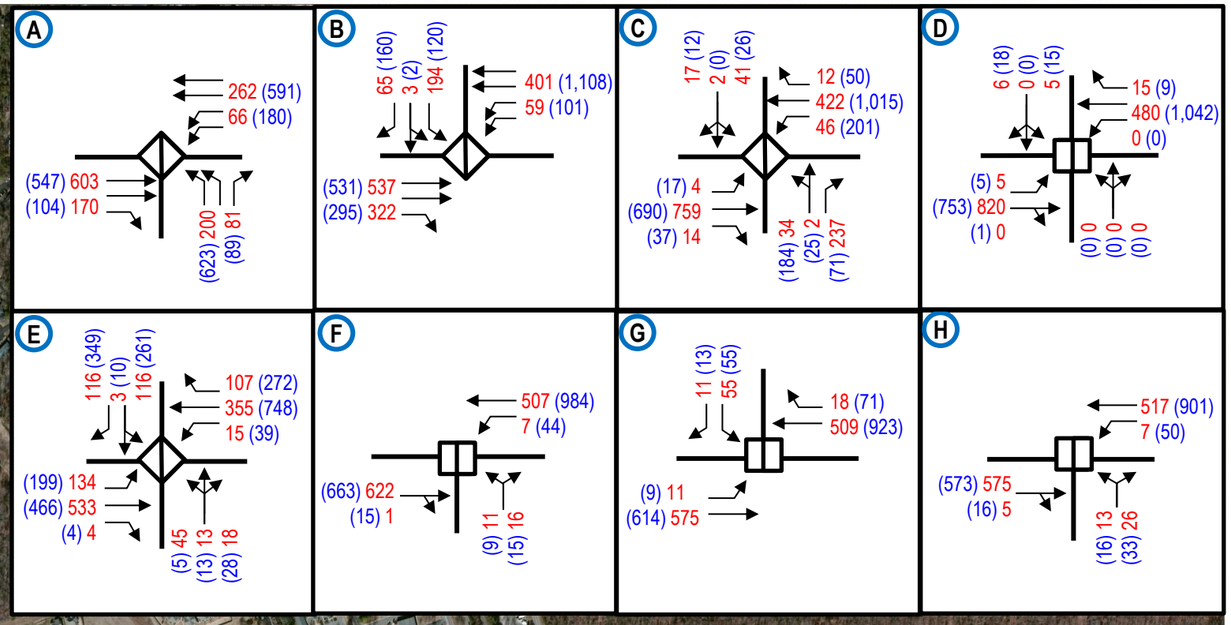
Figure 3-2: Study Area Future Land Use Map



Longhill Road Corridor Study

James City County





Legend

- Signalized Intersection
- Unsignalized Intersection
- XX (XX) AM (PM) Approach Volumes
- XXXX Average Weekday Daily Traffic Volume (vpd)

Figure 3-3: Existing (2013) Peak Hour Turning Movement Counts and Average Weekday Daily Traffic Volumes

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



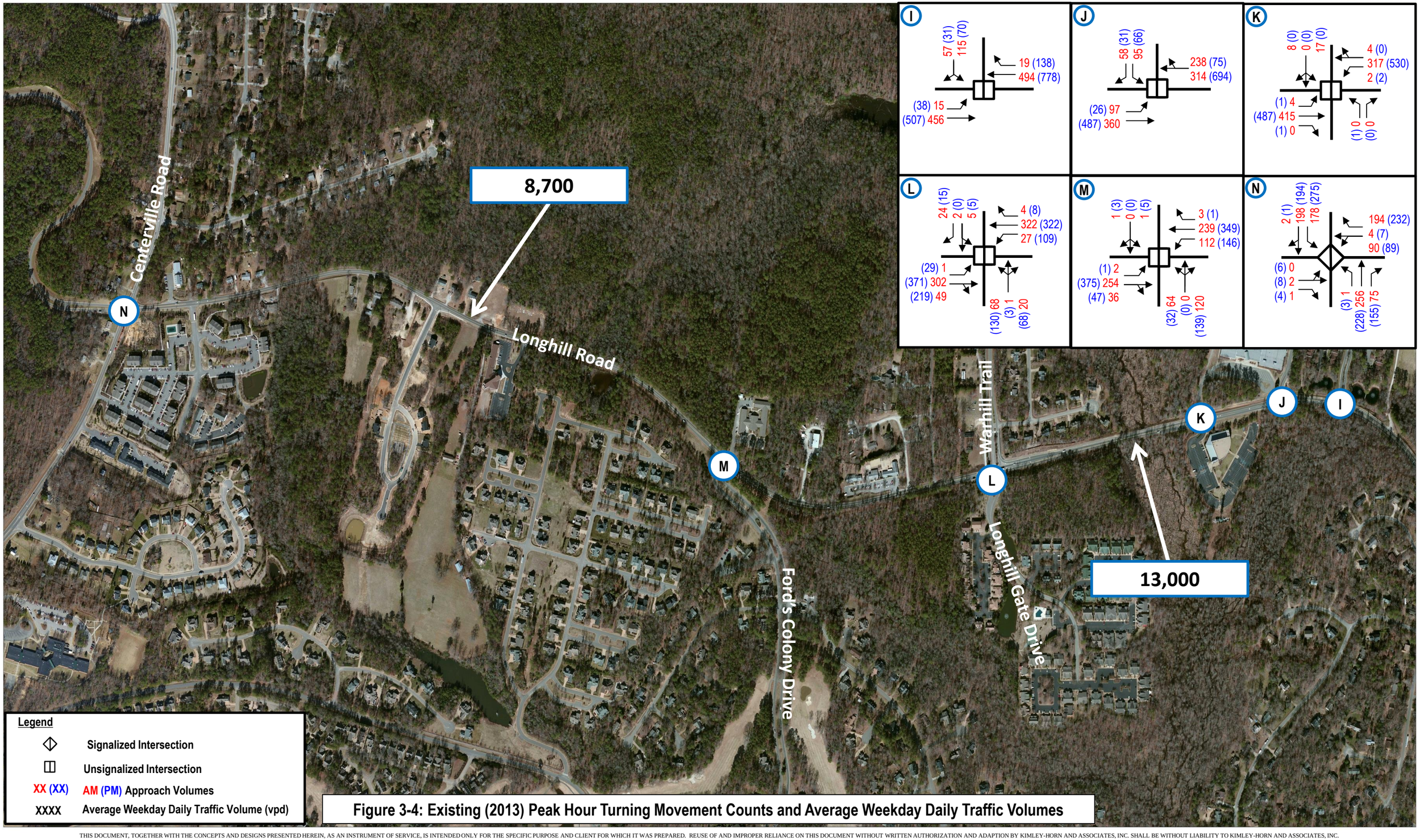


Figure 3-4: Existing (2013) Peak Hour Turning Movement Counts and Average Weekday Daily Traffic Volumes

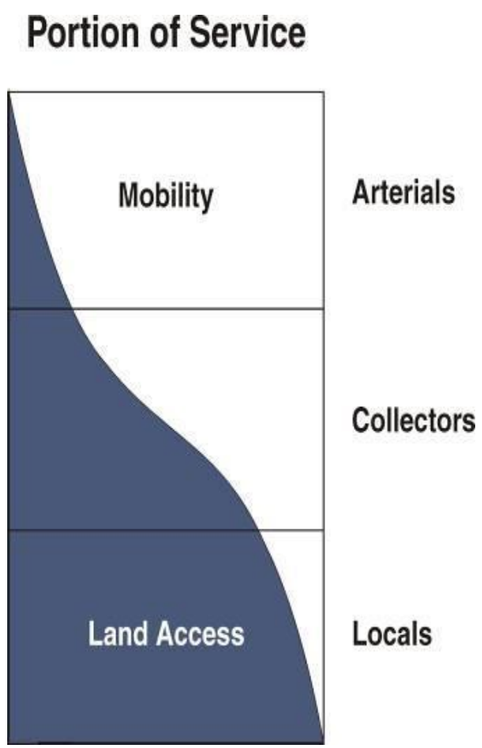
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



Section 3.5 Functional Classification

The classification of streets into several "functional" categories aids in communication among policy makers, planners, engineers, and citizens for expanding the transportation system. The functional classification system groups streets according to the land use served (or to be served) and provides a general designation of the type of traffic each street is intended to serve. The street functional classification system primarily defines the street in terms of roadway design and character, as well as operational features for the movement of vehicles.

Two major considerations for classifying arterials from neighborhood streets are access and mobility. The primary function of local or neighborhood streets is to provide access. These streets are intended to serve localized areas or neighborhoods, including local commercial land uses and mixed-use areas (i.e. low speeds, low volumes, and short distances). Local streets are not intended for use by through traffic. The primary function of arterials is mobility. Limiting access points (intersections and driveways) on arterials enhances mobility. Too much mobility at high speeds limits access by pedestrians and bicyclists. The arterial is designed with the intent to carry more traffic than is generated within its corridor (i.e. higher speeds, higher volumes, and longer distances).



Classifying the street system in the vicinity of the study area required close examination of roles that each street performs in the overall transportation system. Existing plans, as well as quantitative and qualitative classification criteria, also helped in the development of the hierarchy of streets within the study area transportation system. The existing public street network in the study area is divided into several functional classifications, including arterials, collectors, and locals.

3.5.1 Interstates, Expressways, and Freeways

Interstates, expressways, and freeways provide the most mobility and least access (since access is only available at interchanges). Interstate and expressway/freeway facilities typically serve longer distance travel and support regional mobility. The state funds roadway improvement and maintenance on these facilities. I-64 is an interstate facility while Humelsine Parkway (Route 199) is an example of an expressway or freeways in the study area.

3.5.2 Arterials

Arterials provide high mobility, operate at higher speeds (45 mph and above), provide significant roadway capacity, have a great degree of access control, and serve longer distance travel. Arterials can be subdivided into categories that include facilities with full access control such as freeways and expressways, as well as major and minor arterials. Arterials usually connect to one another or to collector streets. Very few arterials connect to local streets.

3.5.3 Principal Arterials

Principal arterials typically have tightly controlled access and few, if any, individual site driveways. These facilities serve medium to longer distance travel and typically connect minor arterials and collector streets to freeways and other higher type roadway facilities. Generally, roadway improvements and maintenance on principal arterials are funded by the state. For reference purposes, U.S. Route 60 (Richmond Road) is a principal arterial.

3.5.4 Minor Arterials

Minor arterials primarily serve a mobility function but often have more closely spaced intersections, some individual site driveways, and generally lower design and posted speeds compared to other arterials. The minor arterial network primarily serves local traffic and connects to other minor arterials, principal arterials, and collector streets. Minor arterials provide a higher level of access to adjacent land uses than principal arterials and typically have lower traffic volumes. For the most part, minor arterials are maintained by the state but the cost may be the responsibility of local governments.

In general, minor arterials in the study area have two-lane undivided cross sections with little or no paved shoulders and an occasional left-turn lane at intersections and major driveways. Posted speed limits range from 35 mph to 45 mph. Within the study area Longhill Road (SR 612) and Centerville Road (SR 614) are minor arterials.

3.5.5 Collectors

Collectors typically provide less overall mobility, operate at lower speeds (less than 35 mph), have more frequent and greater land use access flexibility, and serve shorter distance travel than arterials. Collectors provide critical connections in the roadway network by bridging the gap between arterials and locals. Thus, the majority of collector streets connect with one another, with local streets, and with non-expressway/freeway arterials.

The primary purpose of the collector street system is to collect traffic from neighborhoods and distribute it to the system of major and minor arterials throughout an area. In general, collector streets have two lanes and often have exclusive left-turn lanes at intersections with major and minor arterials and less frequently at intersections with other collector streets. The collector streets in the study area are state owned and maintained. Olde Towne Road (SR 658) is an example of a collector street in the study area.

3.5.6 Locals

Local facilities provide greater access and the least amount of mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph). Many of the local roads within the study area are paved residential streets. Sheffield Road, Buford Road, and Season's Trace are all classified as local roads in the study area.



Section 3.6 Congested Corridors Level of Service

Congested corridors result from several factors. One primary cause is bottlenecks at intersections along the corridor. Aside from individual bottleneck locations, congestion frequently results from too many people trying to use a route that is already at or over-capacity. In these situations it is also assumed that motorists do not have the option of an alternative corridor.

Level of Service (LOS) places roadways into six letter grade levels of the quality of service to a typical traveler on a facility. An "A" describes the highest level (least congestion) and level "F" describes the lowest level (most congestion). The Levels of Service (and volume to capacity (V/C) ratios) are grouped into one of the following categories.



- **LOS A or B** — *Well Below Capacity* (V/C = less than 0.75) — Roadways operating with a V/C ratios less than 0.75 operate at optimal efficiency with no congestion during peak travel periods.
- **LOS C** — *Approaching Capacity* (V/C = 0.75 to 1.0) — Roadways with a V/C less than 0.8 typically operate with efficiency. As the V/C nears 1.0, the roadway becomes more congested. A roadway approaching capacity may operate effectively during non-peak hours, but may be congested during morning and evening peak travel periods.
- **LOS D** — *At Capacity* (V/C = 1.0 to 1.1) — Roadways operating at capacity are somewhat congested during non-peak periods, with congestion building during peak periods. A change in capacity due to incidents impacts the travel flow on corridors operating within this V/C range.
- **LOS E** — *Slightly Over Capacity* (V/C = 1.1 to 1.3) — Roadways operating with V/C ratios between 1.1 and 1.3 experience heavy congestion during peak periods and moderate congestion during non-peak periods. Changes in capacity can have major impacts on corridors and may create gridlock conditions.
- **LOS F** — *Well Over Capacity* (V/C = greater than 1.3) — Roadways in this category represent the most congested corridors in the study area. These roadways are congested during non-peak hours and most likely operate in stop-and-go gridlock conditions during the morning and evening peak travel periods.

Section 3.7 Existing Level of Service (LOS)

Through methodology outlined by the Transportation Research Board's Highway Capacity Manual (HCM), turning movement and ADT counts were used in conjunction with *Synchro Professional 8.0* to determine existing levels of service at all signalized intersections and most unsignalized intersections. Level of service (LOS) describes the quality of the driving experience using six levels designated A through F. Each LOS is defined by a range of quantitative measurements appropriate to the described facility, such as the density and speed of traffic for a highway LOS or the number of vehicles stopped and average stop duration for a traffic signal LOS.

3.7.1 Roadway Capacity Analysis

Roadway capacity analysis was performed for the weekday AM and PM peak hours using *Synchro Professional 8.0*. This software uses methodologies contained in the 2000 Highway Capacity Manual (HCM) [TRB Special Report 209, 2000]. The ranges of delay for arterial LOS are shown in **Table 3-1.**

Table 3-1: HCM Arterial Classification II – LOS Criteria

Arterial Street Classification – II (Range of Free Flow Speed 35-45 MPH)	
LOS	Average Travel Speed (MPH)
A	› 35
B	› 28-35
C	› 22-28
D	› 17-22
E	› 13-17
F	‹ 13

Source: Transportation Research Board, 2000 Highway Capacity Manual

For roadways, the arterial LOS is determined based on the arterial speed and distance between intersections. A result of LOS D or better is typically considered acceptable. It is noted that the County general seeks to achieve or sustain LOS C conditions at the intersections and along the roadways serving the local community. Expectations are often nuanced in terms of other factors at play such as the character of the road, scale or density of adjacent development, or a focus on pedestrian and transit oriented development. The existing and anticipated characteristics of Longhill Road (e.g., numerous unsignalized driveways, spacing of signalized intersections, AM and PM peak traffic characteristics, and increased bicycle and pedestrian activity/accommodations), suggest that achieving LOS D conditions in the future will meet industry standards and will be acceptable given the project's guiding principles.

Table 3-2 and **Table 3-3** summarize the results of the arterial LOS analyses. Detailed results are provided in the **Appendix E**.



Table 3-2: 2013 Existing Arterial Level of Service – Eastbound Longhill Road

Cross Street		AM		PM	
		ATS (mph)	LOS	ATS (mph)	LOS
From	Centerville Road	N/A*			
To/From	Olde Towne Road	37.6	A	31.9	B
To/From	Williamsburg W. Drive/Lane Place Drive	8.8	F	9.6	F
To/From	Humelsine Parkway (Route 199) EB Off/On-Ramp	23.2	C	22.8	C
To	Humelsine Parkway (Route 199) WB Off/On-Ramp	14.8	E	11.6	F
Overall		**22.1**	**C**	**20.9**	**D**
Average Travel Speed (ATS)					

**Only represents western limit location of arterial segment. No LOS reported.*

Table 3-3: 2013 Existing Arterial Level of Service – Westbound Longhill Road

Cross Street		AM		PM	
		ATS (mph)	LOS	ATS (mph)	LOS
From	Humelsine Parkway (Route 199) WB Off/On-Ramp	29.0	B	25.7	C
To/From	Humelsine Parkway (Route 199) EB Off/On-Ramp	22.1	C	20.3	D
To/From	Williamsburg W. Drive/Lane Place Drive	19.5	D	2.5	F
To/From	Olde Towne Road	13.4	E	6.0	F
To	Centerville Road	33.0	B	32.7	B
Overall		**25.7**	**C**	**12.4**	**F**
Average Travel Speed (ATS)					

Overall corridor performance during the AM peak is LOS C in both directions. In the PM peak, overall performance is LOS D eastbound and LOS F westbound. Depending on the direction and time of day, some individual segments of the corridor perform better than the corridor as a whole, while some perform worse. Arterial LOS west of Olde Towne Road is typically LOS B or better in both directions and under AM and PM peak hour conditions. The Williamsburg W Drive/Lane Place Drive intersection is a choke point along the corridor causing significant deterioration in LOS under AM and PM peak hour conditions and in both directions. The Olde Town Road signalized intersection impacts arterial operations most significantly only in the westbound direction but under both AM and PM peak hours.

3.7.2 Intersection LOS Analysis

Capacity analyses for signalized and unsignalized intersections in the weekday AM, Midday, and PM peak hours were performed using *Synchro Professional* 8.0.

This software uses methodologies contained in the *2000 Highway Capacity Manual* (HCM) [TRB Special Report 209, 2000]. The ranges of delay for each intersection LOS are shown in **Table 3-4**.

Table 3-4: Signalized and Unsignalized Intersection HCM LOS Criteria

LOS	Intersection Delay per Vehicle(s)	
	Signalized	Unsignalized
A	0.0 - 10	0.0 - 10
B	>10 - 20	>10 - 15
C	>20 - 35	>15 - 25
D	>35 - 55	>25 - 35
E	>55 - 80	>35 - 50
F	>80	>50
Source: Transportation Research Board, Highway Capacity Manual 2000		

Intersection turning movement counts (TMC) were used in conjunction with existing geometric data including number of lanes and traffic control (signalization) to determine existing levels of service. For intersections, LOS is based on the average delay experienced by all traffic using the intersection during the busiest 15-minute peak period. LOS A through D is considered acceptable. Existing intersection LOS results are reported below for the five signalized intersections and nine unsignalized intersections with Longhill Road on the corridor.

Signalized

- Route 199 WB Off/On-Ramp
- Route 199 EB Off/On-Ramp
- Williamsburg W. Drive/Lane Place
- Olde Towne Road
- Centerville Road

Unsignalized

- Williamsburg Plantation
- Buford Road
- Lafayette Boulevard
- Sheffield Road
- Season's Trace
- Lafayette High School Entrance
- Lafayette High School Bus Loop
- Warhill Trail
- Ford's Colony Drive

The results for signalized intersections are shown in **Tables 3-5** through **3-9**. Results for unsignalized intersections are shown in **Tables 3-10 through 3-17**. Average delay and LOS by movement and time of day (AM or PM peak) are reported for each intersection.

Of the five signalized intersections, both of the Route 199 intersections operate at LOS B overall in both the AM and PM periods, with all movements operating at LOS C or better. The other three signalized intersections operate at LOS D, E, or F depending on location and time of day. Most individual movements at these three intersections also perform at LOS D or below.

While six of the nine unsignalized intersections show overall performance of LOS A for both AM and PM periods, five of the six intersections have at least one movement that operates at LOS D or below. The remaining three unsignalized intersections have an average LOS of D or below during either the AM or PM peak periods resulting from long delays from a single movement.

Table 3-5: Route 199 WB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection A)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	B (13.0)	A (9.8)	C (22.9)	-	B (14.2)
PM Peak Hour					
Existing (2013)	B (19.9)	B (13.3)	C (23.3)	-	B (18.7)
Source: Kimley-Horn and Associates, Inc.					

Table 3-6: Route 199 EB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection B)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	B (11.7)	A (8.8)	-	C (20.3)	B (12.5)
PM Peak Hour					
Existing (2013)	B (11.7)	A (7.9)	-	C (20.9)	B (10.9)
Source: Kimley-Horn and Associates, Inc.					

Table 3-7: Williamsburg W. Drive/Lane Place and Longhill Road Signalized Intersection LOS (Intersection C)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	F (109.2)	B (19.7)	D (43.0)	F (> 300)	F (90.4)
PM Peak Hour					
Existing (2013)	F (110.0)	F (283.5)	E (55.6)	D (43.1)	F (196.7)
Source: Kimley-Horn and Associates, Inc.					

Table 3-8: Olde Towne Road and Longhill Road Signalized Intersection LOS (Intersection E)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	C (28.6)	D (44.1)	D (47.2)	D (44.3)	D (38.5)
PM Peak Hour					
Existing (2013)	D (52.3)	F (158.1)	D (43.7)	E (58.9)	F (100.7)
Source: Kimley-Horn and Associates, Inc.					

Table 3-9: Centerville Road and Longhill Road Signalized Intersection LOS (Intersection N)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	E (58.8)	D (47.5)	C (29.6)	C (28.5)	D (35.7)
PM Peak Hour					
Existing (2013)	E (57.6)	D (50.4)	C (27.4)	C (31.6)	D (35.5)
Source: Kimley-Horn and Associates, Inc.					

Table 3-10: Williamsburg Plantation and Longhill Road Unsignalized Intersection LOS (Intersection D)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	A (8.8)	A (0.0)	A (0.0)	C (21.4)	A (0.4)
PM Peak Hour					
Existing (2013)	B (12.1)	A (0.0)	A (0.0)	D (32.7)	A (0.6)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 3-11: Buford Road and Longhill Road Unsignalized Intersection LOS (Intersection F)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	A (0.0)	A (9.1)	D (29.5)	-	A (0.9)
PM Peak Hour					
Existing (2013)	A (0.0)	B (10.0)	E (41.5)	-	A (1.1)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 3-12: Lafayette Boulevard and Longhill Road Unsignalized Intersection LOS (Intersection G)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	B (10.0)	A (0.0)	-	F (70.5)	A (3.6)
PM Peak Hour					
Existing (2013)	B (10.7)	A (0.0)	-	F (160.1)	A (9.9)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 3-13: Sheffield Road and Longhill Road Unsignalized Intersection LOS (Intersection H)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	A (0.0)	A (9.0)	E (41.5)	-	A (1.8)
PM Peak Hour					
Existing (2013)	A (0.0)	A (9.4)	E (38.4)	-	A (1.4)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					



Table 3-14: Season's Trace and Longhill Road Unsignalized Intersection LOS (Intersection I)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	B (10.1)	A (0.0)	-	F (244.3)	D (31.7)
PM Peak Hour					
Existing (2013)	B (11.0)	A (0.0)	-	F (108.1)	A (7.6)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 3-15: Lafayette High School Entrance and Longhill Road Unsignalized Intersection LOS (Intersection J)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	C (16.0)	A (0.0)	-	F (291.5)	E (41.2)
PM Peak Hour					
Existing (2013)	B (10.3)	A (0.0)	-	D (27.0)	A (2.9)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 3-16: Lafayette High School Bus Loop and Longhill Road Unsignalized Intersection LOS (Intersection K)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	A (8.1)	B (12.1)	D (25.1)	E (37.2)	A (2.2)
PM Peak Hour					
Existing (2013)	A (8.7)	A (8.6)	B (14.6)	A (0.0)	A (0.1)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 3-17: Warhill Trail and Longhill Road Unsignalized Intersection LOS (Intersection L)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	A (8.2)	A (8.3)	D (30.4)	B (13.5)	A (4.7)
PM Peak Hour					
Existing (2013)	A (8.1)	B (10.1)	F (> 300)	C (21.8)	F (100.6)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					



Table 3-18: Ford's Colony Drive and Longhill Road Unsignalized Intersection LOS (Intersection M)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
Existing (2013)	A (7.9)	A (8.4)	D (28.7)	C (20.0)	A (7.7)
PM Peak Hour					
Existing (2013)	A (8.1)	A (9.1)	D (33.3)	F (52.5)	A (7.4)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Section 3.8 Bicycle and Pedestrian Environment

The presence of sidewalks, crosswalks, and multi-use paths or trails is an indication of how accommodating an area is to non-vehicular movements. Based on general observations conducted during several field visits to the corridor study area there is evident demand for both pedestrian and bicycle accommodations. Where these facilities are offered they are very often seen being used, particularly pedestrian traffic along the sidewalks and the short segment of multi-use trail. Bicyclists were observed riding on the sidewalk adjacent to the roadway when available, along the shoulder, or simply in the travel lane. In general, Longhill Road has limited bicycle and pedestrian facilities and significant gaps exist in the network. Substantial upgrades to existing facilities are necessary to provide safe pedestrian and bicycle movements through the corridor.

3.8.1 Sidewalks and Trails

The framework of a potentially robust sidewalk and multi-use path network exists along the corridor today. However, there are evident safety concerns, lack of adequate accommodations, and notable gaps in the network. Sidewalks are offered along approximately one half of the corridor and primarily along the north side of the roadway. The longest extent of sidewalk exists on the north side of the road between Lafayette High School and Williamsburg West Drive. This provides pedestrian access to the high school from points east. There is no sidewalk on the south side of the roadway for this segment. Short segments of sidewalk exist on the south side of the road near the Centerville Road/Longhill Road signalized intersection and the Longhill Grove apartment complex. Another short extent of sidewalk is present on the south side of the road at Burlington Lane and the entrance to the Burlington Woods development.

Pedestrian activity in the western portion of the corridor is almost non-existent due to the lack of facilities. Those that do choose to walk along this portion of the corridor are forced to either walk in the grass along the edge of the travel lane or walk along the minimal shoulder of the roadway. Along the eastern segment of the corridor pedestrians use the available sidewalk.



Sidewalk segment needing landscaping maintenance



High School students using multi-use path



Sidewalk segment at west end of corridor



Gap in sidewalk network east of Burlington Woods

Many of the existing sidewalks and multi-use paths are set back several feet from the edge of roadway, with grass and other landscaping serving as a buffer between pedestrian and vehicular traffic. Some segments are located immediately adjacent guardrail at the edge of the pavement or otherwise with only narrow or no separation from the travel lanes.



Buffer between sidewalk and travel lane



Segment of sidewalk flush with edge of pavement

3.8.2 Crosswalks

Crosswalks are largely absent in the corridor, with only one across Longhill Road at its intersection with Centerville Road. Very limited crosswalk treatments exist at Burlington Lane, Warhill Trail, and Williamsburg Plantation Drive. Crosswalk pavement markings at the Burlington Lane and Williamsburg Plantation Drive approaches are worn and in need of striping. Lack of crosswalks, supplemental pedestrian signage at unsignalized intersections, as well as adequate pedestrian push button/ped display equipment at signalized intersections presents a restrictive environment for pedestrian safety and mobility.



Crosswalk pavement markings worn from traffic



Crosswalk across Warhill Trail near entance

3.8.3 Bike Lanes

While bicycles are allowed on Longhill Road, there are few dedicated/defined bike lanes.

- At the east end of the corridor, where Longhill Road intersects with Route 199, dedicated bike lanes are striped in both directions through the interchange area. This channelization helps delineate bicycle space within the various turn movements.
- There is a bicycle lane at the west end of the corridor, in the westbound direction only, leading into the intersection with Centerville Road.

  West of Lafayette High School, on the north side of the road, there is a bike lane for about 750 feet adjacent to the multi-use path leading to the Warhill Trail Sports Complex access driveway intersection.

In addition to these locations that provided dedicated bike accommodations there is a segment along the eastern portion of the corridor that is signed as a "Share The Road" condition. Similar to pedestrian accommodations there are evident gaps in the network and safety concerns revolve around less experienced bicyclists being forced to either ride in the road or immediately adjacent to the roadway.



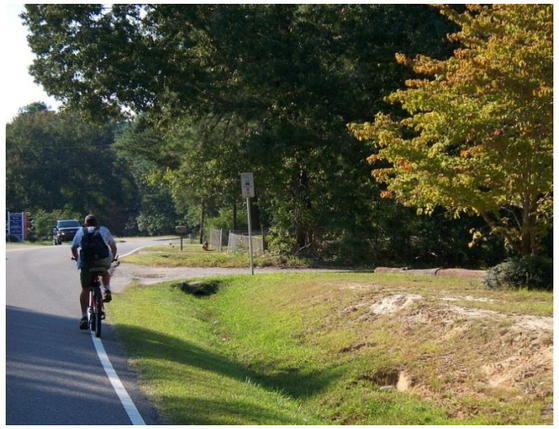
Dedicated Bike Lane at Centerville Road



"Share The Road" condition near Lane Place Drive



Lafayette High School students riding on sidewalk



Bicyclist riding along travel lane edge line

Section 3.9 Transit Conditions

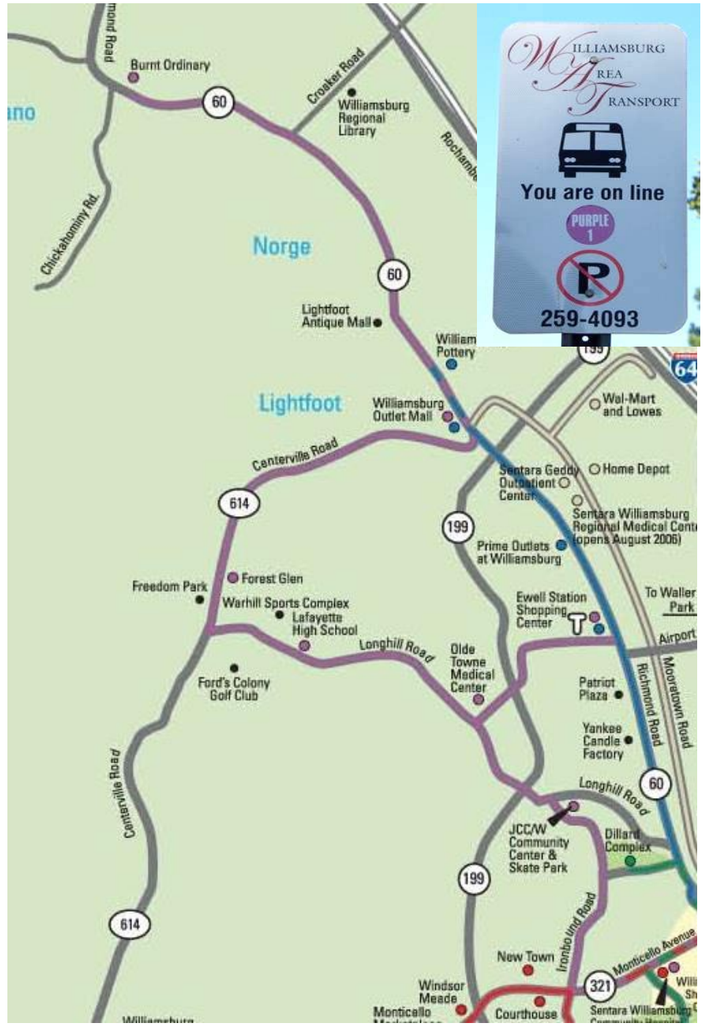
3.9.1 Bus Service

Williamsburg Area Transport (WATA) provides bus service on the Longhill Road corridor with service every hour, between approximately 6:00 a.m. and 9:00 p.m., Monday through Saturday, and Sunday transit service being offered between 8:00 a.m. and 6:00 p.m. The Purple 1 line serves Longhill Road as part of a longer route system between New Town along Monticello Avenue and Burnt Ordinary located along Richmond Road in Toano as shown in **Figure 3-5**. It is noted that the Williamsburg Outlet Mall, which served as WATA's northern hub closed at the end of December 2013. Beginning on January 2, 2014, WATA moved its northern hub operations to the Wal-Mart at 731 Rochambeau Drive and the customer service center moved to the Williamsburg Transportation Center at 468 North Boundary Street.

3.9.1.1 Purple Line 1 Ridership

Ridership for Purple Line 1 averaged approximately 6,000 riders per month during Fiscal Year 2013 (i.e., July 2012 to June 2013). The route experienced its highest ridership during the months of April and May when it slightly exceeded 7,000 riders. The lowest month of the year occurred in December with ridership just below 5,400.

Figure 3-5: Purple Line Route





3.9.2 Bus Stops

There are currently 15 bus stop locations along the corridor as reflected in **Figure 3-6**. In most instances the bus stops complement one another offering the ability to get picked-up/dropped-off based upon the intended eastbound - westbound direction of travel. However, is noted that in the westbound direction there are 3 bus stops without formal complimentary eastbound bus stops. Bus stop amenities are generally absent from the corridor. Bus stops typically consist of a sign indicating a pick- up/drop-off location along the edge of the roadway. Many such stops are in the grass or gravel at the roadway edge; only 5 of the 15 stops provide passenger waiting areas on a trail or sidewalk. The one stop with a shelter is located at Burton Woods Drive near the Longhill Grove apartment complex.

Figure 3-6: WATA Bus Stop Locactions along Longhill Road





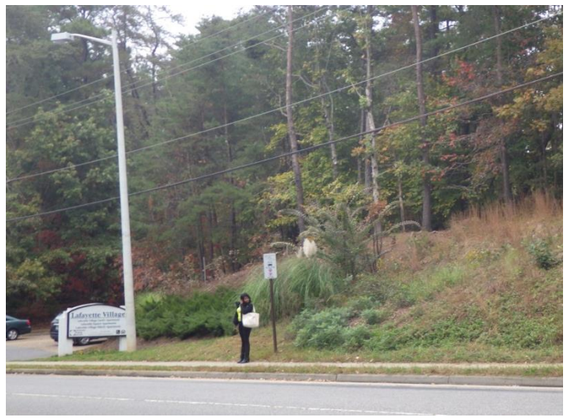
Bus pull-off area near Lafayette High School



Sheltered bus stop near Burton Woods Drive



Bus stop immediately adjacent to turn lane



Transit rider waiting at bus stop with no shelter



Section 3.10 Crash Analysis

An analysis of existing crash data was conducted within the study area in order to identify existing safety concerns and potential countermeasures. VDOT provided crash data from the Highway Traffic Records Information System (HTRIS) for an approximately three-year period between January 2010 and December 2012. Crash data were examined along the three mile Longhill Road study area segment from Centerville Road in the west to Route 199 in the east. The corridor crash data findings cover two segments, Segment 1 being Longhill Road between Centerville Road to Olde Towne Road and Segment 2 consisting of Longhill Road between Olde Towne Road and Route 199.

Review of the available crash data indicated that a total of 102 crashes occurred on Longhill Road during the three year study period as summarized in **Table 3-19** below.

Table 3-19: Crash Summary for Longhill Road 2010 to 2012

Roadway	Number of Crashes over 3 Year period (2010 – 2012)	Crash Rate (Per 100 Million Vehicle-miles)
Longhill Road	102	128.3
Total	**102**	**128.3**

Based on the crash data provided, of the 102 crashes that were documented, 67 could actually be associated with a specific location along the roadway as reflected in **Figure 3-9**. The highest number of crashes over the three-year period, (18) occurred at or in the vicinity of the Olde Town Road intersection. A recent upgrade of traffic signal equipment to include pedestrian push-buttons, pedestrian displays, and crosswalks combined with the installation of flex post delineators on Longhill Road to prohibit left-turns into or out of the 7-Eleven should enhance safety at this intersection. Other locations of note along the corridor include the Route 199 Eastbound Off/On-Ramp intersection (14), the Williamsburg W Drive/Lane Place Drive intersection (8), and the segment of Longhill Road between Fords Colony Drive and Season Trace (9).

When examining the overall crash rate, it can be observed that the study area crash rate of 128.3 is significantly lower than the statewide average crash rate for similar facilities which is approximately 287. The statewide average crash rate of a similar type facility is a two-lane, undivided typical section with substantial curvature and essentially no shoulder area on either side of the roadway. This accurately describes much of Longhill Road. There are probably several reasons why the crash rate for Longhill Road is substantially lower than the statewide rate. The presence of turn-lanes along a two-lane facility such as Longhill Road is very beneficial to intersection operations where side street driveways are present, as the turn-lane provides an area for stopped/turning traffic to get out of the through lane thus reducing the potential for rear-end crashes. There a very few sight distance challenges along the corridor. Driver population is another positive contributing factor. Much of the drivers along the corridor are commuters or locals who travel the corridor on a daily basis and are very familiar with the roadway. In addition to familiarity, another aspect of the driver population is a more mature group of drivers who are less aggressive with their driving styles, and therefore by being a somewhat more cautious and defensive driver have the potential to avoid crashes.

These factors all combine to contribute to an average crash rate for the corridor much lower than the statewide average. The 67 crashes that had sufficient information to determine an actual location of the crash were broken down by severity and type as listed in **Figure 3-7** through **Figure 3-8**.

Figure 3-7: Distribution of Crashes by Severity

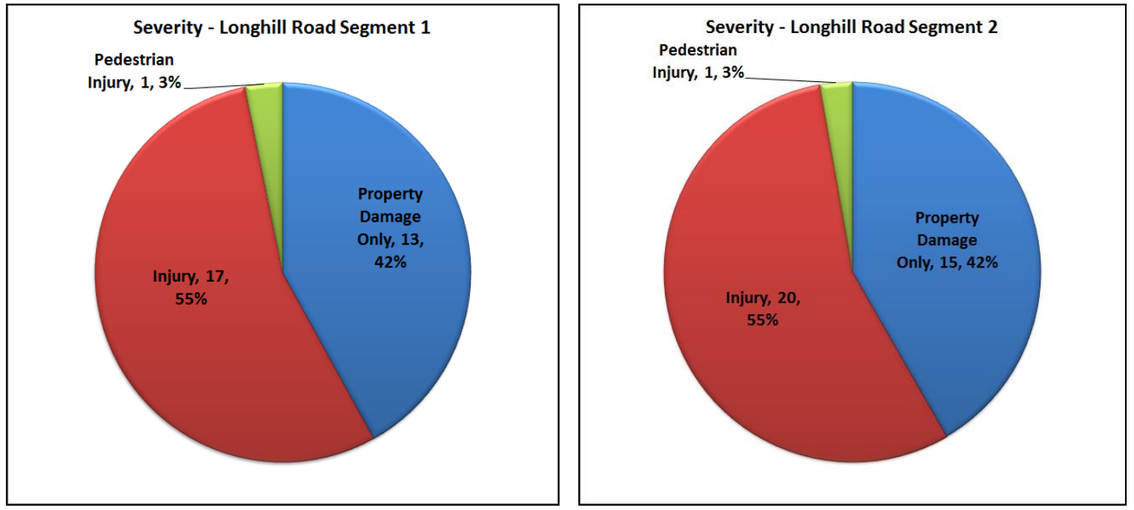
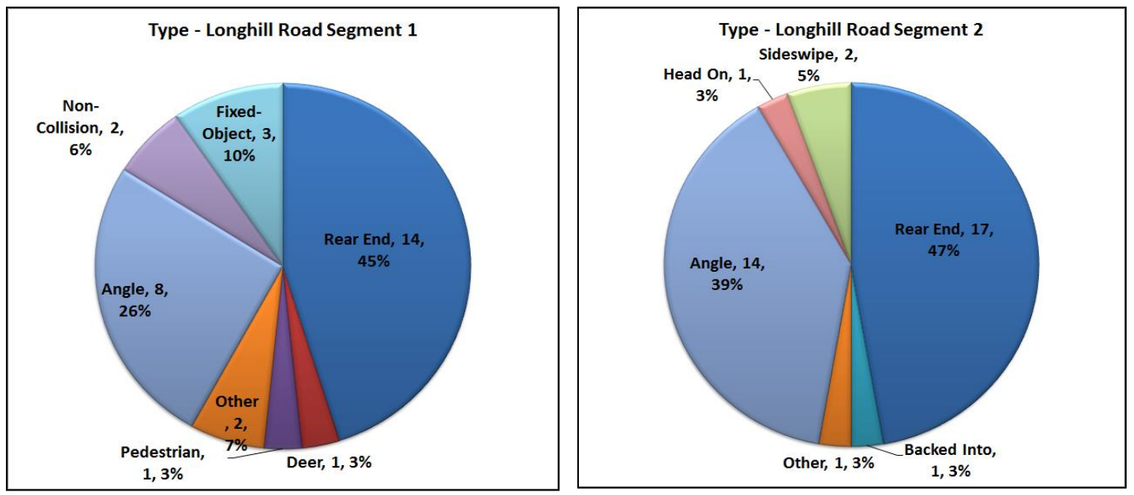


Figure 3-8: Distribution of Crashes by Type





James City County VIRGINIA Jamestown 1607

Longhill Road Corridor Study

James City County

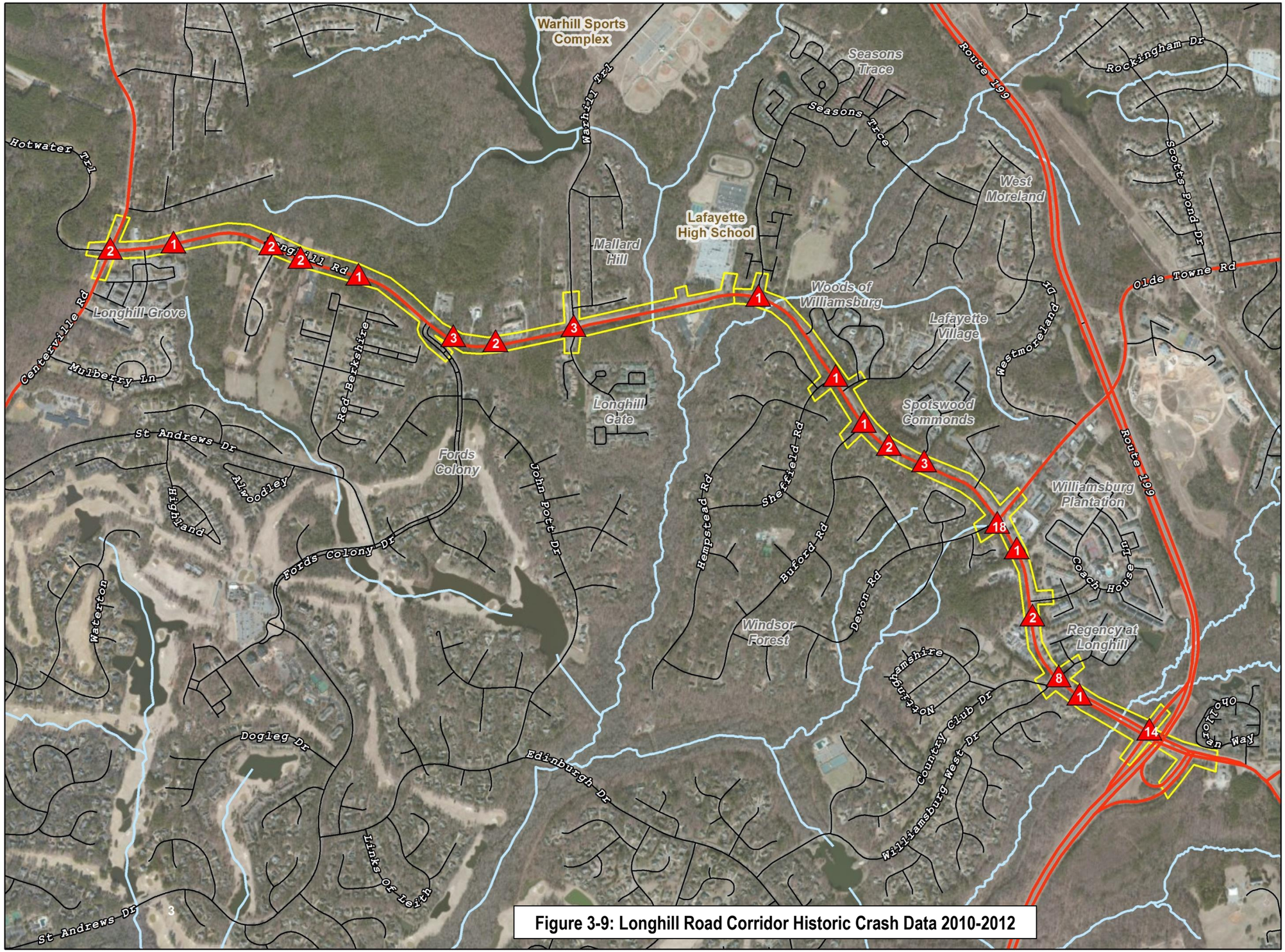


Figure 3-9: Longhill Road Corridor Historic Crash Data 2010-2012

Crash Location and Number

Corridor Study Limit

Primary Road

Secondary Road

Stream

Total Number of Crashes: 102
Located Crashes: 67
Crash Severity:
- **Property Damage Only - 41 crashes**
- **Injury - 57 crashes**
- **Pedestrian Injury - 4 crashes**

Crash Type:
- **Angle - 29 crashes**
- **Rear End - 49 crashes**
- **Sideswipe Same Direction - 2 crashes**
- **Fixed Object Off Road - 7 crashes**
- **Pedestrian - 3 crashes**

Feet
0 375 750 1,500

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

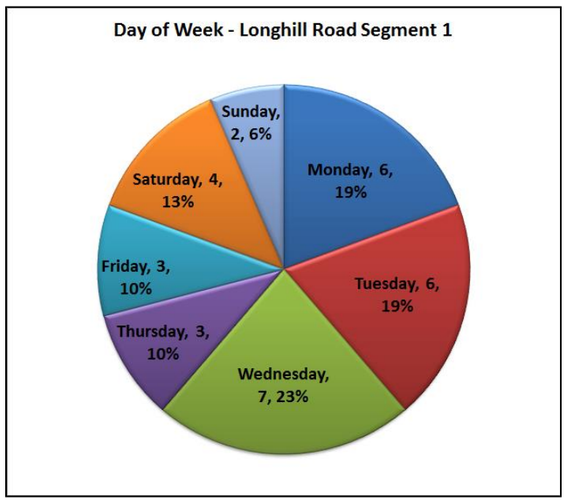
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



As shown in **Figure 3-7** slightly less than half of all crashes along Longhill Road resulted in property damage only. Property damage crashes are only reported if the damage is equal to or more than $1,000; therefore, it should be noted that crashes with property damage resulting in less than $1,000 of damage may not be captured. There were no crashes in the three year period that resulted in a fatality along Longhill Road. With respect to type of crash, rear end crashes accounted for nearly half of all crashes during the study period as shown in **Figure 3-8**. Fixed object, angle, and sideswipe crashes accounted for approximately the other half of all crashes.

The number of crashes varied slightly from year to year, with 44 during the first year, 31 during the second year, and 27 during the third year. The weekly distribution of crashes was fairly evenly distributed throughout the week as shown in **Figure 3-10**. Over three fourths of all crashes occurred during clear weather conditions versus rain or inclement weather conditions as shown in **Figure 3-11**.

Figure 3-10: Distribution of Crashes by Day of Week



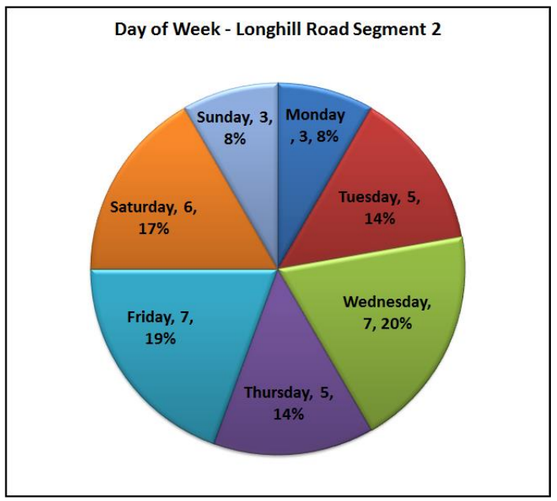
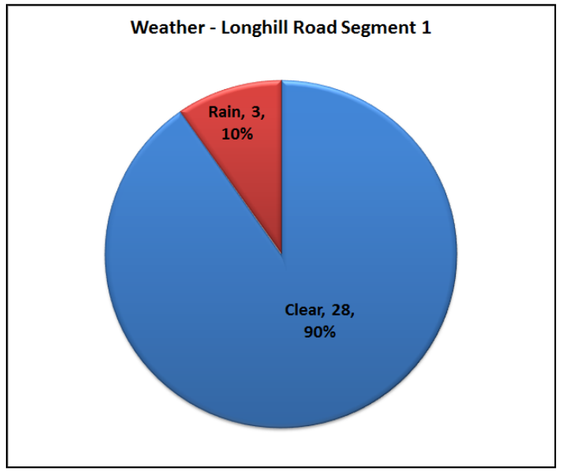
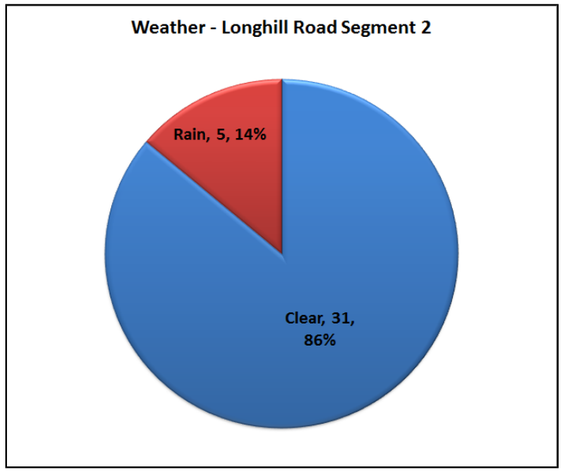


Figure 3-11: Distribution of Crashes by Weather Conditions







Chapter 4.0 Environmental Existing Conditions Screening

As a part of the existing conditions review of the potential project corridor along Longhill Road in James City County, Virginia, an Environmental Screening was conducted. **Figure 2-1** shows the general limits of the project study area.

The screening consisted of a review of information obtained from various standard environmental data sources related to wetlands and other surface waters, floodplains, threatened and endangered species, cultural and historic resources, and hazardous materials. Staff from Kimley-Horn then visually inspected the project area to assess local topographic and hydrographic conditions and review the results of the hazardous materials and cultural resources databases against actual field conditions.

The data sources consulted to perform the review were:

- U.S. Geological Survey Topographic Maps
- U.S. Fish and Wildlife Service National Wetlands Inventory
- U.S. Environmental Protection Agency Facility Registration System
- Federal Emergency Management Agency – Flood Insurance Rate Maps
- Virginia Department of Historic Resources – Data Sharing System
- Virginia Department of Game and Inland Fisheries – Fish and Wildlife Information System
- Virginia Department of Conservation and Recreation – Natural Heritage Explorer
- James City County - Powhatan Creek Watershed Management Plan

Section 4.1 Wetlands and Surface Waters

The USGS Norge and Williamsburg, Virginia 7.5 Minute Quadrangle Topographic Maps show that the study corridor ranges in elevation from 50 to 100 feet above the National Geodetic Vertical Datum of 1929, as shown on **Figure 4-1**. The areas of lower elevation along the study corridor correspond to the surface waters and wetland areas in the central and eastern portions of the corridor. Surface waters within the study area are shown on **Figure 4-2,** and include Chisel Run in the eastern portion of the study area, which flows into Powhatan Creek, and Longhill Swamp on Powhatan Creek in the western portion of the study area, a tributary to Back River which flows into the James River and the Chesapeake Bay.

Through research in the U.S. Fish and Wildlife Service National Wetlands Inventory, patches of wetlands were identified throughout the study area. In the western portion of the corridor, wedged between Longhill Road and Royal Adelaide, there is an approximately 2,400 square foot freshwater pond with an associated freshwater forested/ scrub wetland area, approximately 1,100 square feet in size, to the south.



View of freshwater pond south of Longhill Road west of Fords Colony Drive



View of Longhill Swamp facing north from Longhill Road near the Christian Life Center

There are two wetland areas associated with Longhill Swamp, both comprised of freshwater forested/scrub wetlands. One of these wetland areas is immediately to the east of Season's Trace along with two freshwater ponds. These ponds have been altered to add fountains and may potentially serve as stormwater treatment for Season's Trace.



Project Study Area

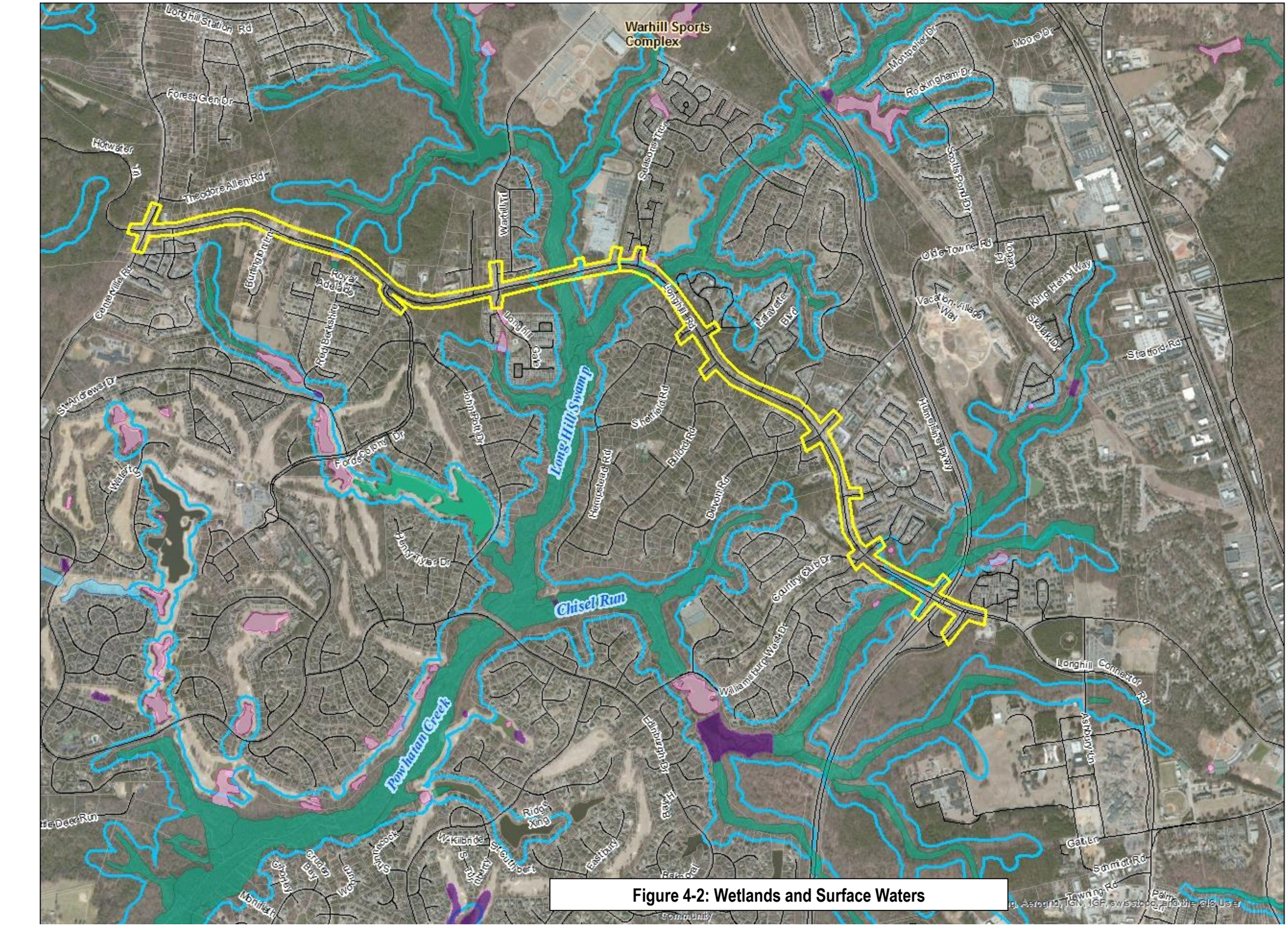


Feet
0 500 1,000 2,000

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

Figure 4-1: Site Location and Topographic Map



Project Study
Parcel Boundary
RPA Buffer

National Wetlands Inventory

Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Other

0 500 1,000 2,000 Feet

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community,USFWS National Wetlands Inventory, James City County

Figure 4-2: Wetlands and Surface Waters

In the eastern portion of the corridor, between Williamsburg West Drive and Route 199 (Humelsine Parkway), there is approximately 28,000 square feet of freshwater forested/shrub wetlands to the north of the corridor and approximately 33,000 square feet of freshwater forested/shrub wetlands to the south of the corridor. These wetland areas are shown on **Figure 4-2**.



View of pond with fountain at Season's Trace

A full wetland delineation with U.S. Army Corps of Engineers (USACE) confirmation will be necessary to determine the extent of potential impacts from improvements along the corridor once a preferred typical section roadway width and roadway alignment are selected. Permits from the USACE, Virginia Department of Environmental Quality (DEQ) and possibly the Virginia Marine Resources Commission (VMRC) could be required for roadway improvements depending upon the final selected design, calculated quantity of impacts, and contributing drainage area upstream of the impact locations.

The eastern half of the study corridor is bisected by three perennial streams. Chisel Run flows from north to south between the interchange of Longhill Road and Route 199 and Williamsburg West Drive and then flows into Powhatan Creek in Longhill Swamp. Two perennial fingers of Powhatan Creek also flow from north to south into Longhill Swamp both to the east and west of Lafayette High School.

Two additional intermittent streams are located within the corridor study limits. One is located at the intersection of Devon Road and Longhill Road. This intermittent stream flows south into Chisel Run and then Powhatan Creek. The second intermittent stream is located approximately 1,000 feet west of the intersection of Fords Colony Drive and Longhill Road. This intermittent stream begins at the outlet of the small pond located on the south side of Longhill Road at this location and flows north into an unnamed tributary of Powhatan Creek.

All of James City County is designated as a Chesapeake Bay Preservation Area (CBPA). The CBPA consists of resource protection areas (RPAs) and resource management areas (RMAs). The RPA is defined by the Chesapeake Bay Preservation Ordinance (Chapter 23 of James City County Code) as, "...land adjacent to water bodies with perennial flow..." and "...include: 1. Tidal wetlands; 2. Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow; 3. Tidal shores; 4. A buffer area not less than 100 feet in width located adjacent to and landward of the components listed in subdivisions 1 through 3 above, and along both sides of any water body with perennial flow." The RMA is the portion of the CBPA that is not classified as an RPA. The general location of the RPA boundary is shown on **Figure 4-2**. If proposed improvements along the corridor are located in the RPA, the site-specific RPA boundary will need to be delineated and approved by the Manager of Development Management or his designee.

Unavoidable impacts to wetlands or streams along the project corridor must be mitigated to ensure no net loss of wetland functions and values. This mitigation most often takes the form of the purchase of credits from an approved wetland mitigation bank within the same hydrologic unit as the impact. The County operates a stream mitigation bank within the same watershed as the project with available stream credits to offset the impacts to perennial and intermittent streams from the proposed project.

The U.S. Army Corps of Engineers maintains an online mitigation bank tracking tool called the Regulatory In Lieu Fee and Mitigation Bank Information Tracking System (RIBITS) (http://geo.usace.army.mil/ribits/index.html) that can be accessed to determine the availability of wetland mitigation within a given watershed. Review of the RIBITS website indicates that there are several private mitigation banks within the watershed (Hydrologic Unit 02080206) with available wetland credits. Credit prices vary based on the total number of banks with available credits at the time that impacts are taken but generally have been averaging $45,000 -$55,000 per credit in this watershed. During project design, the availability of credits should be investigated again and negotiations with several banks undertaken to obtain the best pricing.

Section 4.2 Floodplain

Locations where the project corridor crosses the 100-year floodplain were determined by reviewing Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) panel numbers

51095C0110C, 51095C0120C and 51095C0140C dated September 28, 2007 (included in **Appendix C**). FIRM mapping shows that the majority of the corridor lies in zone X unshaded, which are areas of minimal flood hazard above the 500-year flood level. Longhill Road crosses the 100-year floodplain in three areas:

- Between Warhill Trail and Layfayette High School, zone AE with a base flood elevation of 42 feet above mean sea level to the north of Longhill Road and 36 feet south of Longhill Road;
- East of Season's Trace, zone AE with a base flood elevation of 44 feet to the north of Longhill Road and 37 feet south of Longhill Road;
- Between Williamsburg West Drive and Humelsine Parkway, zone AE with a base flood elevation of 45 feet to the north of Longhill Road and 42 feet south of Longhill Road.

Flood zone AE denotes the 100-year floodplain where base flood elevations have been established or areas with a 1 percent annual chance of water levels exceeding the base flood elevation. The floodplain areas are shown on **Figure 4-3**.



Section 4.3 Dam Break Inundation Zone

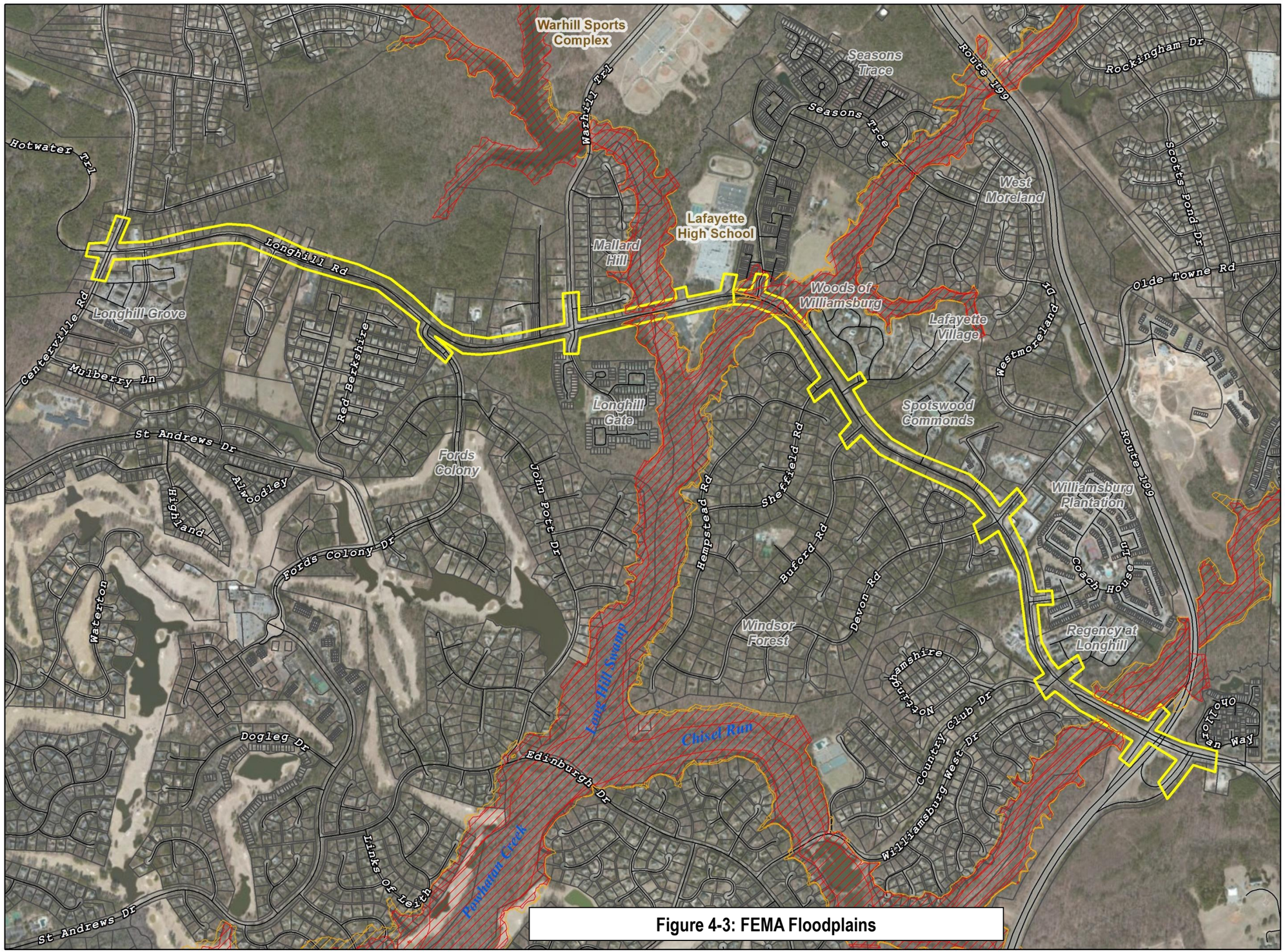
The County owns dams on the Warhill Sports Complex which are subject to Virginia Dam Safety Act & Impounding Structure regulations. The dams are the Warhill Western Pond Dam (#09528) and the Warhill Eastern Pond Dam (#09529). Dam break inundation zone mappings which are required to be developed for these facilities intersect with Longhill Road (See **Appendix C**). The County has secured grants under the Virginia Dam Safety, Flood Prevention and Protection Assistance Fund for both dams to prepare the dam break inundation maps as needed to properly determine hazard classification and secure regular six-year Operation & Maintenance Certificates for both impounding structures. Based on information so far, hazard potential classifications for both dams have been determined to be Low Hazard. The dam break map for the Warhill Western Pond dam has been submitted to Virginia DCR for review. The dam break map for Warhill Eastern Pond dam is in process of being prepared and is in for County draft review. This effort is to comply with §10.1-606.2 and 606.3 of the Virginia Dam Safety Act, 4VAC50-20 et. seq. of the Virginia Impounding Structure Regulations, and local requirements as outlined in Sections 19-27(k) and 19-29(o) of the County's Subdivision ordinance.

Section 4.4 Threatened and Endangered Species

The Virginia Department of Game and Inland Fisheries (DGIF) Virginia Fish and Wildlife Information Service (VAFWIS) database was consulted for the presence of federal and state threatened or endangered species within a two-mile radius of the corridor study. Although several databases are represented in the VAFWIS, the Collections database is the only one of interest due to the requirement for coordination with federal and/or state agencies when a species of legally protected status is identified. Other databases in the VAFWIS do not require coordination with federal or state agencies and are, therefore, of no concern to this investigation.

The Collections database found two threatened or endangered species of concern within the study area. The bald eagle (*Haliaeetus leucocephalus*) is a federal species of concern as well as a state threatened animal. A bald eagle's nest was observed on April 18, 2011 approximately one and one half miles (7,920 feet) from the study area. The "Bald Eagle Protection Guidelines for Virginia" (in **Appendix C**), developed by DGIF, requires that construction activities be at least 750 feet from an active nest at all times. Occupied nests require up to a 1,320 feet buffer zone. The nest observed on April 18, 2011 is approximately six times the required buffer distance from the corridor and will not require any additional coordination.

The entire corridor lies within potential habitat for the Mabee's Salamander (*Ambystoma mabeei*), which is a state threatened species. However, the DGIF Collections database did not show any current recorded observations of the species in the area. If encountered during construction, coordination with DGIF and the Virginia Department of Conservation and Recreation (DCR) will be required to ensure compliance with protected species legislation. Additional species information from DGIF on locations and observations can be found in the **Appendix C** of this report.



Street

Corridor Study Limit

Parcel

FEMA Flood Zone

500 Year

100 Year

Feet
0 375 750 1,500

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, FEMA, James City County

Figure 4-3: FEMA Floodplains



Mabee's Salamander

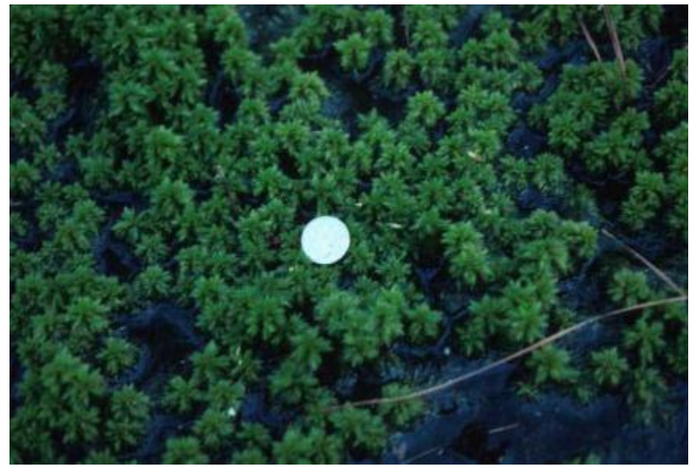
The DCR Natural Heritage Explorer was reviewed on June 11, 2013 for the presence of protected natural areas, conservation lands or known rare plant communities within the project area. A response was received from DCR on July 8, 2013 (included in **Appendix C)** that the study area lies within the Powhatan Creek Conservation Site. This area is protected based on the following heritage resources of concern: Virginia least trillium (*Trillium pusillum var. virginianum*), small whorled pogonia (*Isotria medeoloides*), and Torrey's peat moss (*Sphagnum torreyanum*). Historically, New Jersey rush (*Juncus caesariensis*), northern pitcher plant (*Sarracenia purpurea*), and purple milkweed (*Asclepias purpurascens*) are also found within this area.



Virginia least trillium



Small whorled pogonia



Torrey's peat moss

Considering these plants have been documented within the project area, it is recommended that inventories on the Virginia least trillium, Torrey's peatmoss, New Jersey rush, northern pitcher plant and purple milkweed be conducted in areas indicated on **Figure 4-4**. DCR also recommends an inventory for the small whorled pogonia along the corridor due to the potential for this site to support populations of this federally protected species.



New Jersey rush



Northern pitcher plant



Purple milkweed



Longhill Road Corridor Study

James City County

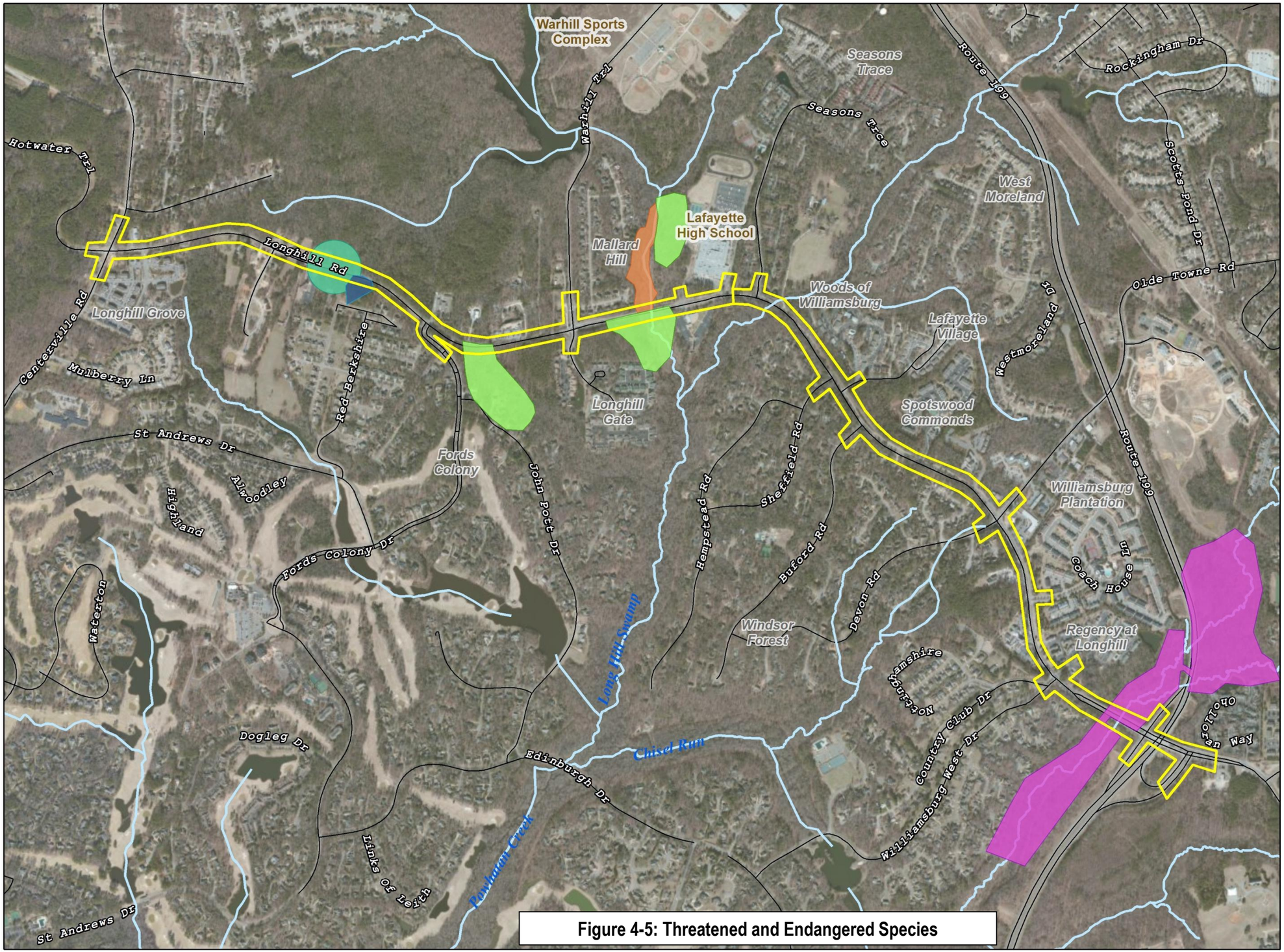


Figure 4-5: Threatened and Endangered Species

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community,USFWS, James City County



Section 4.5 Cultural and Historic Resources

The Virginia Department of Historic Resources (DHR) Data Sharing System was searched on June 12, 2013. The archaeological and architectural sites that were found within the study area are shown on **Figure 4-5** and listed in **Table 4-1**.

Table 4-1: DHR Identified Sites

DHR ID #	Description	Status
047-0072	ca 1800 cemetery excavated in May 1971	Recommended Not Eligible
047-5302	House at 3931 Longhill Road; constructed in 1959	Recommended Not Eligible
44JC0007	Open-air site with colonial and prehistoric material	Surveyed in 1964
44JC0127	0.78 acre open-air site with Native American materials	Reconnaissance survey in 1979 Phase I investigation in 1995 Phase II evaluation in 1996
44JC0216	Domestic open-air site of unknown condition	Depicted on historical maps dated 1863 and 1864
44JC0366	Open-air site; Native American camp or farmstead	Phase I survey in 1985 Phase II evaluation in 1987 Phase III data recovery in 1988 Additional Phase I shovel testing in 1995
44JC0383	Open-air site; Native American temporary camp	Phase I survey in 1985
44JC0384	Open-air site; Native American temporary camp	Phase I survey in 1985

Impacts to these sites can be mitigated through the careful planning of improvements and associated right-of-way acquisition where necessary along the corridor. Potential impacts to listed or eligible resources should be coordinated with the State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation (ACHP). The two architectural sites identified in the database search have been recommended not eligible for listing on the National Register of Historic Places (NRHP), therefore no further coordination for these properties is anticipated. Area proposed for acquisition outside of the current right of way should be investigated for the potential for previously unidentified archeological resources once the proposed limits of the project are more closely defined. The area of potential effect (APE) should be determined which considers both the direct impacts from soil disturbance and visual impacts to architectural resources that may exist along the corridor. Since structures 55 years old and older are required to be assessed for architectural significance, structures along the corridor should be reevaluated during project design to determine if any previously unidentified structures require evaluation based on their age. Additional information on these archaeological and architectural sites is located in **Appendix C.**

Section 4.6 Hazardous Materials

The United States Environmental Protection Agency (EPA) Facility Registry System (FRS) database was accessed on August 7, 2013 in order to obtain information related to hazardous material generation within the project corridor. The FRS identifies facilities, sites or places subject to environmental regulations or of environmental interest and includes records from the following programs: Toxic Release Inventory submitters; Resource Conservation and Recovery Act Information (RCRAInfo); Risk Management Plans; Permit Compliance System; Biennial Reporting System; Aerometric Information Retrieval System (AIRS); and Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS).

Two sites were identified by the FRS within the project corridor, including one small quantity generator of hazardous waste and an unspecified facility under RCRA. Information on these facilities is shown in **Table 4-2** and their locations are shown on **Figure 4-6**.

Table 4-2: Hazardous Materials Generators

EPA FRS Registry ID	Facility Name	Facility Address	Environmental Interest Type	Compliance Status
110006456913	7-Eleven #20990	4840 Longhill Road	RCRA SQG	In Compliance
110021488852	Lafayette High School	4460 Longhill Road	RCRA Unspecified Universal Waste	In Compliance

Additional research on the James City County website identified Lafayette High School as the drop-off location for the Household Chemicals Collection Program which accounts for its listing in the FRS. No evidence of hazardous substance releases was identified based on the information reviewed and visual inspection of the sites during field investigations. The EPA FRS results are included in the **Appendix C**.

A Phase I Environmental Site Assessment should be conducted on any parcels or portions of parcels being acquired for ROW to address the "innocent landowner defense" provision of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and meet the "All Appropriate Inquiry" (AAI) rule into the ownership and uses of the property in preparation of due diligence investigations under the Brownfields Revitalization Act of 2002. The Phase I will review the potential for recognized environmental conditions to exist which warrant further investigation. These further investigations usually include sampling of soil, groundwater and/or soil vapor to determine if contamination is present withing the study area.



Figure 4-6: Cultural Resources

Street
Stream
Corridor Study Limit
Parcel
Archaeological Resources

0 375 750 1,500 Feet

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, James City County, VA Department of Historic Resources



Longhill Road Corridor Study

James City County

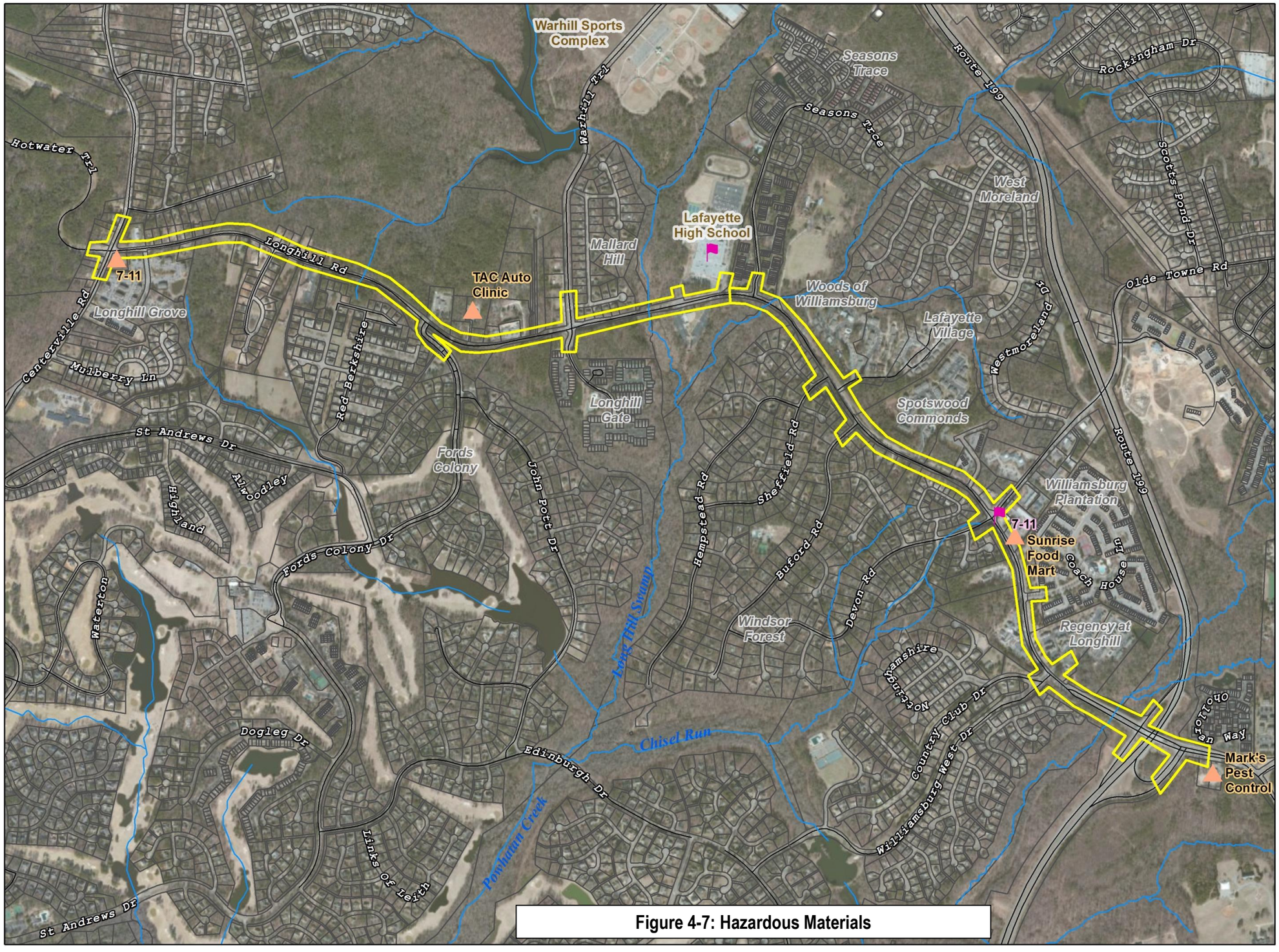


Figure 4-7: Hazardous Materials

- Site of Interest
- EPA Monitored Facility
- Street
- Stream
- Corridor Study Limit
- Parcel

0 380 760 1,520 Feet

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community, EPA FRS, James City County



During site reconnaissance, additional sites of interest were identified in the study area that could potentially be generating hazardous materials. It is in the professional opinion of Kimley-Horn that these sites will not pose a problem to improvements in the study area due to the types of hazardous materials potentially present and their distance from the corridor. The locations of these sites are shown on **Figure 4-6** additional details in **Table 4-3**.

Table 4-3: Sites of Interest

Facility name	Facility Address	Environmental Interest
Mark's Pest Control	5087 Longhill Road	Insect Repellant/Chemical Storage
TAC Auto Clinic	4166 Longhill Road	Auto Repair- Auto Salvage
7-Eleven ®	5534 Centerville Road	Gas Station with Underground Storage Tanks
Sunrise Food Mart	4854 Longhill Road	Gas Station with Underground Storage Tanks

Kimley-Horn recommends conducting a Corridor Hazardous Materials Reconnaissance Survey (CHMRS) at least 8 months prior to any construction. The CHMRS can help identify known or suspected areas of subsurface contamination and potential locations of unknown underground storage tanks in or immediately adjacent to the anticipated limits of construction which may be encountered and would require special handling or disposal of soil or groundwater during construction. While not typically a source of hazardous wastes, contamination from petroleum products and chemicals stored at these sites can adversely affect the local soil and groundwater within the vicinity of these types of facilities. A CHMRS and limited soil and groundwater sampling may be undertaken during project design to identify the potential for and extent of subsurface contamination within the ultimate proposed limits of the project.

Section 4.7 Environmental Summary

Based on the background data collected and observations during field reconnaissance, it is recommended that a wetland delineation be performed and confirmed with the USACE for determination on exact location of wetlands and waters within the project corridor. If roadway widening and/or associated stormwater management improvements are pursued along the corridor, any encroachment into wetlands and streams will require the submittal of a permit application to the USACE, DEQ, and VMRC for applicable wetland and water quality permits. During plan development, efforts should be made to avoid and minimize impacts to wetlands and waters. Justifications for unavoidable impacts will need to be developed for inclusion in the permit submittal.

If wetlands and water quality permits are required as part of the permitting process, the regulatory agencies will be required to consult with DGIF, DCR, and the United States Fish and Wildlife Service (USFWS) regarding potential impacts to federal and state threatened and endangered species if such species are documented within two miles of the study area.

Additional coordination with DGIF, DCR, and USFWS regarding the potential habitat for the Mabee's salamander (*Ambystoma mabeei*) and small whorled pogonia (*Isotria medeoloides)* may be required as part of the permitting process. Although not currently identified within the immediate vicinity of the study area, if a bald eagle nest is identified within closer proximity in the future, corridor design activities should also be coordinated with DGIF and USFWS.

Based on the response by DCR's Division of Natural Heritage, coordination is recommended to avoid impacts to protected areas and species. Inventories of state and federally listed threatened and endangered species should be undertaken along the project corridor to determine their presence or potential presence and to use in the project water quality permit application packages.

Archeological and architectural evaluations should occur within the project APE as determined by the preferred design and the findings of these studies coordinated with the SHPO. The USACE and DEQ will also coordinate with the SHPO regarding potential project impacts on cultural resources during the wetlands and water quality permitting. If corridor improvements are proposed that impact these archeological sites, SHPO will recommend additional studies or treatment measures, as necessary. Should the SHPO make such recommendations, Kimley-Horn recommends coordinating the additional studies and development of treatment measures with the James City County Planning Department.

A Corridor Hazardous Materials Reconnaissance Survey is recommended to identify potential locations of unknown underground storage tanks and known or suspected areas of subsurface contamination within or immediately adjacent to the proposed limits of construction which may be encountered by the contractor and would require special handling or disposal during construction. A Phase I Environmental Site Assessment should be conducted on any parcels being acquired for ROW to address the "innocent landowner defense" provision of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, and meet the "All Appropriate Inquiry" (AAI) rule into the ownership and uses of the property in preparation of due diligence investigations under the Brownfields Revitalization Act of 2002.



Chapter 5.0 Future Traffic Volume Projections

Section 5.1 Background

Longhill Road is a key link in James City County's roadway network, serving commuters that live and work within the study area as well as those who travel through the corridor. The need for Longhill Road corridor improvements is based on traffic operations, safety, and mobility. At the forefront is the volume of traffic the roadway accommodates today. Existing daily traffic volumes are beginning to reach or exceed the ideal operational capacity of the roadway. Intersections and segments of the corridor are characterized by deteriorating traffic operations under peak hour conditions. In addition, approved or planned development within the corridor and expected growth in the general vicinity of the study area will result in increased traffic volumes and additional demand on the roadway network. With traffic volumes expected to increase over time, the need for improvements is further confirmed.

For purposes of this study, existing traffic patterns were assumed to remain constant through 2034 under both no-build and build conditions Although travelers along the corridor likely will experience overall improved operational conditions through the introduction of additional capacity (i.e., roadway widening from two to four lanes, turn-lane improvements at intersections, and improved signal coordination), overall travel patterns are not expected to change from those that exist today.

The discussion of future traffic volumes summarized in this section is documented in full in the "Longhill Road Corridor Study Traffic Projection Methodology Memorandum" (January 2014) included in the **Appendix D**.

Section 5.2 Development of Growth Rates

To establish future (year 2034) traffic volume projections within the study area, annualized background growth rates were established for Longhill Road, a segment of Olde Towne Road, and a segment of Centerville Road. The following resources were used in the development of these growth rates:

- Historical VDOT Annual Average Daily Traffic (AADT) volume estimates
- Data obtained from the 2009 Base Year and 2034 Horizon Year Hampton Roads Regional Travel Demand Models (TDM):
- James City County staff provided transportation analysis zone (TAZ) socio-economic data
- Data associated with approved and anticipated developments within the study area.

5.2.1 Historical VDOT Annual Average Traffic Volume Estimates

Based on historical data from VDOT's daily traffic volume estimates, annual growth rates were calculated for the study corridor. Annual average daily (AADT) traffic volumes were compiled from 2001 to 2004 and from 2009 to 2012 for Longhill Road between Centerville Road (State Route 614) and Ironbound Road (State Route 615) to identify historical traffic volume trends along the study area corridor. (Because of the recession and decreased economic growth, the years of 2005 through 2008 were excluded from the comparison to decrease the likelihood of outliers or atypical growth patterns within the data.) **Table 5-1** shows the calculated annual growth rates for Longhill Road based on the VDOT historical traffic data.

Table 5-1: VDOT Historical Annual Average Growth Rate

Route	Segment	Annual Growth Rate (2001-2004)	Annual Growth Rate (2009-2012)
Longhill Road (Route 612)	Centerville Road (State Route 614) to Warhill Trail (State Route 830)	+7.68%	+0.03%
	Warhill Trail (Route 830) to Ironbound Road (Route 615)	+2.52%	-1.96%

5.2.2 Hampton Roads Regional Travel Demand Model

Projected daily volumes from the 2009 base year and 2034 horizon year of the Hampton Roads Transportation Planning Organization (HRTPO) travel demand model (TDM) were reviewed. The future volumes were taken from multiple model links that comprise the roadways within the study area. **Table 5-2** shows the compared model links as well as the 2009 and 2034 daily traffic volume assignment, the percent change between model assignment years, and the average percentage change along select corridor segments.

Table 5-2: Travel Demand Model Traffic Projections

Segment	Average Percent Change
Longhill Road (by segment)	
Centerville Road (Route 615) to Warhill Trail (Route 830)	+1.60%
Warhill Trail to Olde Towne Road (Route 658)	+0.58%
Olde Towne Road to Williamsburg West Drive	+0.55%
Williamsburg West Drive to Route 199 Interchange	+0.82%
Route 199 Interchange Ramps	+1.57%
Olde Towne Road	+0.13%
Centerville Road	+2.04%

5.2.3 Socioeconomic Data

In addition to the historical volume data and future projection model volumes, the County provided socio-economic data (population, households, and employment) for the study area transportation analysis zones. Data was provided for the 2009 base year, the current 2034 model horizon year, and the 2040 horizon year. (The 2040 socio-economic data were available as a result of the County recently preparing updated projections for use in the development of the 2040 Hampton Roads TDM and the 2040 Hampton Roads Long Range Transportation Plan.)

The study area is currently located within the boundaries of the following James City County TAZ's: 1327, 1328, 1339, and 1341 as shown in **Figure 5-1**. From these TAZ's, the raw change and annual growth rates between 2009 and 2040 were calculated for each type of socio-economic data (population, households, employment) to determine the projected future traffic volumes as shown in **Table 5-3**.

Table 5-3: James City County Traffic Analysis Zone Socio-Economic Data (Population and Households)

TAZ Data (2009 - 2040)	Population		Residential Households		Total Employment	
	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate	Raw Change	Annual Growth Rate
TAZ 1327	+1,956	+1.60%	+490	+1.47%	+852	+1.54%
TAZ 1328	+844	+4.97%	+242	+3.14%	+307	+4.90%
TAZ 1339	+2,996	+1.61%	+881	+1.49%	+1,331	+1.91%
TAZ 1341	-492	-0.40%	+248	+0.34%	-223	-0.45%
Total	**+5,304**	**+1.45%**	**+1,862**	**+1.33%**	**+2,267**	**+1.54%**

5.2.4 Planned or Approved Land Development

Anticipated and approved developments within the study area were identified during discussions with the James City County and VDOT staff. The following commercial and recreational developments were added to the background traffic growth:

- Christian Life Center Expansion
- King of Glory Expansion
- Williamsburg Business Center Expansion
- Freedom Park Expansion
- Warhill Sports Complex Expansion

Table 5-4 displays the anticipated land uses within each of the identified commercial and recreational developments.

Table 5-4: Anticipated Developments

Development	Use	Proposed Units
Christian Life Center Expansion*	Education	+ 25,000 SF
	Day Care	
King of Glory Expansion	Sanctuary	+ 184 Seats
	Office	+ 9 Employees
	Day Care	+ 3 Students
Williamsburg Business Center Expansion	Office	+ 78,400 SF
Freedom Park Expansion**	Recreation	-
Warhill Sports Complex Expansion	Recreation	6 Baseball/Softball Fields 1 Football Field 12 Multi-Purpose Fields 1 Multi-Use Trail

** These will only be conducted during church service hours; therefore, additional traffic generated from this expansion will occur during off-peak hours.*

***As determined by the County Parks and Recreation staff, any new future attractions at Freedom Park will result in a minimal number of new trips being generated to/from this site during the peak hours.*

Similarly, approved but unbuilt residential developments were considered in formulating the annualized growth rates and subsequent 2034 traffic volumes projections. The following approved but undeveloped residential units were identified during discussions with the James City County staff:

- Burlington Woods
- Ford's Colony
- Season's Trace
- Windsor Forest
- Williamsburg West

The combined information on socioeconomic changes and additional development was then used to make adjustments to traffic projections for the TAZs in the project area. Further details of this process are provided in the "Longhill Road Corridor Study Traffic Projection Methodology Memorandum" (January 2014) included in the **Appendix D**.



Longhill Road Corridor Study

James City County

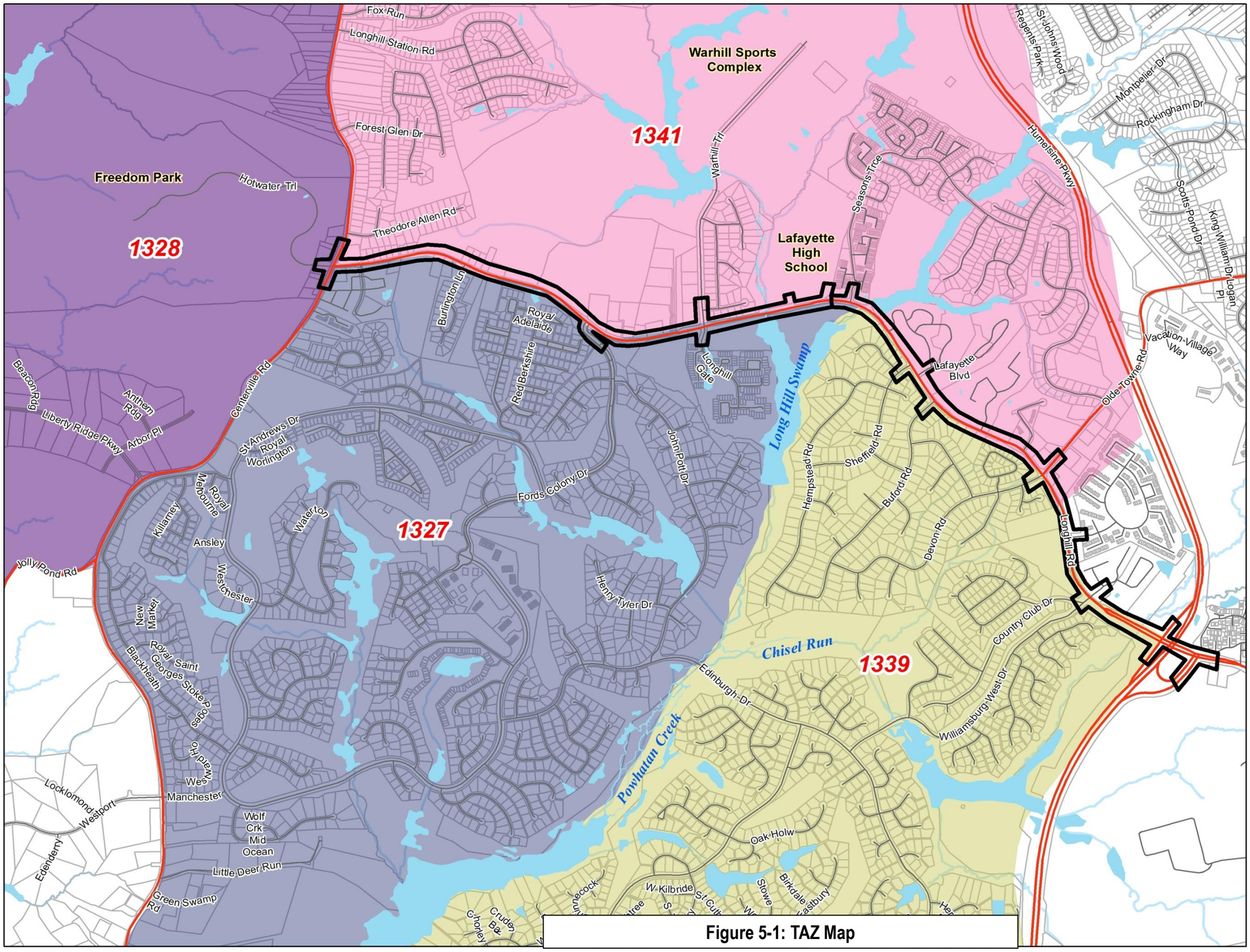


Figure 5-1: TAZ Map

Kimley»Horn

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 450 Feet

Data Source: James City County

Section 5.3 Market Assessment

The intent of the market assessment is to provide affirmation that the land use plan is a market defensible expectation of future land development in the vicinity of the corridor study area, and create an enhanced degree of confidence in the traffic projection methodology. To conduct this supplemental assessment of the market area, the Longhill Road Corridor Study team included the services of Chmura Economics & Analytics.

5.3.1 Definition of Corridor and Market Area

The Longhill Road Corridor is defined as the road itself plus key intersections with other roads (see yellow area in **Figure 5-4**).[1] For the analysis of market conditions involving population and businesses, the market area of the road should be defined as the area having maximum impact on Longhill Road traffic. In this study, the Longhill Road Market Area is much larger than the Longhill Road Corridor, and will include census tracts 80206, 80301, 80205, and 80402.

5.3.2 Population Growth

Population growth is an important indicator of an expanding economy. Businesses expanding in a given region attract new people into that region. Further, the influx of population into an area stimulates the housing market, retail businesses, and overall consumption in the region—resulting in a larger tax base for the community.

In the 2000 Census, the Longhill Road Market Area included only three census tracts: 80201, 80301, and 80402 (total population 17,795). By the 2010 census, tract 80201 had been split into two new tracts: 80205 and 80206. The total population among the four tracts was 28,369 (**Figure 5-2**). The population in the market area grew at an average rate of 4.7% per year. In James City County, the population grew from 48,102 in 2000 to 67,009 in 2010, averaging 3.4% growth per year (**Figure 5-3**).

Figure 5-2: Population by Census Tract

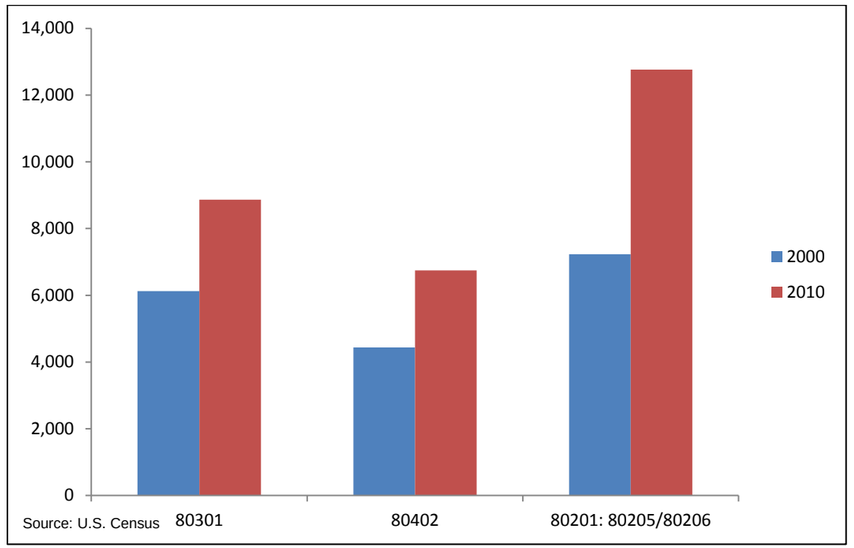
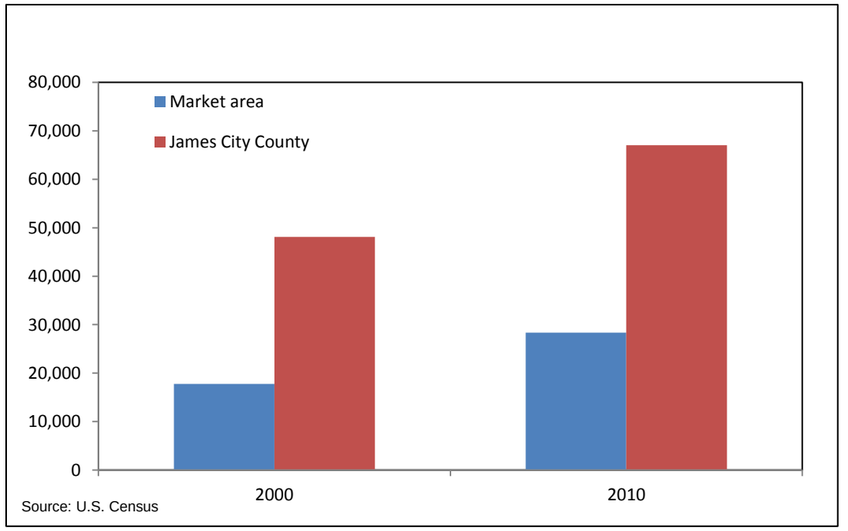


Figure 5-3: Population of Market Area and James City County



[1] The corridor was defined by Kimley-Horn. The choices of the Census Tract as a basic analysis unit, and the particular Census Tracts to be included in the market area were determined by Chmura and Kimley-Horn.



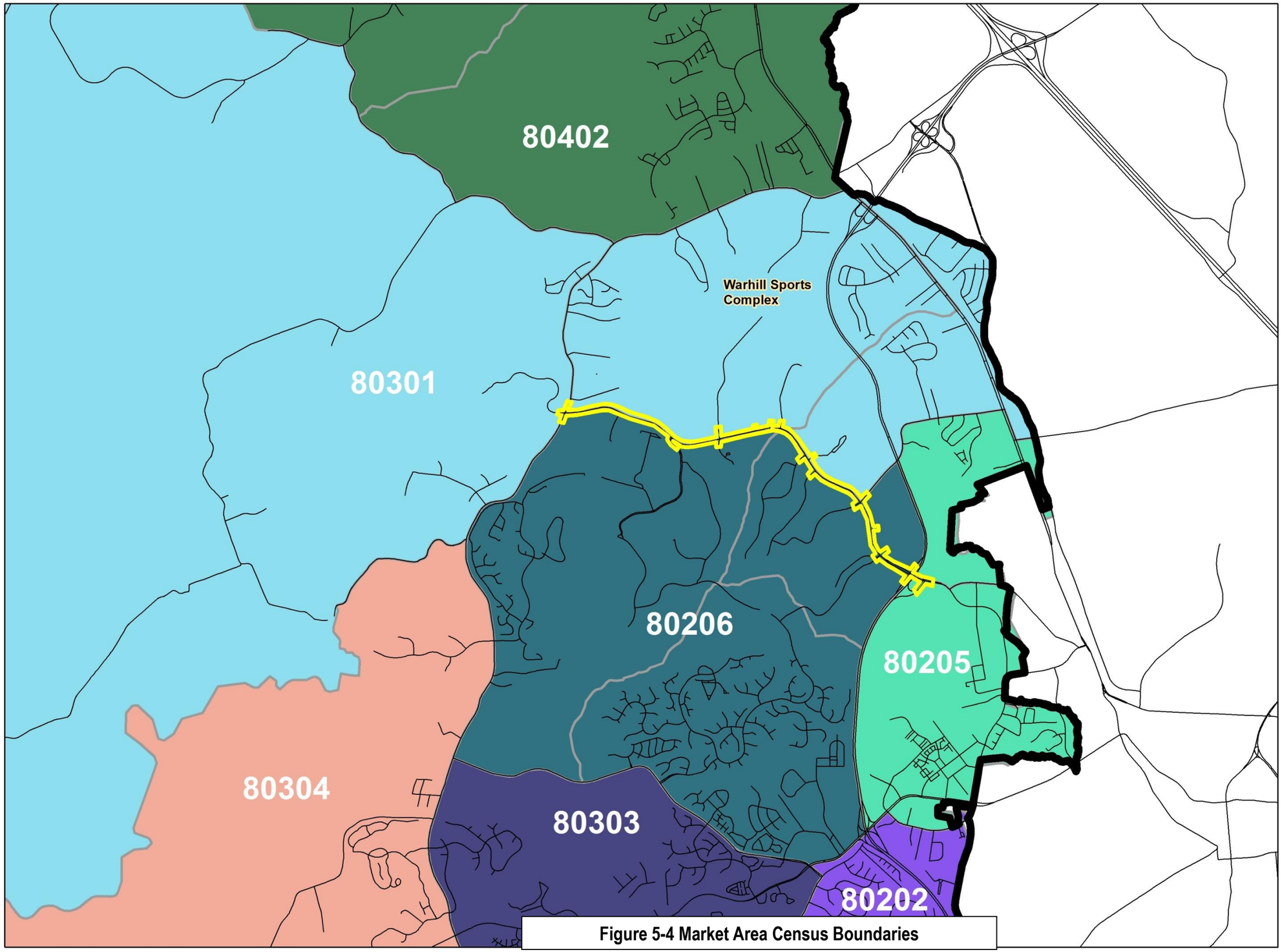


Figure 5-4 Market Area Census Boundaries

The Longhill Road Market Area made up about 37 percent of the population of James City County in 2000; in 2010, that share had increased to over 42 percent as see in **Table 5-5**. The population in the market area has grown much faster than the county as a whole, as many major developments such as New Town took place therein.

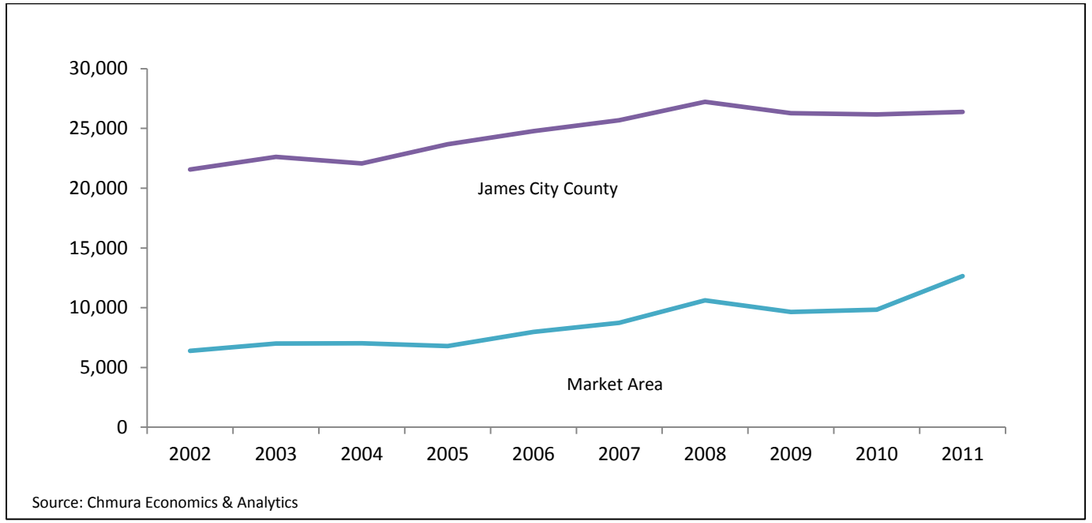
Table 5-5: Population Changes in Market Area and James City County

Area	2000	2010	Number Change (2000-10)	Percent Change (2000-10)
Market Area	17,795	28,369	10,574	59.4%
Rest of County	30,307	38,640	8,333	27.5%
Total County	48,102	67,009	18,907	39.3%
Market Area % of County	37.0%	42.3%		
Source: U.S. Census				

5.3.3 Wage and Salaried Employment

Total wage and salaried employment in the Longhill Road Market Area grew between 2002 and 2011, increasing from 6,394 in 2002 to 12,655 in 2011 as see in **Figure 5-5**. That is equivalent to 7.9% growth per year. Meanwhile, the total wage and salaried employment of James City County grew from 21,560 in 2002 to 26,985 in 2012, at 2.3% growth per year.[2] While both the market area and the county suffered a loss of employment as a result of the recession of 2007 to 2009, the county's employment has not yet reached its pre-recession peak—while employment in the Longhill Road Market Area registered a sharp increase from 2010 to 2011. The increases in market area employment from 2010 to 2011 concentrated in education and retail sectors. The county opened two new schools (Lois Hornsby Middle School and J Blaine Elementary School) in October 2010 in Census Tract 80301. The southern end of Census Tract 80205 includes New Town development which continues to add retail businesses to the market area. Those trends added considerable new employment to the market area, resulting in an uptick in employment in 2011.

Figure 5-5: Total Employment by Year



5.3.4 Industry Mix

The overall industry mix in James City County has changed minimally over the past decade, but there have been significant shifts in industry mix within the Longhill Road Market Area. In 2011, the largest industry sector in the market area was retail, with 22.8% of workers in this sector. This was followed by education (16.4%), healthcare and social assistance (16.1%) and accommodation and food services (10.9%). This is because the market area includes some of the largest retail complexes in the Greater Williamsburg Region, such as New Town, Monticello Market Place, and Windsormeade Market Place. Compared with the industry mix in 2002, the main changes were the decline in employment share in retail and increase in employment share for education and healthcare. Compared to the market area, James City County has relatively less employment in retail (13.7% as opposed to 22.8% in the market area), but a much higher share in entertainment and recreation (14.2% as opposed to 5.1% in the market area). Busch Gardens and other amusement parks contribute to the high concentration of entertainment and recreation workers elsewhere in the James City County.

[2] The census tract employment is based on employment data from Quarterly Census of Employment and Wages from the Bureau of Labor Statistics. It does not include proprietors.



Table 5-6: Employment Share by Market Industry Sector

Industry	2002		2011	
	Longhill Market Area	James City County	Longhill Market Area	James City County
Agriculture, Forestry, Fishing and Hunting	0.1%	0.2%	0.0%	0.1%
Mining, Quarrying, and Oil and Gas Extraction	0.0%	0.0%	0.0%	0.0%
Utilities	1.4%	0.8%	0.7%	0.7%
Construction	7.7%	7.0%	5.9%	5.7%
Manufacturing	9.0%	10.2%	3.7%	6.3%
Wholesale Trade	2.3%	1.6%	1.5%	2.9%
Retail Trade	30.1%	12.7%	22.8%	13.7%
Transportation and Warehousing	1.3%	1.0%	0.4%	3.1%
Information	1.7%	1.0%	1.4%	0.9%
Finance and Insurance	1.2%	1.1%	1.6%	1.6%
Real Estate and Rental and Leasing	6.9%	3.1%	3.1%	2.6%
Administrative and Support and Waste Management and Remediation Services	3.2%	4.1%	2.3%	4.0%
Educational Services	0.1%	7.2%	16.4%	8.5%
Health Care and Social Assistance	8.6%	11.1%	16.1%	13.0%
Arts, Entertainment, and Recreation	5.5%	16.5%	5.1%	14.2%
Accommodation and Food Services	10.5%	12.3%	10.9%	11.1%
Other Services (except Public Administration)	4.4%	2.3%	2.1%	1.8%
Public Administration	1.2%	3.3%	1.0%	3.0%
Source: Chmura Economics & Analytics				

5.3.5 Population and Employment Projections

While the analysis of existing marketing conditions in Sections 5.3.2 through 5.3.4 focuses on the Longhill Road Market Area, the analysis of factors influencing future market conditions will be examined from the entire county level.[3] As a reference, historic and projected data for greater Williamsburg region—City of Williamsburg, James City County, and York County were also provided.

According to the 2010 Census, the Longhill Road Market Area had a population of 28,369, accounting for 42% of the county population of 67,009. Based on the 2012 estimate, James City County had a population of 69,546.[4] From 2000 to 2012, the county population grew at an average rate of 3.1% per year—faster than the averages of 1.2% for the state and 2.2% for the Williamsburg region (**Table 5-7**).

Table 5-7: Historic Residential Population

Localities	2000	2010	2012	Annual Growth Rate 2000-2012
James City County	48,102	67,009	69,546	3.1%
Williamsburg Region	116,397	146,541	150,477	2.2%
Source: US Census, Weldon Cooper Center, and Chmura				

In Virginia, several state and local government agencies provide population projections. Both Hampton Roads Planning District Commission (PDC)[5] and the Virginia Employment Commission (VEC) made projections for James City County.[6] Chmura bases its 20-year projection (for 2032) on the VEC projection, as it is the official projection of the state.

Table 5-8: Resident Population Projection

Localities	2032	Total Change in Number (2012-2032)	Annual Growth Rate 2012-32
James City County	114,081	44,535	2.5%
Williamsburg Region	219,494	69,017	1.9%
Source: US Census, Weldon Cooper Center, and Chmura			

It is projected that the future population in the county will be growing at an average rate of 2.5% per year in the next 20 years (**Table 5-8**). This projected population growth is slightly lower than the growth rate of the county in the past decade, reflecting overall demographic trends in the United States that people tend to get married later and have fewer children. In addition, the county experienced a development boom in the 2000s, attracting a large number of retirees. The fast growth in the new residential developments is not sustainable and is expected to slow down as available land for development become scarce. It is projected that the total population in James City County in 2032 will be 114,081.

[3] While people and businesses in the Greater Williamsburg Region (James City County, York County, and the City of Williamsburg) can easily move to the real estate developments in and around the Longhill Corridor, Chmura's analysis indicates that, based on current population and employment projection, the population and employment growth of James City County alone are more than enough to fill the available parcels around the corridor. As a result, this projection will focus only on James City County.

[4] The 2012 population data were estimated by the Weldon Cooper Center of the University of Virginia, while 2000 and 2010 data were from the U.S. Census Bureau.

[5] Source: Hampton Roads PDC, available at: http://www.hrpdc.org/departments/economics/forecasting

[6] The actual projection was made by Weldon Cooper Center of University of Virginia under a contract with VEC. Source: https://www.vawc.virginia.gov/gsipub/index.asp?docid=359



It is projected that average household size in the county will decline slightly in the next 20 years, consistent with historic demographic trends. It is projected that the average county household size will be 2.41 in 2032. As a result, the total number of households in James City County is projected to be 47,406 in 2032. That means in the next 20 years, there is the potential for there to be 19,579 new households in the county, forming demand for additional housing in the county (**Table 5-10**).

Table 5-9: Historic Number of Households

Locality	2000	2010	2012	Annual Growth Rate 2000-12
James City County	19,003	26,860	27,877	3.2%
Williamsburg Region	42,622	55,437	56,949	2.4%
Source: US Census, Weldon Cooper Center, Hampton Roads PDC, and Chmura				

Table 5-10: Household Projections

Locality	2032	Total Change in Number (2012-2032)	Annual Growth Rate 2012-32
James City County	47,406	19,529	2.7%
Williamsburg Region	84,771	27,822	**2.0%**
Source: US Census, Weldon Cooper Center, Hampton Roads PDC, and Chmura			

5.3.6 Employment Projections

In 2010, there were 37,183 people working in James City County.[7] From 2000 to 2010, the employment in James City County grew 3.7% per year, higher than both the state average of 0.3% and regional average of 1.9%. The faster growth in the county is in contrast with job performance in the City of Williamsburg, whose employment declined at the annual rate of 1.9% from 2000 to 2010.[8] That indicates jobs and businesses in the Williamsburg region have migrated away from the city and into the suburban counties (**Table 5-11**).

Table 5-11: Historic Employment

Locality	2000	2010	Annual Growth Rate 2000-10
James City County	25,943	37,183	3.7%
Williamsburg Region	74,558	90,260	1.9%
Source: BEA, Hampton Roads PDC, and Chmura			

[7] Ibid. This is based on place of work, not residence. Please note that this number is larger than the wage and salaried employment of the county presented in Section 3, as this employment figure includes proprietors. Since census tract-level employment is only available for wage and salaried employment, Chmura uses this definition in Section 3 to be consistent in comparison.
[8] Ibid.

Based on projections by Hampton Roads PDC, it is expected that the future employment in the county will be growing at a rate of 1.5% per year in the next 20 years (**Table 5-12**). This projected employment growth is lower than the growth rate of the county in past decades. As reflected in overall slowdown of population growth in the next two decades, the employment growth in the county is expected to moderate also. It is projected that total employment in James City County will be 51,711 in 2032.

Table 5-12: Total Employment Projection

Locality	2032	Total Change in Number (2010-2032)	Annual Growth Rate 2010-32
James City County	51,711	14,528	1.5%
Williamsburg Region	120,964	30,704	1.3%
Source: BEA, Hampton Roads PDC, and Chmura			

Total employment in James City County was further broken down into four major industry sectors—retail, office, industrial, and other.[9] Different industries have different space requirements for its workers. As a result, a projection of employment in different sectors will help understand the future demand for retail, office, and industrial space in the county.

In 2010, among the four major sectors, office employment was the largest sector, accounting for 28% of total county employment; this was followed by retail, other, and industrial employment. Based on a study by the Hampton Roads PDC, in the next 20 years, retail employment will register modest growth while office and industrial employment are projected to grow faster than overall employment. The James City County employment projection for 2032 indicates that there will be 22,884 in the office sector; 10,378 in the retail sector; 5,588 in the industrial sector; and 12,861 in other sectors (**Table 5-13**).

Table 5-13: Employment Projection by Sector

Sector	2010	2032	Change in Total Number (2010-2032)	Annual Growth Rate 2010-32
Retail	9,074	10,378	1,304	0.6%
Office	16,445	22,884	6,439	1.5%
Industrial	2,443	5,588	3,145	3.8%
Other	9,221	12,861	3,640	1.5%
County Total	37,183	51,711	14,528	1.5%
Source: BEA, Hampton Roads PDC, and Chmura				

[9] Retail employment includes those in the retail trade as well as food services. Industrial employment includes those working in manufacturing, utility and mining. Office employment includes those in professional and business services, financial services, insurance, public administration, and others such as information, management of companies and enterprises, and administrative and waste services. Industries that are not classified as retail, industrial and office include agriculture, forestry, fishing and hunting, wholesale trade, transportation and warehousing, education, and healthcare and social assistance.

5.3.7 Other Economic Development Factors

Major economic development efforts can also have significant impacts on future population and employment growth in James City County.

However, based on James City County's Comprehensive Plan, the economic development goal of the county is to "build a diverse, balanced local economy that supports basic needs of all segments of the community and contributes positively to the quality of life." The plan calls for continuing to "diversify James City County's economy and workforce, encourage a balanced mixture of commercial, industrial and residential land uses in a pattern and a pace of growth supportive of the county's overall quality of life, fiscal health, and environmental quality." The plan also calls for support of the tourism industry and promotion of James City County as a historic and unique destination in the region. In addition, the plan encourages the diversification of James City County's economy by recommending the establishment of a technology zones to attract technology jobs to the county.

Based on the county's economic development plan, county leaders envision a pace of growth that seems to be in line with the population and employment projection published by the Virginia Employment Commission and Hampton Roads PDC.

5.3.8 Market Assessment Summary

With its strategic location along the I-64 corridor, James City County is in the path of growth moving north from the Hampton Roads market. The County is less than an hour from downtown Richmond and the heavily-traveled I-95 corridor. Residential development is being driven by proximity to employment in Newport News, Hampton, and Norfolk, waterfront recreational opportunities along the James and York rivers, and cultural, historical, and entertainment amenities including Williamsburg and Busch Gardens.

Longhill Road is one of the primary growth corridors in central James City County, linking Centerville Road to Richmond Road. Anchors along or near the corridor include Fords Colony Country Club and Warhill Sports Complex, New Town to the south, and the College of William and Mary, and Colonial Williamsburg to the east.

The four Census tracts defining the market area around the Longhill Road corridor grew 4.8% annually between 2000 and 2010, reaching a total of 28,369 people. This rate of increase was well above 3.4% for James City County. As a result, the market area's share of James City County's population increased from 37% to 42% over the ten-year period. This momentum is expected to continue, with the Longhill Road corridor market area well-positioned to capture a significant share of the forecasted 44,500 net new residents in the County by 2032.

The resident profile of the Longhill Road market area is changing. Based on recent demographic trends, and proposed housing developments, new residents on average will be younger, with higher incomes and greater educational attainment than the existing population. This comparatively affluent growth will drive demand for retail, restaurants, entertainment/recreation, and professional services in the Longhill Road corridor.

Between 2002 and 2010, employment in the Longhill Road market area increased 7.9% annually, which was more than triple the 2.3% rate for overall James City County. While retail is still the largest economic sector in the market area, representing 23% of jobs, the fastest growing industries over the last decade have been Education and Health Care/Social Assistance. This indicates an influx of higher paying professional jobs that occupy office, flex, and institutional space. With its regional access via Route 199, Richmond Road (U.S. Route 60) and I-64, the Longhill Road corridor will be competitive to absorb many of the 6,400 office-occupying jobs forecasted for James City County between 2010 and 2032.

Section 5.4 Results: Growth Rates and Future Traffic Volumes

5.4.1 Growth Rates

Based on the methods described in the Traffic Projection Methodology Memorandum and the subsequent supporting and consistent data findings from the market assessment, the growth rates in **Table 5-14** were recommended for use in developing future traffic volume projections for the Longhill Road corridor.

Table 5-14: Proposed Annualized Growth Rates

Route	Segment	Annual Growth Rate
Longhill Road (Route 612)	Centerville Road (Route 614) to Warhill Trail (Route 830)	2.00%
	Warhill Trail to Olde Towne Road (Route 658)	1.00%
	Olde Towne Road to Williamsburg West Drive	1.00%
	Williamsburg West Drive to Route 199 Interchange	1.00%
	Route 199 Interchange Ramps	1.50%
Olde Towne Road (Route 658)	All	1.00%
Centerville Road (Route 614)	All	2.00%

Horizon Year 2034 average weekday daily traffic volumes were developed by applying the growth rates to existing ADT volumes. This approach is based on the assumption that the rates developed as part of the corridor study take into account not only the growth captured and reflected in the TDM but also the daily trips associated with the identified approved developments. This same methodology also was used to obtain 2034 peak hour traffic volumes. Based on existing trip distributions and the anticipated future developments, growth rates were applied only to certain peak hour turning movements to more accurately reflect the anticipated future travel patterns within the study area. Also, lower growth rates were used for side streets given the generally built-out nature of the land use and low expected growth.

5.4.2 Future Traffic Volume Projections

Future traffic volume forecasts were developed using the growth rates shown in **Table 5-14**, projected in a linear manner from the existing base year of 2013 to the horizon year of 2034. The traditional linear methodology ideally addresses interim fluctuations in the economy or population despite changes (i.e., slowdowns, downturns, etc.) in economic growth or development. Using the linear projection, traffic volumes would increase overall by about 31.5% over the 21 year period between 2013 and 2034.

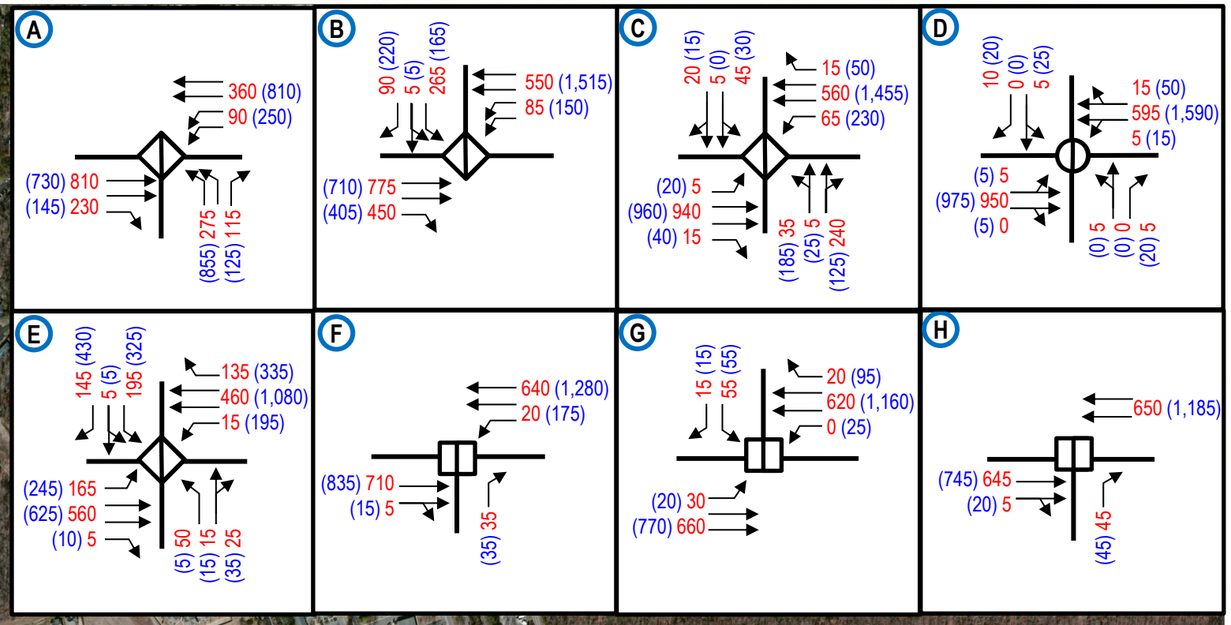
For reference, existing 2013 AM and PM peak hour intersection turning movement volumes and average weekday daily traffic volumes are shown in **Figure 3-3** and **Figure 3-4**. Horizon year 2034 traffic volume projections for AM and PM peak hour intersection turning movements and average weekday daily traffic volumes are shown in **Figure 5-6** and **Figure 5-7.**



Longhill Road Corridor Study

James City County





Legend

- Signalized Intersection
- Unsignalized Intersection
- Roundabout Intersection
- XX (XX) AM (PM) Approach Volumes
- XXXX Average Weekday Daily Traffic Volume (vpd)

Figure 5-6: Future (2034) Peak Hour Turning Movement Counts and Average Weekday Daily Traffic Volumes

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.



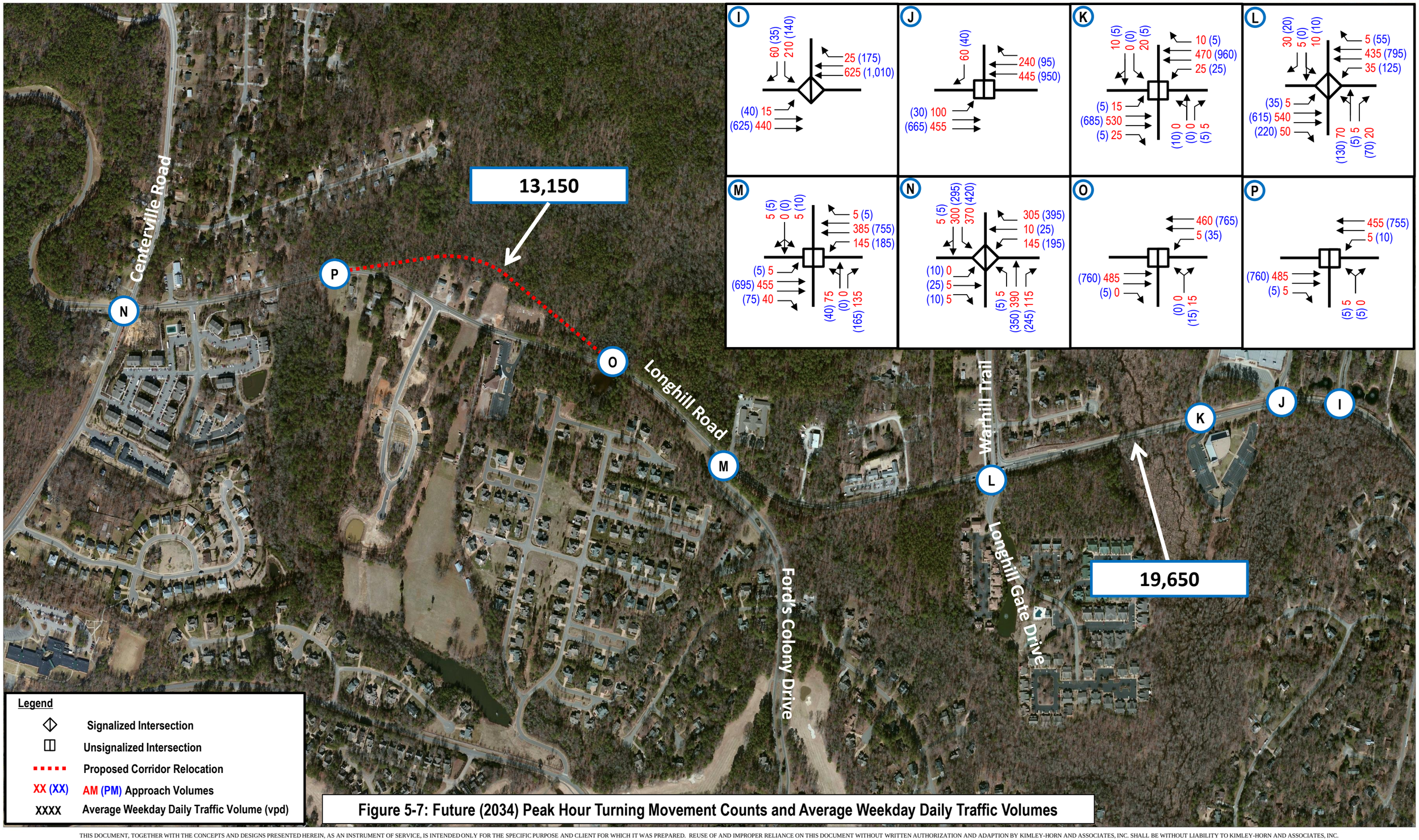


Figure 5-7: Future (2034) Peak Hour Turning Movement Counts and Average Weekday Daily Traffic Volumes

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.

5.4.3 Future Roadway Improvements

Based upon the results of both 2013 Existing conditions and 2034 No-Build conditions analyses, roadway improvements are required to mitigate anticipated congestion which will occur as traffic volumes increase along the corridor. The following intersection descriptions reflect the necessary lane configurations for the corridor to operate at acceptable levels of service under future conditions. The following improvements require modifications to traffic signal operations, lane stripping, turn lanes, etc. Detailed descriptions of the modifications required to fully accommodate the recommended improvements are provided in **Chapter 9.0**. **Figure 5-3** and **Figure 5-4** display the recommended laneage as described below.

Route 199 WB Off/On-Ramp and Longhill Road (Intersection A)

To support future traffic volumes, this signalized intersection should provide the following laneage:

- Route 199 WB Off-Ramp (northbound) – Two exclusive left-turn lanes and one exclusive right-turn lane
- Longhill Road (eastbound) – Two through lanes and one exclusive right-turn lane
- Longhill Road (westbound) – Two exclusive left-turn lanes and two through lanes

Route 199 EB Off/On-Ramp and Longhill Road (Intersection B)

To support future traffic volumes, this signalized intersection should provide the following laneage:

- Route 199 EB Off-Ramp (southbound) – One exclusive left-turn lane, one shared left-turn/through lane, and one exclusive right-turn lane
- Longhill Road (eastbound) – Two through lanes and one exclusive right-turn lane
- Longhill Road (westbound) – Two exclusive left-turn lanes and two through lanes

Williamsburg W. Drive/Lane Place and Longhill Road (Intersection C)

To support future traffic volumes, this signalized intersection should provide the following laneage:

- Williamsburg W. Drive (northbound) – One shared left-turn/through lane and one shared through/right-turn lane
- Lane Place (southbound) – One shared left-turn/through lane and one shared through/right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane
- Longhill Road (westbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane

Olde Towne Road and Longhill Road (Intersection E)

To support future traffic volumes, this signalized intersection should provide the following laneage:

- Devon Road (northbound) – One exclusive left-turn lane and one shared through/right-turn lane
- Olde Towne Road (southbound) – One exclusive left-turn lane, one shared left-turn/through lane, and one exclusive right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane
- Longhill Road (westbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane

Centerville Road and Longhill Road (Intersection N)

To support future traffic volumes, this signalized intersection should provide the following laneage:

- Centerville Road (northbound) – One exclusive left-turn lane, one through lane, and one exclusive right-turn lane
- Olde Towne Road (southbound) – One exclusive left-turn lane and one shared left-turn/through lane
- Longhill Road (eastbound) – One exclusive left-turn lane, one through lane, and one exclusive right-turn lane
- Longhill Road (westbound) – One exclusive left-turn lane, one through lane, and one exclusive right-turn lane

Williamsburg Plantation and Longhill Road (Intersection D)

To support future traffic volumes, this currently unsignalized intersection should be a two-lane roundabout and provide the following laneage:

- Williamsburg Plantation Drive (northbound) – One shared left-turn/through lane and one exclusive right-turn lane
- Williamsburg Plantation Drive (southbound) – One shared left-turn/through lane and one exclusive right-turn lane
- Longhill Road (eastbound) – One shared left-turn/through lane and one shared through/right-turn lane
- Longhill Road (westbound) – One shared left-turn/through lane and one shared through/right-turn lane

Buford Road and Longhill Road (Intersection F)

To support future traffic volumes, this unsignalized intersection should provide the following laneage:

- Buford Road (northbound) – One exclusive right-turn lane
- Longhill Road (eastbound) – One shared left-turn/through lane and one through lane
- Longhill Road (westbound) – One exclusive left-turn lane and two through lanes

Lafayette Boulevard and Longhill Road (Intersection G)

To support future traffic volumes, this unsignalized intersection should provide the following laneage:

- Lafayette Boulevard (southbound) – One exclusive left-turn lane and one exclusive right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane and two through lanes
- Longhill Road (westbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane



Sheffield Road and Longhill Road (Intersection H)

To support future traffic volumes, this unsignalized intersection should provide the following laneage:

- Shefflied Road (northbound) – One exclusive right-turn lane
- Longhill Road (eastbound) – One shared left-turn/through lane and one through lane
- Longhill Road (westbound) –Two through lanes

Season's Trace and Longhill Road (Intersection I)

To support future traffic volumes, this currently unsignalized intersection should be signalized and provide the following laneage:

- Season's Trace (southbound) – One exclusive left-turn and one exclusive right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane and two through lanes
- Longhill Road (westbound) – Two through lanes and one exclusive right-turn lane

Lafayette High School Entrance and Longhill Road (Intersection J)

To support future traffic volumes, this unsignalized intersection should provide the following laneage:

- Lafayette High School Entrance (southbound) – One exclusive right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane and two through lanes
- Longhill Road (westbound) – Two through lanes and one exclusive right-turn lane

Lafayette High School Bus Loop and Longhill Road (Intersection K)

To support future traffic volumes, this unsignalized intersection should provide the following laneage:

- Christian Life Center (northbound) – One shared left-turn/through lane and one exclusive right-turn lane
- Lafayette High School Bus Loop (southbound) – One exclusive left-turn lane and one shared through/right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane
- Longhill Road (westbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane

Warhill Trail and Longhill Road (Intersection L)

To support future traffic volumes, this currently unsignalized intersection should be signalized and provide the following laneage:

- Longhill Gate Road (northbound) – One shared left-turn/through lane and one exclusive right-turn lane
- Warhill trail (southbound) – One shared left-turn/through lane and one exclusive right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane
- Longhill Road (westbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane

Ford's Colony Drive and Longhill Road (Intersection M)

To support future traffic volumes, this unsignalized intersection should provide the following laneage:

- Ford's Colony Drive (northbound) – One exclusive left-turn lane and one shared through/right-turn lane
- Dominion Village (southbound) – One shared left-turn/through/right-turn lane
- Longhill Road (eastbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane
- Longhill Road (westbound) – One exclusive left-turn lane, two through lanes, and one exclusive right-turn lane



Chapter 6.0 Future Conditions Analysis

Section 6.1 Arterial Level of Service

Roadway level of service capacity analyses were performed for weekday AM and PM peak hours under the 2034 future traffic conditions. These analyses were performed using *Synchro Professional 8.0* which uses methodologies contained in the *2000 Highway Capacity Manual (HCM)* [TRB Special Report 209, 2000].

Using the traffic volumes forecasted in **Section 5.3.2** along with the recommended improvements in described in **Chapter 9.0**, arterial level of service was determined for the study area's primary roadways. Level of service describes traffic conditions at an intersection or on a roadway. LOS ranges from A to F—A indicating a condition of little or no congestion and F indicating a condition with severe congestion, unstable traffic flow, and stop-and-go conditions. For roadways, the arterial LOS is determined based on the arterial speed and distance between intersections. LOS D or better is generally considered acceptable. **Table 6-1** and **Table 6-2** summarize the results of the arterial LOS analyses for Longhill Road under 2034 No-Build and Build conditions. Detailed reports are presented in **Appendix E**.

Table 6-1: 2034 Horizon Arterial Level of Service – Eastbound Longhill Road

Cross Street		2034 No-Build				2034 Build			
		AM		PM		AM		PM	
		ATS (mph)	LOS	ATS (mph)	LOS	ATS (mph)	LOS	ATS (mph)	LOS
From	Longhill Gate Road	-	-	-	-	42.2	A	38.3	A
To/From	Season's Trace	-	-	-	-	31.6	B	35.9	A
To/From	Olde Towne Road	37.6	A	20.6	D	38.0	A	34.8	B
To/From	Williamsburg W. Drive/Lane Place Drive	6.4	F	3.8	F	20.9	D	14.0	E
To/From	Humelsine Parkway (Route 199) EB Off/On-Ramp	21.9	D	21.6	D	26.9	C	30.6	B
To	Humelsine Parkway (Route 199) WB Off/On-Ramp	14.3	E	11.2	F	17.9	D	13.3	E
Overall		**18.9**	**D**	**11.4**	**F**	**33.9**	**B**	**30.8**	**B**
Average Travel Speed (ATS)									

Table 6-2: 2034 Horizon Arterial Level of Service – Westbound Longhill Road

Cross Street		2034 No-Build				2034 Build			
		AM		PM		AM		PM	
		ATS (mph)	LOS	ATS (mph)	LOS	ATS (mph)	LOS	ATS (mph)	LOS
From	Humelsine Parkway (Route 199) WB Off/On-Ramp	28.8	B	25.8	C	29.9	B	22.1	C
To/From	Humelsine Parkway (Route 199) EB Off/On-Ramp	21.8	D	17.7	D	19.6	D	13.8	E
To/From	Williamsburg W. Drive/Lane Place Drive	17.9	D	1.2	F	30.3	B	20.6	D
To/From	Olde Towne Road	18.1	D	2.6	F	17.6	D	15.1	E
To/From	Season's Trace	-	-	-	-	37.8	A	40.0	A
To/From	Warhill Trail	-	-	-	-	34.6	B	27.6	C
To	Centerville Road	33.0	B	29.7	B	33.3	B	32.1	B
Overall		**27.3**	**C**	**6.7**	**F**	**31.3**	**B**	**27.4**	**C**
Average Travel Speed (ATS)									

Overall, arterial LOS and associated operations along Longhill Road are expected to improve, primarily as a result of the additional travel lane capacity and enhanced traffic signal operations.



Section 6.2 Intersection Level of Service

Year 2034 level of service analyses for signalized and unsignalized intersections in the AM and PM peak hours were performed for all study area intersections. Intersections were analyzed with existing laneage (No-Build conditions) as well as with recommended improvements (Build condition) as outlined in **Chapter 9.0**. *Synchro Professional 8.0*, which uses methodologies contained in the *2000 Highway Capacity Manual (HCM)* [TRB Special Report 209, 2000], was used for all intersection analyses. To supplement the analysis, *SimTraffic 8.0* simulations were performed to model anticipated operations along the corridor and at study area intersections.

Table 6-4 summarizes levels of service for both AM and PM peak hours and delays for each study area intersection under 2034 No-Build and 2034 Build scenarios. Full LOS analysis results for all study area intersections are provided in **Table 6-5** through **Table 6-18**. Overall intersection LOS operations are summarized as well as per approach LOS for signalized intersections and per lane LOS for unsignalized intersections. Detailed reports are presented in **Appendix E**.

Table 6-3: Signalized and Unsignalized Intersection HCM LOS Criteria

LOS	Intersection Delay per Vehicle(s)	
	Signalized	Unsignalized
A	0.0 - 10	0.0 - 10
B	>10 - 20	>10 - 15
C	>20 - 35	>15 - 25
D	>35 - 55	>25 - 35
E	>55 - 80	>35 - 50
F	>80	>50

Source: Transportation Research Board, Highway Capacity Manual 2000

Table 6-4: Future (2034) Overall Intersection LOS

ID	Intersection	2034 No-Build		2034 Build	
		AM LOS	PM LOS	AM LOS	PM LOS
Signalized Intersections					
A	Route 199 WB Off/On-Ramp and Longhill Road	B (15.9)	D (45.7)	C (20.2)	C (29.0)
B	Route 199 EB Off/On-Ramp and Longhill Road	B (13.8)	B (14.7)	B (14.8)	B (17.3)
C	Williamsburg W. Drive/Lane Place and Longhill Road	F (100.1)	F (>300)	B (16.6)	C (26.4)
E	Olde Towne Road and Longhill Road	C (33.5)	F (215.1)	C (28.7)	C (28.8)
N	Centerville Road and Longhill Road	C (34.9)	E (55.3)	C (23.0)	C (27.6)
Unsignalized Intersections					
D	Williamsburg Plantation and Longhill Road	A (0.2)	A (1.6)		
F	Buford Road and Longhill Road	A (0.5)	A (1.0)	A (0.4)	A (1.0)
G	Lafayette Boulevard and Longhill Road	A (2.4)	A (9.6)	A (1.3)	A (3.4)
H	Sheffield Road and Longhill Road	A (0.7)	A (1.7)	A (0.4)	A (0.3)
I	Season's Trace and Longhill Road	B (10.9)	B (11.9)	A (9.5)	A (9.0)
J	Lafayette High School Entrance and Longhill Road	A (3.0)	A (1.6)	A (1.2)	A (0.4)
K	Lafayette High School Bus Loop and Longhill Road	A (0.4)	A (0.0)	A (0.9)	A (0.5)
L	Warhill Trail and Longhill Road	A (3.3)	F (53.8)	A (7.9)	B (18.1)
M	Ford's Colony Drive and Longhill Road	C (22.4)	D (35.6)	A (5.3)	A (6.7)

Source: Kimley-Horn and Associates, Inc.



Table 6-5: Route 199 WB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection A)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	B (13.7)	B (11.6)	C (26.1)	-	B (15.9)
2034 Build	B (11.3)	B (14.0)	D (51.2)	-	C (20.2)
PM Peak Hour					
2034 No-Build	C (21.4)	B (14.8)	F (101.2)	-	D (45.7)
2034 Build	B (16.6)	C (25.0)	D (44.4)	-	C (29.0)
Source: Kimley-Horn and Associates, Inc.					

Table 6-6: Route 199 EB Off/On-Ramp and Longhill Road Signalized Intersection LOS (Intersection B)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	B (12.8)	A (8.8)	-	C (25.8)	B (13.8)
2034 Build	A (5.1)	B (11.9)	-	D (53.1)	B (14.8)
PM Peak Hour					
2034 No-Build	B (13.2)	B (11.0)	-	C (34.4)	B (14.7)
2034 Build	A (3.3)	B (17.5)	-	E (56.8)	B (17.3)
Source: Kimley-Horn and Associates, Inc.					

Table 6-7: Williamsburg W. Drive/Lane Place and Longhill Road Signalized Intersection LOS (Intersection C)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	F (162.2)	C (22.1)	D (42.6)	F (125.0)	F (100.1)
2034 Build	B (11.5)	A (3.9)	D (53.5)	E (55.4)	B (16.6)
PM Peak Hour					
2034 No-Build	F (258.4)	F (>300)	E (58.5)	D (41.5)	F (>300)
2034 Build	C (25.6)	C (20.3)	E (55.5)	E (60.8)	C (26.4)
Source: Kimley-Horn and Associates, Inc.					

Table 6-8: Olde Towne Road and Longhill Road Signalized Intersection LOS (Intersection E)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	C (31.5)	C (29.7)	D (47.9)	D (41.9)	C (33.5)
2034 Build	C (22.1)	B (18.8)	E (55.8)	D (53.4)	C (28.7)
PM Peak Hour					
2034 No-Build	F (102.3)	F (297.3)	D (43.9)	F (209.0)	F (215.1)
2034 Build	B (17.5)	B (16.5)	E (60.5)	E (65.8)	C (28.8)
Source: Kimley-Horn and Associates, Inc.					

Table 6-9: Centerville Road and Longhill Road Signalized Intersection LOS (Intersection N)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	E (61.4)	D (49.1)	D (36.1)	C (23.4)	C (34.9)
2034 Build	E (53.2)	D (40.8)	B (18.4)	B (13.8)	C (23.0)
PM Peak Hour					
2034 No-Build	E (57.5)	D (49.9)	C (30.1)	E (79.5)	E (55.3)
2034 Build	D (53.5)	D (42.9)	C (25.4)	B (14.8)	C (27.6)
Source: Kimley-Horn and Associates, Inc.					

Table 6-10: Williamsburg Plantation and Longhill Road Unsignalized Intersection LOS (Intersection D)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (9.2)	A (0.0)	A (0.0)	C (22.0)	A (0.2)
2034 Build*	A (0.1)	A (0.1)	A (2.6)	A (1.8)	A (0.1)
PM Peak Hour					
2034 No-Build	C (16.2)	A (0.0)	A (0.0)	F (107.3)	A (1.6)
2034 Build*	A (0.1)	A (0.1)	A (2.8)	A (5.2)	A (0.3)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					
*Analyzed as Roundabout in future conditions					

Table 6-11: Buford Road and Longhill Road Unsignalized Intersection LOS (Intersection F)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (0.0)	A (9.6)	D (26.0)	-	A (0.5)
2034 Build	A (0.0)	A (9.4)	B (11.3)	-	A (0.4)
PM Peak Hour					
2034 No-Build	A (0.0)	B (10.2)	F (68.3)	-	A (1.0)
2034 Build	A (0.0)	B (11.6)	B (12.0)	-	A (1.0)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 6-12: Lafayette Boulevard and Longhill Road Unsignalized Intersection LOS (Intersection G)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (9.1)	A (0.0)	-	F (50.6)	A (2.4)
2034 Build	A (9.1)	A (0.0)	-	D (28.3)	A (1.3)
PM Peak Hour					
2034 No-Build	B (12.1)	A (0.0)	-	F (286.7)	A (9.6)
2034 Build	B (12.4)	A (0.0)	-	F (125.4)	A (3.4)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 6-13: Sheffield Road and Longhill Road Unsignalized Intersection LOS (Intersection H)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (0.0)	A (9.4)	C (23.7)	-	A (0.7)
2034 Build	A (0.0)	A (0.0)	B (11.1)	-	A (0.4)
PM Peak Hour					
2034 No-Build	A (0.0)	A (9.7)	F (56.4)	-	A (1.7)
2034 Build	A (0.0)	A (0.0)	B (11.7)	-	A (0.3)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 6-14: Season's Trace and Longhill Road Unsignalized Intersection LOS (Intersection I)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (9.1)	A (0.0)	-	F (86.7)	B (10.9)
2034 Build*	A (9.3)	B (10.5)	-	A (7.3)	A (9.5)
PM Peak Hour					
2034 No-Build	B (11.8)	A (0.0)	-	F (214.4)	B (11.9)
2034 Build*	A (3.7)	A (6.9)	-	D (43.9)	A (9.0)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					
*Analyzed as signalized intersection in Build scenario					

Table 6-15: Lafayette High School Entrance and Longhill Road Unsignalized Intersection LOS (Intersection J)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (9.5)	A (0.0)	-	C (19.6)	A (3.0)
2034 Build	A (9.6)	A (0.0)	-	A (9.6)	A (1.2)
PM Peak Hour					
2034 No-Build	B (10.6)	A (0.0)	-	C (24.2)	A (1.6)
2034 Build	B (10.5)	A (0.0)	-	A (9.9)	A (0.4)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 6-16: Lafayette High School Bus Loop and Longhill Road Unsignalized Intersection LOS (Intersection K)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (8.2)	A (8.6)	B (11.9)	B (13.2)	A (0.4)
2034 Build	A (8.5)	A (8.8)	B (10.1)	C (22.5)	A (0.9)
PM Peak Hour					
2034 No-Build	B (10.6)	A (9.4)	C (24.4)	C (24.6)	A (0.5)
2034 Build	A (9.9)	A (9.3)	D (32.8)	E (41.2)	A (0.5)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					

Table 6-17: Warhill Trail/Longhill Gate Road and Longhill Road Unsignalized Intersection LOS (Intersection L)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (8.2)	A (8.4)	D (28.0)	B (13.4)	A (3.3)
2034 Build*	A (5.4)	A (8.3)	B (18.3)	B (16.1)	A (7.9)
PM Peak Hour					
2034 No-Build	A (8.4)	A (9.9)	F (> 300)	C (20.1)	F (53.8)
2034 Build*	B (14.6)	B (14.9)	D (44.4)	D (45.6)	B (18.1)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					
*Analyzed as signalized intersection in Build scenario					

Table 6-18: Ford's Colony Drive and Longhill Road Unsignalized Intersection LOS (Intersection M)

Scenario	Level of Service per by Approach (Delay in sec/veh)				Overall LOS
	Eastbound	Westbound	Northbound	Southbound	
AM Peak Hour					
2034 No-Build	A (8.1)	A (8.9)	F (95.8)	D (31.3)	C (22.4)
2034 Build	A (8.2)	A (9.1)	E (47.7)	C (24.6)	A (5.3)
PM Peak Hour					
2034 No-Build	A (8.6)	B (10.3)	F (213.4)	F (142.4)	D (35.6)
2034 Build	A (9.5)	B (11.1)	F (167.2)	F (135.4)	A (6.7)
Source: Kimley-Horn and Associates, Inc.					
Note: Worst Control Delay is provided under each approach					



Chapter 7.0 Access Management Strategies

Section 7.1 Introduction

As traffic and development increase on an arterial roadway, preserving mobility on the road becomes essential for the efficiency of the transportation system and for continued economic growth. Access management is an approach to balance the needs of motorists using a roadway with the needs of adjacent property owners who depend on access to the roadway. In an environment with limited funds for transportation projects and competing agendas, access management is not just good policy but crucial to the health of a given facility and the entire transportation network.

The Federal Highway Administration (FHWA) defines access management as "The process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed." According to the Access Management Manual, access management results from a cooperative effort between state and local agencies and private land owners to systematically control the "location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway."[10] Access management requires cooperation between government agencies and private land owners.

7.1.1 Need for Access Management

Poor access management results in inefficient use of the roadway. It directly affects the livability and economic vitality of commercial areas in particular, ultimately discouraging potential customers from entering the area and accessing businesses. A corridor with poor access management lengthens commute times, creates unsafe conditions, reduces fuel efficiency, and increases vehicle emissions. Signs of a corridor with poor access management include:

- Increased crashes between motorists, pedestrians, and cyclists
- Worsening efficiency of the roadway
- Congestion outpacing growth in traffic
- Spillover cut-through traffic on adjacent residential streets
- Limited sustainability of commercial development

Access management has wide-ranging benefits to a variety of users, as shown in Table 7-1. Without access management, the function and character of major roadway corridors can deteriorate rapidly and adjacent properties can suffer from declining property values and high turnover.

Table 7-1: Benefits of Corridor Access Management

User	Benefit
Motorists	• Fewer delays and reduced travel times • Safer traveling conditions
Bicyclists	• Safer traveling conditions • More predictable motorist movements • More route options in a connected street network
Pedestrians	• Fewer access points and median refuges increases safety • More pleasant walking environment
Transit Users	• Fewer delays and reduced travel times • Safer, more convenient trips to and from transit stops in a connected street and sidewalk network
Freight	• Fewer delays and reduced travel times lower the cost of delivering good and services
Business Owners	• More efficient roadway system serves local and regional customers • More pleasant roadway corridor attracts customers • Improved corridor aesthetics • Stable property values
Government Agencies	• Lower costs to achieve transportation goals and objectives
Communities	• More attractive, efficient roadways without the need for repeated road widening

Section 7.2 Access Management Strategies

Access management is not a one-size fits all solution to corridor congestion. Successful strategies differ throughout a region and even along the same road. The Access Management Strategy Toolkit that follows provides an overview of the various strategies available to mitigate congestion and its effects by managing access to the roadway. A comprehensive access management program includes evaluation methods and supports the efficient and safe use of the corridors for all transportation modes. The purpose of the toolkit is to provide an overview of a wide range of strategies, many of which could be applied to Longhill Road.

[10] Access Management Manual, Transportation Research Board, National Academy of Sciences, Washington DC, 2003.

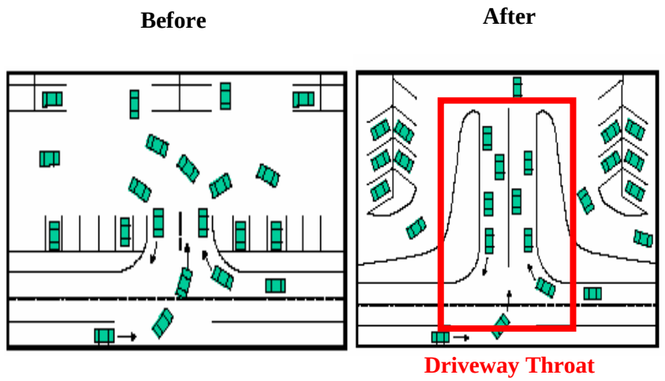
7.2.1 Site Access Treatments

Improvements that reduce the number of vehicle conflicts should be a key consideration during the approval of development or redevelopment sites along corridors identified for access management programs. Site Access Treatments include:

- Improved On-Site Traffic Circulation
- Number of Driveways
- Driveway Placement/Relocation
- Cross Access

7.2.1.1 Improved On-Site Traffic Circulation

One way to reduce traffic congestion is to promote on-site traffic circulation. Pushing back the throat of an entrance, as shown in the figures to the right, helps to avoid spillback onto the arterial. This action improves both the safety and efficiency of the roadway. A minimum separation of 100 feet should be provided to prevent internal site operations from affecting an adjacent public street, ultimately causing spillback problems. Approximate construction cost varies and usually is the responsibility of private development.



7.2.1.2 Number of Driveways

To promote safe and efficient travel on the roadway, only the minimum number of connections necessary to provide reasonable access should be permitted. Where land parcels are under separate ownership, easements for shared access can be used to reduce the number of connections. Reducing the number of access points also decreases the number of conflict points, making the arterial safer and more efficient. Approximate construction cost varies and is usually the responsibility of private development.

7.2.1.3 Driveway Placement

Driveways located close to intersections create and contribute to operational and safety issues. These issues include intersection and driveway blockages, increased points of conflict, frequent/unexpected stops in the through travel lanes, and driver confusion as to where vehicles are turning. Driveways close to intersections should be relocated or closed, as appropriate. As a best planning practice, no driveway should be allowed within 100 feet of the nearest intersection.

7.2.1.4 Cross Access

Cross access is a service drive or secondary roadway that provides vehicular access between two or more continuous properties. Such access prevents the driver from having to enter the public street system to travel between adjacent properties. Cross access can be a function of good internal traffic circulation at large developments with substantial frontage along a major roadway. Similarly, backdoor access occurs when a parcel has access to a parallel street behind buildings and away from the main thoroughfare. When combined with a median treatment, cross access and backdoor access ensure that all parcels have access to a median opening or traffic signal for left-turn movements.



Chapter 8.0 Median Treatments

Section 8.1 Corridor Median Treatments

Segments of a corridor with sufficient cross access, backdoor access, and onsite circulation may be candidates for median treatments. A median-divided roadway improves traffic flow, reduces congestion, and increases traffic safety – all important goals of access management. While medians restrict some left-turn movements, overall traffic delays are reduced by removing conflicting vehicles from the mainline. Landscaping and gateway features incorporated into median treatments improve the aesthetics of the corridor, in turn encouraging investment in the area. Median Treatments include the following:

- Non-Traversable Median
- Median U-Turn Treatment
- Directional Cross (Left-Over Crossing)
- Left-Turn Storage Bays
- Offset Left-Turn Treatment

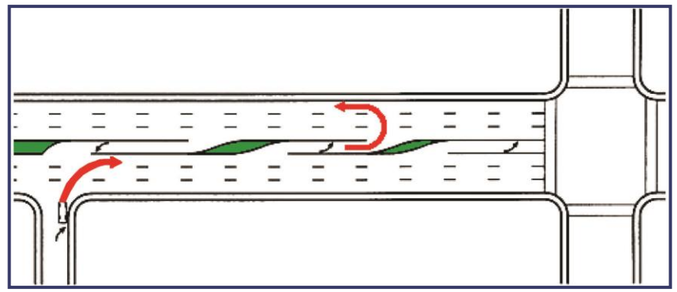
8.1.1 Non-Traversable Median



These features are raised or depressed barriers that physically separate opposing traffic flows. Inclusion in a new roadway or reconstruction of an existing roadway should be considered for multi-lane roadways with high pedestrian volumes or collision rates as well as in locations where aesthetics are a priority. A non-traversable median requires sufficient cross access and backdoor access at adjacent parcels. As these treatments are considered, sufficient spacing and locations for U- and left-turn bays must be identified. Advantages of non-traversable medians include increased safety and capacity by separating opposing vehicle flows, providing space for pedestrians to find refuge, and restricting turning movements to locations with appropriate turn lanes. Disadvantages include potentially increased emergency vehicle response time (indirect routes to some destinations), inconvenience for some travelers, increased travel distance for some movements, and potential opposition from the general public and affected property owners. To overcome some of these disadvantages, sufficient spacing and location of U- and left-turn bays must be identified. Approximate construction cost varies.

8.1.2 Median U-Turn Treatment

These treatments involve prohibiting or preventing minor street or driveway left turns between signalized intersections. Instead, these turns are made by first making a right turn and then making a U-turn at a nearby median opening or intersection. These treatments can increase safety and efficiency of roadway corridors with high volumes of through traffic, but should not be used where there is not sufficient space available for the provision of U-turn movements. The location of U-turn bays must provide sufficient weaving distance to get to the median opening while minimizing any increased travel distance.



Median U-Turn Movement

Advantages of median U-turn treatments include reduced delay for major intersection movements, potential for better two-way traffic progression (major and minor streets), fewer stops for through traffic, and fewer points of conflict for pedestrians and vehicles at intersections. Disadvantages include increased delay for some turning movements, increased travel distance, increased travel time for minor street left turns, and increased driver confusion.

8.1.3 Directional Crossover (Left-Over Crossing)

When a median exists on a corridor, special attention must be given to locations where left turns are necessary. A left-over crossing is a type of directional crossover that prohibits drivers on the cross road (side street) from proceeding straight through the intersection with the main road but allows vehicles on the mainline to turn left onto the cross road. Such designs are appropriate in areas with high traffic volumes on the major road and lower volumes of through traffic on the cross road, particularly where traffic needs to make left turns from the main line onto the minor street. A properly implemented left-over crossing reduces delay for through-traffic and diverts some left-turn maneuvers from intersections. By reducing the number of conflict points for vehicles along the corridor, these treatments improve safety.

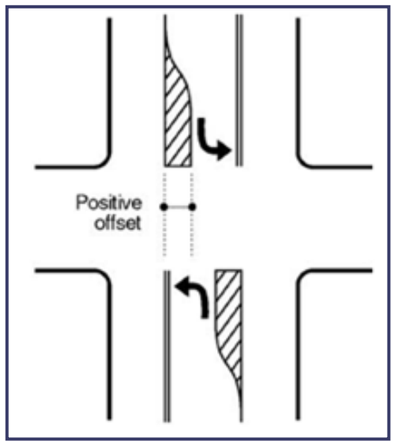
Left-Over Crossing

8.1.4 Left-Turn Storage Bays

Where necessary, exclusive left-turn lanes (bays) should be constructed to provide adequate storage space separated from through traffic for turning vehicles. The provision of these bays reduces vehicle delay related to waiting for vehicles to turn and also may decrease the frequency of collisions attributable to lane blockages. In some cases, turn lanes/bays can be constructed within an existing median. Where additional right-of-way is required, construction may be more costly.

8.1.5 Offset Left-Turn Treatment

Exclusive left-turn lanes at intersections generally are configured to the right of one another, which causes opposing left-turning vehicles to block one another's forward visibility. An offset left-turn treatment shifts the left-turn lanes to the left, adjacent to the innermost lane of oncoming through traffic. In cases where permissive left-turn phasing is used, this treatment can improve efficiency by reducing crossing and exposure time and distance for left turning vehicles. In addition, the positive offset improves sight distance and may improve gap recognition. In locations with sufficient median width, this treatment can be easily retrofitted. Where insufficient right-of-way width exists, the construction of this treatment can be difficult and costly. As a result, approximate construction costs vary.



Section 8.2 Intersection and Minor Street Treatments

The operation of signalized intersections can be improved by reducing driver confusion, establishing proper curb radii, and ensuring adequate laneage of minor street approaches. Intersection and Minor Street Treatments include the following:

- Skip Marks (Dotted Line Markings)
- Intersection and Driveway Curb Radii
- Minor Street Approach Improvements

8.2.1 Skip Marks (Dotted Line Markings)

These pavement markings can reduce driver confusion and increase safety by guiding drivers through complex intersections. Intersections that benefit from these lane markings include offset, skewed, or multi-legged intersections. Skip marks are also useful at intersections with multiple turn lanes. The dotted line markings extend the line markings of approaching roadways through the intersection. The markings should be designed to avoid confusing drivers in adjacent or opposing lanes.

8.2.2 Intersection and Driveway Curb Radii

Locations with inadequate curb radii may cause turning vehicles to use opposing travel lanes to complete their turning movement. Inadequate curb radii may cause vehicles to "mount the curb" as they turn a corner and cause damage to the curb and gutter, sidewalk, and any fixed objects located on the corner. This maneuver also can endanger pedestrians standing on the corner. Curb radii should be adequately sized for area context and likely vehicular usage.

8.2.3 Minor Street Approach Improvements

At signalized intersections, minor street vehicular volumes and associated delays may require that a disproportionate amount of green time be allocated to the minor street, contributing to higher-than-desired main street delay. With laneage improvements to the minor street approaches, such as an additional left-turn lane or right-turn lane, signal timing often can be re-allocated and optimized.

Section 8.3 Intelligent Transportation System Solutions

Intelligent Transportation System (ITS) solutions have many potential benefits when implemented in concert with an overall transportation management strategy. ITS solutions use communications and computer technology to manage traffic flow in an effort to reduce crashes, mitigate environmental impacts such as fuel consumption and emissions, and reduce congestion from normal and unexpected delays. Successful systems include a variety of solutions that provide surveillance capabilities, remote control of signal systems components, seamless sharing of traveler information with the public, and even allow emergency vehicles to have priority to proceed safely through signalized intersections. Intelligent Transportation System components include the following:

- Signalization
- Progressive-Controlled Signal System
- Dynamic Message Signs (DMS)
- Closed Circuit Television Traffic Monitoring
- Emergency Vehicle Preemption

While not all of these solutions are likely to be applied to Longhill Road in the near term, they are all included here to show the range of possible solutions and potential synergies among various components.

8.3.1 Signalization

The volume of traffic attracted to some side streets or site driveways is more than can be accommodated acceptably under an unsignalized condition. Delays for minor street movements as well as left-turn movements on the main street may create or contribute to undue delays on the major roadway as well as safety issues. The installation of a traffic signal at appropriate locations can mitigate these types of issues without adversely affecting the operation of the major roadway, provided they are spaced appropriately.

8.3.2 -Controlled Signal System

A progressive-controlled signal system coordinates the traffic signals along a corridor to allow vehicles to move through multiple signals without stopping. Traffic signals are spaced appropriately and synchronized such that when a vehicle is released from one intersection the signal at the next intersection will be green by the time the vehicle reaches it. Likewise, adaptive signal control involves continuously collecting automated intersection traffic volumes and using the volumes to alter signal timing and phasing to best accommodate actual—real-time—traffic volumes. Adaptive signal control can increase isolated intersection capacity as well as improve overall corridor mobility by up to 20% during off-peak periods and 10% during peak periods.

8.3.3 Dynamic Message Signs (DMS)

Dynamic Message Signs alert vehicles of congestion or incidents. DMS units give general alerts, such as "congestion ahead" or specific details on the location of the incident or predicted travel times so motorists can mentally prepare. Often, drivers are more patient if they can anticipate how long the delay will be or how far the congestion spreads. Perhaps most importantly, DMS inform drivers and allow them to consider alternate travel routes during heavy congestion, thereby reducing the volume on the freeway, the likelihood of additional incidents, and the average travel time for the system as a whole.

8.3.4 Closed Circuit Television Traffic Monitoring

Closed Circuit Television (CCTV) cameras are primarily used on interstate facilities and major arterials to provide visual traffic volume and flow information to traffic management or monitoring centers. These centers use this information to deploy incident response patrols or equipment and to provide roadway travel delay information to motorists. By having visual roadway information, traffic management centers are able to identify incidents quickly and respond appropriately and efficiently, helping to reduce the effect of incidents on a single location or on multiple roadways.

8.3.5 Emergency Vehicle Preemption

This strategy involves an oncoming emergency or other suitably equipped vehicle changing the indication of a traffic signal to green to favor the direction of desired travel. Preemption improves emergency vehicle response time, reduces vehicular lane and roadway blockages, and improves the safety of the responders by stopping conflicting movements.



Chapter 9.0 Corridor Recommendations

The character of the preferred typical section of the roadway and supporting elements of the proposed improvements are a reflection of the feedback received during the extensive public involvement process. There are two types of recommendations for the Longhill Road Corridor Study area: ongoing and specific improvements. Ongoing recommendations consist of recommended continuing activities, policies, and procedures. These ongoing recommendations include the following:

- Closing/modifying access points and consolidating commercial and residential driveways as site plan approval, rezoning approval, and special use permits are given.
- Routinely clearing vegetation that blocks sign visibility, especially on minor street approaches.
- Retiming all traffic signals along the corridor on a regular schedule at 3 to 5 year intervals once all signals along the corridor are interconnected.
- Bicycle and pedestrian facilities throughout the study area should be consistent with the James City County Regional Bikeways Map and Pedestrian Accommodations Master Plan and should be implemented/constructed as the proposed roadway widening and/or new development occurs.

Recommendations for specific improvements to the Longhill Road corridor have been split into short-term (two years to seven years), mid-term (seven to fifteen years), and long-term (fifteen to twenty-plus years) categories based primarily on their scale as well as the time frame in which they will be needed. This approach allows communities to prioritize larger scale projects over time while also being able to implement "quick hitter" projects that mitigate immediate needs. The types of projects can often be implemented within six months to two years. Such projects may include: signal timing adjustments, upgrade existing or installation of new pavement markings, installation of new or relocation of existing signage, removal of vegetation along the roadway, installation of traffic calming measures, implementation of access management treatments, pedestrian accommodations at existing signalized intersections, safety enhancements to corridor operations, or installation of new traffic control devices.

The "quick hitter" improvements may include, but are not limited to the following:

Signal Timing/Traffic Operation Improvements

- Traffic signal timing phasing and timing/coordination improvements (Route 199 EB/WB Off/On-Ramp intersections, Williamsburg W Drive/Lane Place Drive, Olde Towne Road intersections)
- Consider installation of Flashing Yellow Arrow signal heads to accommodate protected/permissive left-turn movements along eastbound and westbound Longhill Road

Pedestrian Accommodations

Longhill Road at Willimsburg W Drive/Lane Place Drive

- Installation of pedestrian accommodations at the Longhill Road/Williamsburg W Drive/Lane Place Drive intersection
  - Pedestrian signal push-button and pedestrian displays
  - Incorporate activated/on-demand pedestrian phase with existing traffic signal operations
  - Stripe crosswalk across the west leg of Longhill Road
  - Install ADA ramps and refuge area on the northwest and southwest quadrants of the intersection to accommodate pedestrians waiting to cross Longhill Road

Longhill Road at Warhill Trail/Longhill Gate Road

- Installation of pedestrian accommodations at the Longhill Road/Warhill Trail/Longhill Gate Road intersection
  - Install Rectangular Rapid Flashing Beacons (RRFB) and lighted pedestrian signs along eastbound and westbound Longhill Road in advance of pedestrian crosswalk location.
  - Pedestrian push-buttons to activate RRFBs
  - Stripe crosswalk across the west leg of Longhill Road to provide access to existing multi-use path along southbound Warhill Trail
  - Install ADA ramps and refuge area on the northwest and southwest quadrants of the intersection to accommodate pedestrians waiting to cross Longhill Road

Longhill Road at New Zion Baptist Church/New Zion Baptist Church Cemetery Site Driveway

- Installation of pedestrian accommodations at the Longhill Road/New Zion Baptist Church/New Zion Baptist Church Cemetery Site Driveway
  - Install Rectangular Rapid Flashing Beacons (RRFB) and lighted pedestrian signs along eastbound and westbound Longhill Road in advance of pedestrian crosswalk location.
  - Pedestrian push-buttons to activate RRFBs
  - Stripe crosswalk across Longhill Road to provide access to/from cemetery parking area
  - Install ADA ramps and refuge area on the northeast and south sides intersection to accommodate pedestrians waiting to cross Longhill Road
  - Construct 5 foot concrete sidewalk to extend from New Zion Baptist Church parking lot to eastern terminus of existing sidewalk along south side of Longhill Road. Establish refuge area for pedestrians to cross to/from south side of Longhill Road to/from north side of Longhill Road

School Zone Safety

Lafayette High School

- Install rumble strips (e.g., depressed grooves in asphalt) in the vicinity of School Advance Crossing signage for Lafayette High School (eastbound and westbound)
- Install new School Advance Crossing signage to include supplemental distance plaque (900 FT) along westbound Longhill Road west of entrance to Woods of Williamsburg entrance
- Install new SCHOOL in road pavement marking adjacent to School Advance Crossing signage
- Install new END SCHOOL ZONE sign along eastbound Longhill Road vicinity of proposed new School Advance Crossing signage
- Relocate Speed Limit 45 mph sign from existing location along westbound Longhill Road approximately 500 feet west of Longhill Road/Lafayette High School Bus Loop Driveway/Christian Life Center intersection
- Install new supplemental distance plaque (900 FT) with existing School Advance Crossing signage along eastbound Longhill Road east of Warhill Trail Sportsplex/Longhill Gate entrance

- Remove/cut back overgrowth of vegetation and/or trees along eastbound Longhill Road (approaching from the west) to provide clear visibility of existing School Speed Limit Assembly and flashing beacons.

Williamsburg Montessori School

- Install rumble strips (e.g., depressed grooves in asphalt) in the vicinity of School Advance Crossing signage for Williamsburg Montessori School (eastbound and westbound)
- Install new supplemental distance plaque (550 FT) with existing School Advance Crossing signage along westbound Longhill Road west of Warhill Trail Sportsplex/Longhill Gate entrance
- Install new School Advance Crossing signage with supplemental distance plaque (850 FT) along eastbound Longhill Road east of Ford's Colony entrance
- Install new/replace existing SCHOOL in road pavement marking adjacent to proposed School Advance Crossing signage

Planning-level cost estimates, expressed in year 2014 dollars, have been included for all recommendations (See **Table 10-1** through **Table 10-3**). These planning-level cost estimates have been based on VDOT's statewide two-year cost averages for 2014, the VDOT Transportation & Mobility Planning Division's "Statewide Planning Level Cost Estimates" worksheet from 2009, and familiarity with similar projects and improvements throughout Virginia. Due to fluctuations in the costs of labor, materials, and equipment, fluctuations in the market, and the outcome of competitive bidding as well as the general planning-level nature of the recommendations, these estimated costs are neither exact nor guaranteed.

Variation between actual and estimated costs will change as time passes, and the time value of money has not been taken into account. Cost estimations performed using the "Statewide Planning Level Cost Estimates" worksheet include right-of-way acquisition cost estimates developed with the sheet's methodology. The stormwater collection and conveyance cost estimates included in this report assume the use of standard VDOT design specifications for roadway drainage including the use of concrete curb and gutter and concrete pipe for conveying stormwater to the treatment locations. The costs for specific stormwater management features are not included in this corridor study because of the large variability in the type of stormwater treatment facilities contained in the Virginia Stormwater Management Clearinghouse and the uncertainty in the amount of additional right of way that the County may need to purchase to accommodate such features. Overall stormwater management costs will ultimately be dictated by the combination and number of total number of stormwater management measures determined necessary as a part of the roadway design.

The cost breakdown per scenario includes engineering/design costs, roadway/intersection improvement costs(e.g., cost per mile for a particular roadway typical section, turn-lane improvements, roundabout, bridges/box culverts, milling, overlay, sidewalks, multi-use paths, channelization, stormwater collection and conveyance, landscaping (e.g., trees, seeding), etc.), traffic signal equipment improvement costs (e.g., poles, mast arms, signal heads, pedestrian signal head equipment and construction), construction engineering and inspection (CEI) costs, right-of-way (ROW) acquisition, and utility relocation costs as well as miscellaneous costs which includes, mobilization, sediment and erosion control, traffic control (i.e., maintenance of traffic (MOT) during construction). Furthermore, a 10 percent contingency was applied to construction cost. Lastly, estimated dollars were rounded to the nearest $1,000 in the following cost summary tables.

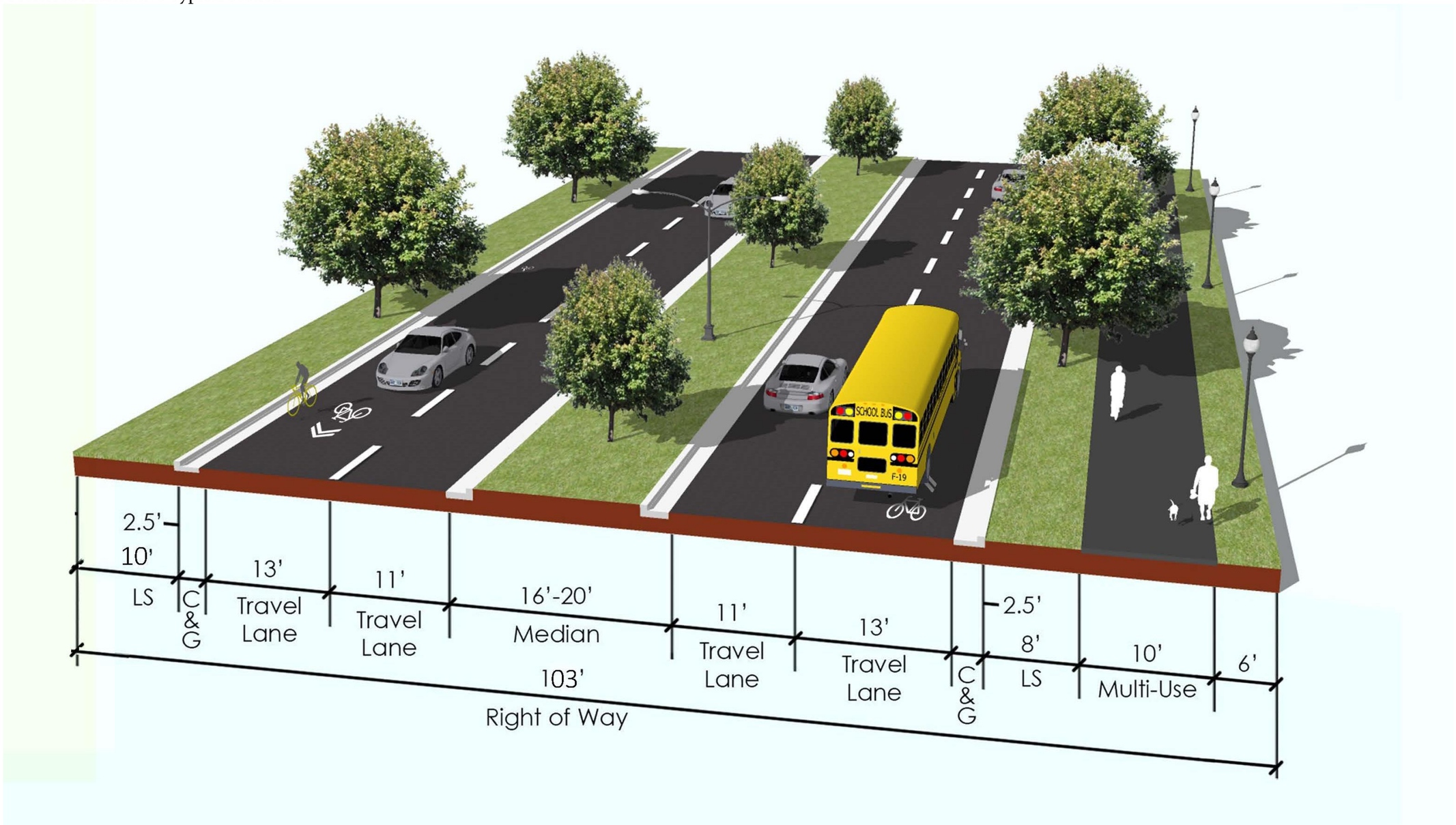
Section 9.1 Short Term Recommendations and Planning Level Cost Estimates

Short term recommendations for the Longhill Road Corridor study area consist of widening Longhill Road from a 2-lane typical section to 4-lane typical section between the Williamsburg West Drive/Lane Place Drive intersection to a location approximately 600 feet west of Olde Towne Road in the vicinity of New Point Road intersection, to include a multi-use trail and street lighting, pedestrian scale lighting, as well as the modification of existing traffic signals and select intersection improvements as needed in the immediate future.

Longhill Road Corridor

- As a result of the public involvement process, Option 1 (as shown in **Figure 10-1)** was identified as the preferred option to widen Longhill Road from a 2-lane to a 4-lane, median divided typical section tying in to the existing 4-lane section in the vicinity of the Route 199 eastbound off-on/ramp intersection to the east and continuing to a location immediately west of the Olde Towne Road/Devon Road intersection, with a 10-foot multi-use paths along the north side of the roadway.
- Construct 16 to 20-foot variable width median along the corridor Williamsburg West Drive/Lane Place Drive to the east and Olde Towne Road/Devon Road to the west.
    - This will allow for the construction of a single 12-foot full width left turn-lanes where applicable while maintaining a 4 to 8-foot median to provide physical separation between traffic located in the turn-lane and traffic in the opposing/oncoming travel lane.
- Transition of the roadway from a 4-lane facility back down to a 2-lane facility should occur over a distance of approximately 600 feet west of the Olde Towne Road/Devon Road intersection in the vicinity of the New Point Road intersection.
    - This will allow for an adequate transition between the two typical sections and mitigate the potential for congestion.
- Maintain and/or implement desirable access management strategies to accommodate, prohibit, restrict, or best mitigate full-movement crossovers/intersections located along the corridor. Maintain or locate full-movement intersections at the following locations:
    - Williamsburg West Drive/Lane Place Drive
    - Kendale Drive (King of Glory Lutheran Church East Entrance Driveway)
    - Williamsburg Plantation Drive/King of Glory Lutheran Church West Entrance Driveway
    - Wellspring United Methodist Church Entrance Driveway
    - Olde Towne Shopping Center
    - Olde Towne Road/Devon Road
    - New Point Road
    - Location and spacing of full-movement intersections are based on VDOT Access Management Guidelines and intersections serving high traffic demand side streets locations.
- Construct exclusive left-turn lanes along Longhill Road at designated full-movement intersections
- Construct partial access intersections along Longhill Road consisting of right-in/right-out/channelized left-turn lanes, right-in/right-out only site driveways, or channelized U-Turns in the median.

Figure 9-1: Preferred Alternative Typical Section



Longhill Road Signal System Wireless Interconnect

- Install wireless interconnect (underground fiber or overhead) and coordinate both Route 199 Ramp intersections, as well as the Williamsburg West Drive/ Lane Place Drive and Olde Towne Road/Devon Road signals along Longhill Road to operate as a coordinated signal system.
    - Implement coordinated signal timing plans to accommodate vehicle demands during the AM, Midday, PM, Off, and Weekend peak hours as needed.
- Interconnect installation and coordination of traffic signals along Longhill Road should take place as a part of the proposed Longhill Road widening project.

Longhill Road and Williamsburg West Drive/Lane Place Drive

- Modify/upgrade traffic signal as a part of road widening project
- Coordinate traffic signal timings/operations with adjacent Route 199 interchange intersection traffic signal timings/operations
- Construct bus pull-off areas with approximately 50 feet of storage to service the bus shelters while maintaining traffic progression and operations through the intersection
    - Westbound Longhill Road immediately west of Lane Place Drive
    - Eastbound Longhill Road immediately east of Williamsburg West Drive
- Delineate pedestrian crosswalks along the north, east, and west legs of the intersection and install pedestrian push buttons as well as related signal equipment adjacent to the crosswalks

Northbound Williamsburg West Drive

- Maintain/delineate one shared through/left-turn lane
- Maintain/delineate one exclusive right-turn lane

Southbound Lane Place Drive

- Maintain/delineate one shared left/through/right-turn lane

Eastbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Westbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Maintain/construct an exclusive right-turn lane

Longhill Road and Kendale Lane (King of Glory Lutheran Church East Entrance Driveway)

Kendale Lane/King of Glory Lutheran Church east entrance driveway will be modified to provide partial access (i.e., right-in/right-out with a channelized westbound left-turn lane.

Northbound Kendale Lane (King of Glory Lutheran Church East Entrance Driveway)

- Remove one exclusive left-turn lane
- Maintain/construct one exclusive right-turn lane

Eastbound Longhill Road

- Construct one through lane
- Maintain/construct one shared through/right-turn lane

Westbound Longhill Road

- Construct one exclusive channelized left-turn lane
- Construct two through lanes

Longhill Road and Williamsburg Plantation Drive/King of Glory Lutheran Church West Entrance

- Construct a two-lane roundabout to serve as traffic control at the Longhill Road and Williamsburg Plantation Drive/King of Glory Lutheran Church west entrance driveway intersection.
- Install "roundabout ahead" advance warning signage along eastbound and westbound Longhill Road.
- Install applicable roundabout pavement markings for all approaches.
- Install applicable supplemental roundabout pavement marking signage for all approaches.
- Delineate pedestrian crosswalks along the north leg of the intersection.

Northbound King of Glory Lutheran Church West Entrance Driveway

- Construct a single lane approach to accommodate left/through/right-turning movement volumes

Southbound Williamsburg Plantation Drive

- Construct two approach lanes
    - One to accommodate left-turn and through movement traffic
    - One to accommodate through and right-turning movement traffic

Eastbound Longhill Road

- Construct two approach lanes
    - One to accommodate left-turn and through movement traffic
    - One to accommodate through and right-turning movement traffic

Westbound Longhill Road

- Construct two approach lanes
    - One to accommodate left-turn and through movement traffic
    - One to accommodate through and right-turning movement traffic

Longhill Road and Wellspring United Methodist Church Entrance Driveway

Wellspring United Methodist Church entrance driveway will be relocated approximately 200 feet to the west of its current location along Longhill Road and modified to provide partial access (i.e., right-in/right-out with a channelized westbound left-turn lane.

Northbound Wellspring United Methodist Church Entrance Driveway

- Construct one exclusive right-turn lane

Eastbound Longhill Road

- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Construct one exclusive channelized left-turn lane
- Construct two through lanes

Longhill Road and Olde Towne Shopping Center Driveway

Longhill Road and Shopping Center Driveway will be modified to provide partial access (i.e., right-in/right-out with a channelized eastbound left-turn lane.

- Delineate a pedestrian crosswalk along the north leg of the intersection

Southbound Olde Towne Shopping Center Drive

- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct one exclusive channelized left-turn lane
- Construct two through lanes

Westbound Longhill Road

- Maintain/construct one exclusive right-turn lane
- Construct two through lanes

Longhill Road and Olde Towne Road/Devon Road

- Replace/upgrade traffic signal as a part of road widening project
- Coordinate traffic signal timings/operations with corridor traffic signal timings/operations
- Construct bus pull-off areas with approximately 50 feet of storage to service the bus shelters while maintaining traffic progression and operations through the intersection
    - Westbound Longhill Road immediately west of Olde Towne Road
    - Eastbound Longhill Road immediately east of Devon Road
- Delineate pedestrian crosswalks along the north and east legs of the intersection and install pedestrian pushbuttons as well as related signal equipment adjacent to the crosswalks

Northbound Devon Road

- Construct one exclusive left-turn lane
- Construct one shared through/right-turn lane

Southbound Olde Towne Road

- Construct one exclusive left-turn lane
- Construct/delineate one shared through/left-turn lane
- Maintain/construct one exclusive right-turn lane

Eastbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Westbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Longhill Road and New Point Road

Longhill Road and New Point Road will be modified to provide partial access (i.e., right-in/right-out with a channelized eastbound left-turn lane.

- Delineate a pedestrian crosswalk along the north leg of the intersection

Southbound New Point Road

- Remove one exclusive left-turn lane
- Maintain/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct one exclusive channelized left-turn lane
- Construct two through lanes

Westbound Longhill Road

- Maintain/construct one exclusive right-turn lane
- Construct two through lanes

9.1.1 Planning Level Cost Estimates – Short Term

Item	Total
Engineering/Design	$ 1,577,000.00
Roadway Improvements*	$ 10,307,000.00
Traffic Signal Equipment Improvements	$ 1,220,000.00
Construction Engineering and Inspection (CEI)	$ 1,146,000.00
Right-of-Way (ROW)**	$ 3,437,000.00
Construction Contingency (10%)	$ 1,154,000.00
Relocation of Utilities Underground	$ 975,000.00
Total	**$ 19,816,000.00**

**Roadway improvement costs include applicable turn-lane, pavement marking, signage, as well as landscaping, and stormwater collection materials costs.*

*** Assumes ROW cost is 45% of Construction Cost*



Table 9-1: Short-Term "Recommendations and Action Items"	Cost Estimate [A]	Timeframe [B]	Responsible Party
Longhill Road – Widen to a four-lane, median divided typical section with a 10-foot multi-use path along one side of the corridor. Multi-use path will alternate between the north side and south side based on population/activity centers. The median should be a 16 to 20-foot variable width median between Route 199 and Olde Towne Road/Devon Road. Transition of the roadway from a 4-lane facility back down to a 2-lane facility should occur over a distance of approximately 1,200 feet west of the Olde Towne Road/Devon Road intersection to allow for an adequate transition between the two typical sections and to mitigate the potential for congestion.	$14,915,000	2018-2020	VDOT/James City County
Longhill Road Signal System Wireless Interconnect – Install wireless interconnect (underground fiber or overhead) and coordinate both Route 199 Ramp intersections, as well as the Williamsburg W Drive/Lane Place Drive and Olde Towne Road/Devon Road signals along Longhill Road to operate as one system. Implement coordinated signal timing plans to accommodate vehicle demands during the AM, Midday, PM, Off, and Weekend peak hours as needed.	$208,000	2018-2020	VDOT
Longhill Road and Williamsburg West Drive/Lane Place Drive – Modify/upgrade traffic signal as a part of road widening project, coordinate with adjacent Route 199 signalized intersections, and optimize traffic signal phasing and timing plans to accommodate peak/off-peak hour traffic along Longhill Road. On the northbound Williamsburg W Drive approach, construct one shared through/left-turn lane, and one exclusive right-turn lane. On the southbound Lane Place Drive approach, maintain/delineate one shared left/through/right-turn lane. Construct bus pull-off areas on Longhill Road west of Lane Place Drive and east of Williamsburg West Drive. Delineate crosswalk on the north, east, and west legs of the intersection and install related pushbutton and pedestrian signal equipment.	$848,000	2018-2020	VDOT/IOW County/Developers
Longhill Road and Kendale Lane (King of Glory Lutheran Church East Entrance Driveway) – Construct one exclusive channelized westbound left-turn lane, construct one exclusive eastbound right-turn lane, and construct/delineate one exclusive northbound right-turn lane.	$153,000	2018-2020	VDOT/James City County
Longhill Road and Williamsburg Plantation Drive/West King of Glory Church West Entrance Driveway – Construct a two-lane roundabout to replace the existing unsignalized intersection. Install "roundabout ahead" advance warning signage along eastbound and westbound Longhill Road. Install applicable roundabout pavement markings for all approaches. Install applicable supplemental roundabout pavement marking signage for all approaches. Delineate crosswalk on the north leg of the intersection.	$2,125,000	2018-2020	VDOT/James City County
Longhill Road and Wellspring United Methodist Church Entrance Driveway – Relocate Wellspring United Methodist Church Entrance driveway approximately 200 feet to the west of its current location. Construct one exclusive channelized westbound left-turn lane, construct one exclusive eastbound right-turn lane, and construct/delineate one exclusive northbound right-turn lane.	$387,000	2018-2020	VDOT/James City County
Longhill Road and Olde Towne Shopping Center Drive – Construct one exclusive channelized eastbound left-turn lane, construct one exclusive westbound right-turn lane, and construct/delineate one exclusive southbound right-turn. Delineate crosswalk on the north leg of the intersection.	$170,000	2018-2020	VDOT/James City County
Longhill Road and Olde Towne Road/Devon Road – Install a new traffic signal, coordinate with adjacent signalized intersections, and optimize traffic signal phasing and timing plans to accommodate peak/off-peak hour traffic along Longhill Road. On the northbound Devon Road approach, construct/delineate one exclusive left-turn lane, and one shared through/right-turn lane. On the southbound Olde Towne Road approach, construct one exclusive left-turn lane, one shared through/left-turn lane, and one exclusive right-turn lane. Construct bus pull-off areas along Longhill Road west of Olde Towne Road and east of Devon Road. Delineate crosswalk on the north and east legs of the intersection and install related pushbutton and pedestrian signal equipment.	$848,000	2018-2020	VDOT/James City County
Longhill Road and New Point Road – Construct one exclusive channelized eastbound left-turn lane, construct one exclusive westbound right-turn lane, and construct/delineate one exclusive southbound right-turn lane. Delineate crosswalk on the north leg of the intersection.	$162,000	2018-2020	VDOT/James City County

[A] Cost estimate includes estimated design cost and ten percent contingency. Probable cost estimate is engineer's approximation in 2014 dollars and is subject to change based on increased construction materials, design, or time of implementation.

[B] Timeframe for implementation is an estimate based on project need and available funding. Actual timeframe may vary based on externalities.



Section 9.2 Mid-Term Recommendations and Planning Level Cost Estimates

Mid-term or Phase 2 recommendations for the Longhill Road corridor consist of widening Longhill Road from a 2-lane typical section to 4-lane typical section between a location in the immediate vicinity of the New Point Road intersection in the east to a location approximately 1,000 feet west of the proposed Warhill Trail/Longhill Gate Road signalized intersection in the vicinity of Williamsburg Montessori School site access driveway intersection. This typical section will continue to include a multi-use trail, street lighting, as well as the modification of existing traffic signals, and select intersection improvements as needed in the more immediate future.

One of the challenging components along this section of the corridor is the number of existing driveways serving a variety of land uses ranging in size and intensity. The range of land uses varies from a small bed and breakfast, a modest sized apartment complex, to a high school, a regional park, and several medium to large single family residential neighborhoods. Maintaining accessibility to these sites with the proposed roadway widening and the associated raised median, as well as the need to comply with VDOT access management guidelines, presents several challenges when considering future access and traffic operations.

There is a heightened sensitivity to these challenges for the Lafayette High School entrance driveway and the Season's Trace access driveway. Due to current spacing between the two site access intersections, the need to provide traditional full-movement access to both sites, and the need for proposed site access to be agreeable to both parties, the proposed site access/intersection improvement options require further consideration and evaluation before a preferred option is selected. The WJCC School Board met on August 19, 2014 to assess and discuss the proposed site access options further, but did not select or recommend a preferred option at that time. The alternative concepts, comments, additional considerations discussed by the WJCC School Board during that meeting can be found in **Appendix F** of the report. The WJCC School Board plans to evaluate the options further and intends to give parents and staff an opportunity for input on the proposed options, keeping in mind that student and staff safety is the Board's main goal.

Therefore, the recommendations proposed for the Season's Trace and Lafayette High School Entrance Driveway in this section are only one of several options currently still under consideration by the County, WJCC Schools and the residents of Season's Trace to address future access and operational enhancements associated with the proposed widening of Longhill Road. This option is not the preferred nor final recommendation but is presented to provide an example of the type of access alternatives under consideration, the associated improvement costs, the operational benefits, and the coordination necessary between adjacent property owners when implementing and adhering to more stringent access management policies. Because this segment is associated with Phase 2 of the corridor improvements there is sufficient time for the County, WJCC Schools, and the adjacent property owners to further evaluate the additional options before selecting a preferred and implementable solution. The specific intersections taken into consideration as a part of the site access options evaluation are: The War Hill Inn, Season's Trace, Lafayette High School Main Entrance, and Lafayette High School Bus Loop/Christian Life Center.

Longhill Road Corridor

- Phase 2 of Longhill Road widening from a 2-lane to a 4-lane, median divided typical section between New Point Road to the east and Warhill Trail/Longhill Gate Road intersection to the west with a 10-foot multi-use path along the north side of the roadway.
- Construct 16 to 20-foot variable width median along the corridor between the New Point Road intersection to the east and Warhill Trail/Longhill Gate Road to the west.
    - This will allow for the construction of 12-foot full width left turn-lanes where applicable while maintaining a 4 to 8-foot median to provide physical separation between traffic located in the turn-lane and traffic in the opposing/oncoming travel lane.
- Transition of the roadway from a 4-lane facility back down to a 2-lane facility should occur over a distance of approximately 1,000 feet west of the Warhill Trail/Longhill Gate Road intersection, or immediately west of the proposed relocated Williamsburg Montessori School entrance driveway.
    - This will allow for an adequate transition between the two typical sections and will mitigate the potential for congestion.
- Maintain and/or implement desirable access management strategies to accommodate, prohibit, restrict, or best mitigate full-movement crossovers/intersections located along the corridor. Maintain or locate full-movement intersections at the following locations:
    - Glenburnie Road
    - Buford Road
    - Lafayette Boulevard
    - Season's Trace Drive
    - Lafayette High School Bus Loop Driveway/Christian Life Center Driveway
    - Warhill Trail/Longhill Gate Road
    - Williamsburg Montessori School Driveway
    - Location and spacing of full-movement intersections are based on VDOT Access Management Guidelines and intersections serving high traffic demand side streets locations.
- Construct exclusive left-turn lanes along Longhill Road at designated full-movement intersections
- Construct partial access intersections along Longhill Road consisting of right-in/right-out/channelized left-turn lanes, right-in/right-out only site driveways, or channelized U-Turns in the median.

Longhill Road and Glenburnie Road

Longhill Road and Glenburnie Road will be modified to provide partial access (i.e., right-in/right-out with a channelized eastbound left-turn lane).

- Delineate a pedestrian crosswalk along the north leg of the intersection.

<u>Southbound Glenburnie Road</u>

- Remove one exclusive left-turn lane
- Maintain one exclusive right-turn lane

<u>Eastbound Longhill Road</u>

- Construct one exclusive channelized left-turn lane
- Maintain two through lanes

Westbound Longhill Road

- Maintain one exclusive right-turn lane
- Maintain two through lanes

Longhill Road and Buford Road

Longhill Road and Buford Road will be modified to provide partial access (i.e., right-in/right-out with a channelized westbound left-turn lane.

Northbound Buford Road

- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Construct one exclusive channelized left-turn lane
- Construct two through lanes

Longhill Road and Lafayette Boulevard

- Construct a bus pull-off area with approximately 50 feet of storage to service the bus shelters while maintaining traffic progression and operations through the intersection
  - Westbound Longhill Road immediately west of Lafayette Boulevard
- Delineate a pedestrian crosswalk along the north and west legs of the intersection. Install supplemental pedestrian crossing signage to notify/advise drivers of pedestrians crossing Longhill Road at this unsignlized intersection location.

Southbound Lafayette Boulevard

- Stripe/delineate one exclusive left-turn lane
- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct/maintain one exclusive left-turn lane
- Construct two through lanes
- Construct bulb-out to accommodate westbound Longhill Road U-Turn operations

Westbound Longhill Road

- Construct one exclusive left-turn lane to allow for U-Turn operations
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Longhill Road and Sheffield Road

Longhill Road and Sheffield Road will be modified to provide partial access (i.e., right-in/right-out only).

Northbound Sheffield Road

- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Construct two through lanes

Longhill Road and Woods of Williamsburg Access Driveway

Longhill Road and Woods of Williamsburg Access Driveway will be modified to provide partial access (i.e., right-in/right-out only).

Southbound Woods of Williamsburg Access Driveway

- Stripe/delineate one exclusive outbound right-turn lane

Eastbound Longhill Road

- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Construct two through lanes

Longhill Road and The War Hill Inn Bed and Breakfast Access Driveway (see note above)

Longhill Road and War Hill Inn Access Driveway will be modified to provide partial access (i.e., right-in/right-out only).

Southbound War Hill Inn Access Driveway

- Stripe/delineate one exclusive outbound right-turn lane

Eastbound Longhill Road

- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Construct two through lanes

Longhill Road and Season's Trace (see note above)

- Install new traffic signal to accommodate proposed roadway widening and intersection capacity/operational changes.
- Optimize traffic signal phasing and timing plans to accommodate peak/off-peak hour vehicle demands during the AM, Midday, PM, and Off peak hours as needed

- Construct a bus pull-off area with approximately 50 feet of storage to service the bus shelters while maintaining traffic progression and operations through the intersection
    - Eastbound Longhill Road immediately east of Season's Trace
- Delineate pedestrian crosswalks along the north and east legs of the intersection and install pedestrian push buttons as well as related signal equipment adjacent to the crosswalks

Southbound Season's Trace

- Stripe/delineate one exclusive left-turn lane
- Construct one exclusive right-turn lane

Eastbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Construct bulb-out to accommodate westbound Longhill Road U-Turn operations

Westbound Longhill Road

- Construct one exclusive left-turn lane to accommodate U-Turn operations
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Longhill Road and Lafayette High School Entrance Driveway (see note above)

Longhill Road and Lafayette High School Entrance Driveway will be modified to provide partial access (i.e., right-in/right-out with a channelized eastbound left-turn lane.

- Construct a bus pull-off area with approximately 50 feet of storage to service the bus shelters while maintaining traffic progression and operations through the intersection
    - Westbound Longhill Road immediately east of Lafayette High School Entrance Driveway
- Delineate a pedestrian crosswalk along the north leg of the intersection.

Southbound Lafayette High School Entrance Driveway

- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct one exclusive channelized left-turn lane
- Construct two through lanes

Westbound Longhill Road

- Maintain/construct one exclusive right-turn lane
- Construct two through lanes

Longhill Road and Lafayette High School Bus Loop/Christian Life Center Driveway (see note above)

- Delineate a pedestrian crosswalk along the north leg of the intersection.

Northbound Christian Life Center Drive

- Strip/delineate one shared through/left-turn lane
- Maintain/delineate one exclusive right-turn lane

Southbound Lafayette High School Bus Loop

- Stripe/delineate one shared through/left-turn lane
- Construct one exclusive right-turn lane

Eastbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Westbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Construct one exclusive right-turn lane

Longhill Road and Warhill Trail/Longhill Gate Road

- Install new traffic signal to accommodate proposed roadway widening and intersection capacity/operational changes.
- Optimize traffic signal phasing and timing plans to accommodate peak/off-peak hour vehicle demands during the AM, Midday, PM, and Off peak hours as needed
- Construct a bus pull-off area with approximately 50 feet of storage to service the bus shelters while maintaining traffic progression and operations through the intersection
    - Westbound Longhill Road immediately west of Warhill Trail
    - Eastbound Longhill Road immediately east of Longhill Gate Road
- Delineate pedestrian crosswalks along all legs of the intersection and install pedestrian push buttons as well as related signal equipment adjacent to the crosswalks.

Northbound Longhill Gate Road

- Stripe/delineate one shared through/left-turn lane
- Stripe/delineate one exclusive right-turn lane

Southbound Warhill Trail

- Strip/delineate one shared through/left-turn lane
- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Maintain/construct one exclusive right-turn lane

Longhill Road and Williamsburg Montessori School

- Relocate existing Montessori School Entrance Driveway approximately 325 feet to the west of its current location along Longhill Road
- Relocated driveway will provide full-movement access to/from Williamsburg Montessori School site and provide additional on-site storage during peak student drop-off/pick-up operations
- Delineate a pedestrian crosswalk along the north leg of the intersection

Southbound Montessori School Entrance Driveway

- Strip/delineate one shared left/ right-turn lane

Eastbound Longhill Road

- Construct one exclusive left-turn lane
- Construct two through lanes
- Construct bulb-out to accommodate westbound Longhill Road U-Turn operations

Westbound Longhill Road

- Construct one exclusive left-turn lane to accommodate U-Turn operations
- Construct two through lanes
- Construct one exclusive right-turn lane

9.2.1 Planning Level Cost Estimates – Mid Term

Item	Total
Engineering/Design	$3,100,000.00
Roadway/Intersection Improvements*	$19,560,000.00
Traffic Signal Equipment Improvements	$1,452,000.00
Construction Engineering and Inspection (CEI)	$2,420,000.00
Right-of-Way (ROW)**	$7,454,000.00
Construction Contingency (10%)	$2,504,000.00
Relocation of Utilities Underground	$2,025,000.00
Total	**$38,515,000.00**

**Roadway improvement costs include applicable turn-lane, pavement marking, signage, landscaping, and stormwater collection materials costs.*

*** Assumes ROW cost is 45% of Construction Cost*



Table 9-2: Phase II "Recommendations and Action Items"	Cost Estimate [A]	Timeframe [B]	Responsible Party
Longhill Road – Widen to a four-lane, median divided typical section with 10-foot multi-use path along the north side of the roadway. The median should be a 16 to 20-foot variable width median between the New Point Road intersection to the east and Warhill Trail/Longhill Gate Road to the west. Transition from a four-lane roadway back down to a two-lane roadway should occur over a distance approximately 1,000 feet west of Warhill Trail/Longhill Gate Road (i.e., in the vicinity of the proposed relocated Williamsburg Montessori School Entrance driveway to allow for an adequate transition between the two typical sections and mitigate the potential for congestion.	$32,226,000	2025 - 2027	VDOT/James City County
Longhill Road and Glenburnie Road – Construct one exclusive channelized eastbound left-turn lane as well as remove one exclusive southbound left-turn lane. Delineate crosswalk on the north leg of the intersection.	$162,000	2025 - 2027	VDOT/James City County
Longhill Road and Buford Road– Construct one exclusive channelized westbound left-turn lane as well as stripe/delineate one northbound exclusive right-turn lane.	$160,000	2025 - 2027	VDOT/James City County
Longhill Road and Lafayette Boulevard – Construct one exclusive southbound right-turn lane as well as stripe/delineate one exclusive southbound left-turn lane. Construct one exclusive westbound left-turn lane as well as widen one eastbound through lane to allow for westbound U-turn operations. Construct a bus pull-off area on Longhill Road west of Lafayette Boulevard. Delineate crosswalk on the north and west legs of the intersection and install supplemental pedestrian crossing signage to advise/warn drivers of pedestrians crossing Longhill Road at this unsignalized intersection.	$620,000	2025 - 2027	VDOT/James City County
Longhill Road and Sheffield Road – Remove existing exclusive westbound left-turn lane. Stripe/delineate one exclusive northbound right-turn lane. Entrance driveway will be modified to accommodate right-in/right-out only turning movements.	$3,000	2025 - 2027	VDOT/James City County
Longhill Road and Woods of Williamsburg Access Driveway– Construct one exclusive westbound right-turn lane and construct/delineate one exclusive southbound right-turn lane. Entrance driveway will be modified to accommodate right-in/right-out only turning movements.	$104,000	2025 - 2027	VDOT/James City County
Longhill Road and War Hill Inn Bed and Breakfast Access Driveway– Construct one exclusive westbound right-turn lane and construct/delineate one exclusive southbound right-turn lane. Entrance driveway will be modified to accommodate right-in/right-out only turning movements.	$125,000	2025 - 2027	VDOT/James City County
Longhill Road and Season's Trace – Install a new traffic signal and optimize traffic signal phasing and timings plans to accommodate peak/off-peak hour traffic along Longhill Road. Construct one exclusive southbound right-turn lane as well as stripe/delineate one exclusive southbound left-turn lane. Construct a bus pull-off area on Longhill Road east of Season's Trace. Delineate crosswalk on the north and east legs of the intersection and install related pushbutton and pedestrian signal equipment.	$1,389,000	2025 - 2027	VDOT/James City County
Longhill Road and Lafayette High School Entrance Driveway – Construct one exclusive channelize eastbound left-turn lane as well as stripe-delineate one exclusive southbound right turn lane. Construct a bus pull-off area on Longhill Road east of Lafayette High School Entrance Driveway. Delineate crosswalk on the north leg of the intersection.	$1,166,000	2025 - 2027	VDOT/James City County
Longhill Road and Lafayette High School Bus Loop/Christian Life Center Driveway – Construct one southbound shared through/right-turn lane, one exclusive westbound left-turn lane, and one exclusive westbound right-turn lane, as well as stripe/delineate one exclusive southbound left-turn lane. Delineate crosswalk on the north leg of the intersection.	$812,000	2025 - 2027	VDOT/James City County
Longhill Road and Warhill Trail/Longhill Gate Road – Install a new traffic signal and optimize traffic signal phasing and timings plans to accommodate peak/off-peak hour traffic along Longhill Road. Construct one exclusive eastbound right-turn lane and one eastbound through lane, as well as stripe/delineate one exclusive northbound left-turn lane and one exclusive northbound right-turn lane. Construct bus pull-off areas on Longhill Road east of Longhill Gate Road and west of Warhill Trail. Delineate crosswalks on all legs of the intersection and install related pushbutton and pedestrian signal equipment.	$1,748,000	2025 - 2027	VDOT/James City County

Table 9-2: Phase II "Recommendations and Action Items"	Cost Estimate [A]	Timeframe [B]	Responsible Party
Longhill Road and West End of Williamsburg Montessori School Parking Lot – Relocate existing Montessori School Entrance Driveway approximately 325 feet to the west of its current location along Longhill Road. Relocated driveway will provide full-movement access to/from Williamsburg Montessori School site and provide additional on-site storage during peak student drop-off/pick-up operations. Construct one shared southbound left/through/right-turn lane, as well as one exclusive eastbound left-turn lane and one exclusive westbound right-turn lane. Construct one exclusive westbound left-turn lane as well as widen one eastbound through lane to allow for westbound U-turn operations. Delineate a crosswalk on the north leg of the intersection and install related pushbutton and pedestrian signal equipment.	$869,000	2025 - 2027	VDOT/James City County

[A] Cost estimate includes estimated design cost and ten percent contingency. Probable cost estimate is engineer's approximation in 2014 dollars and is subject to change based on increased construction materials, design, or time of implementation.

[B] Timeframe for implementation is an estimate based on project need and available funding. Actual timeframe may vary based on externalities.



Section 9.3 Long Term Recommendations and Planning Level Cost Estimates

Long-term or Phase 3 recommendations for the Longhill Road corridor consist of the widening Longhill Road from a 2-lane typical section to 4-lane typical section between a location in the immediate vicinity of the proposed new Williamsburg Montessori School site access driveway in the east to the Centerville Road signalized intersection in the west. This typical section will continue to include a multi-use trail, street lighting, and a pedestrian signal at the Ford's Colony Entrance driveway as well as the proposed realignment of Longhill Road to the north of the New Zion Baptist Church cemetery and select intersection improvements as needed in the more immediate future.

Longhill Road Corridor

- Phase 3 of Longhill Road widening from a 2-lane to a 4-lane, median divided typical section between the proposed new Williamsburg Montessori School site access driveway to the east and the Centerville Road signalized intersection to the west with a 10-foot multi-use path along the north side of the roadway up to the Ford's Colony Drive intersection. At the Ford's Colony Drive intersection the multi-use path will crossover/transition to the south side of Longhill Road to better serve neighborhoods and activity centers located on the south side of the roadway. The multi-use path will continue west toward the Centerville Road intersection and the entrance to Freedom Park.
- Construct 16 to 20-foot variable width median along the corridor between the proposed new Williamsburg Montessori School site entrance driveway to the east and the Centerville Road intersection to the west.
    - This will allow for the construction of single 12-foot full width left turn-lane where applicable while maintaining a 4 to 8-foot median to provide physical separation between traffic located in the turn-lane and traffic in the opposing/oncoming travel lane.
- Maintain and/or implement desirable access management strategies to accommodate, prohibit, restrict, or best mitigate full-movement crossovers/intersections located along the corridor. Maintain or locate full-movement intersections at the following locations:
    - Ford's Colony Drive/Dominion Village Driveway
    - Proposed Realigned Longhill Road at Old Longhill Road East intersection
    - Proposed Realigned Longhill Road at Old Longhill Road West intersection
    - Longhill Grove Apartments Driveway
    - Centerville Road
    - Location and spacing of full-movement intersections are based on VDOT Access Management Guidelines and intersections serving high traffic demand side streets locations.
- Construct exclusive left-turn lanes along Longhill Road at designated full-movement intersections
- Construct partial access intersections along Longhill Road consisting of right-in/right-out/channelized left-turn lanes, right-in/right-out only site driveways, or channelized U-Turns in the median.

Longhill Road and Fords Colony Drive

- Install a pedestrian/bicyclist traffic signal to accommodate pedestrians and/or bicyclist crossing from the north side of Longhill Road to the south side of Longhill Road.
- Advance warning signage and flashing beacons should be installed along both eastbound and westbound Longhill Road to notify approaching traffic of pedestrians/bicyclists crossing activity.
- Delineate pedestrian crosswalks along the east and south legs of the intersection.

Northbound Fords Colony Drive

- Stripe/delineate one shared through/left-turn lane
- Stripe/delineate one exclusive right-turn lane

Southbound Dominion Village Drive

- Maintain one shared left/through/right-turn lane

Eastbound Longhill Road

- Maintain/construct one exclusive left-turn lane
- Construct two through lanes
- Construct one exclusive right-turn lane

Westbound Longhill Road

- Construct/maintain one exclusive left-turn lane
- Construct two through lanes
- Construct/maintain one exclusive right-turn lane

Longhill Road Corridor Relocation and "Old Longhill Road" Reconstruction

To mitigate the scale of impacts to properties located along Longhill Road in the vicinity of the New Zion Baptist Church, New Zion Baptist Church Cemetery, as well as several residential properties along this segment of the roadway it is proposed that approximately 2,000 feet of the Longhill Road Corridor be relocated approximately 400 feet north of the current Longhill Road alignment. With the realignment of Longhill Road there is the opportunity to enhance the safety of the existing/remaining segment "Old Longhill Road".

- Improve/reconstruct the two lane section with curb and gutter, sidewalks and pedestrian crosswalks where applicable.
- Construct approaches to connect "Old Longhill Road" (the segment being bypassed by new construction) to the relocated corridor.

East "Old Longhill Road" Intersection

- Delineate a pedestrian crosswalk along the south leg of the intersection.

Northbound Old Longhill Road

- Old Longhill Road approach at Longhill Road will be STOP controlled
- Construct one shared left/right-turn lane

Eastbound Longhill Road

- Construct one through lane
- Construct one shared through/right-turn lane



Westbound Longhill Road

- Construct one exclusive left-turn lane
- Construct two through lanes

West "Old Longhill Road" Intersection

- Delineate a pedestrian crosswalk along the south leg of the intersection.

Northbound Old Longhill Road

- Old Longhill Road approach at Longhill Road will be STOP controlled
- Construct one shared left/right-turn lane

Eastbound Longhill Road

- Construct one through lane
- Construct one shared through/right-turn lane

Westbound Longhill Road

- Construct one exclusive left-turn lane
- Construct two through lanes

Longhill Road and Longhill Grove Apartment Entrance Driveway

- Delineate a pedestrian crosswalk along the south leg of the intersection.

Northbound Longhill Grove Apartment Entrance Driveway

- Stripe/delineate one exclusive left-turn lane
- Stripe/delineate one exclusive right-turn lane

Eastbound Longhill Road

- Construct one through lane
- Construct one shared through/right-turn lane

Westbound Longhill Road

- Construct one exclusive left-turn lane
- Construct two through lanes

Longhill Road and Centerville Road

Maintain/restripe pedestrian crosswalks along the north and east legs of the intersection.

Northbound Centerville Road

- Construct one exclusive left-turn lane
- Construct one exclusive right-turn lane
- Maintain one through lane

Southbound Centerville Road

- Maintain one exclusive left-turn lane
- Maintain one shared through/right-turn lane

Eastbound Longhill Road

- Construct one exclusive left-turn lane
- Maintain one exclusive right-turn lane
- Maintain one through lane

Westbound Longhill Road

- Construct one exclusive left-turn lane
- Maintain one exclusive right-turn lane
- Maintain one through lane

9.3.1 Planning Level Cost Estimates – Long Term

Item	Total
Engineering/Design	$2,150,000.00
Roadway/Intersection Improvements*	$15,213,000.00
Traffic Signal Equipment Improvements	$1,113,000.00
Construction Engineering and Inspection (CEI)	$2,077,000.00
Right-of-Way (ROW)**	$6,232,000.00
Construction Contingency (10%)	$1,633,000.00
Relocation of Utilities Underground	$1,650,000.00
Total	**$30,068,000.00**

**Roadway improvement costs include applicable turn-lane, pavement marking, signage, landscaping, and stormwater collection materials costs.*

*** Assumes ROW cost is 45% of Construction Cost*

Table 9-3: Phase III "Recommendations and Action Items"	Cost Estimate [A]	Timeframe [B]	Responsible Party
Longhill Road – Widen to a four-lane, median divided typical section with 10-foot multi-use path along the north side of the roadway up to the Ford's Colony Drive intersection. At the Ford's Colony Drive intersection the multi-us e path will crossover/transition to the south side of Longhill Road to better serve neighborhoods and activity centers located on the south side of the roadway. The multi-use path will continue west toward the Centerville Road intersection and the entrance to Freedom Park. The median should be a 16 to 20-foot variable width median between the proposed new Williamsburg Montessori School site entrance driveway to the east and the Centerville Road intersection to the west.	$26,959,000	2032 - 2034	VDOT/James City County
Longhill Road and Fords Colony Drive – Construct one exclusive eastbound right-turn lane, as well as stripe/delineate one exclusive northbound left-turn land and one shared northbound through/right-turn lane. Install a pedestrian/bicyclist traffic signal to accommodate pedestrians and/or bicyclist crossing from the north side of Longhill Road to the south side of Longhill Road. Advance warning signage and flashing beacons should be installed along both eastbound and westbound Longhill Road to notify approaching traffic of pedestrians/bicyclists crossing activity. Delineate pedestrian crosswalks along the east and south legs of the intersection.	$646,000	2032 - 2034	VDOT/James City County
Longhill Road Relocation and "Old Longhill Road" Reconstruction – To mitigate the scale of impacts to properties located along Longhill Road in the vicinity of the New Zion Baptist Church, New Zion Baptist Church Cemetery, as well as several residential properties along this segment of the roadway it is proposed that approximately 2,000 feet of the Longhill Road Corridor be relocated approximately 400 feet north of the current Longhill Road alignment. Improve/reconstruct the two lane section with curb and gutter, sidewalks and pedestrian crosswalks where applicable. Construct approaches to connect "Old Longhill Road" (the segment being bypassed by new construction) to the relocated corridor.	$1,180,000	2032 - 2034	VDOT/James City County
East "Old" Longhill Road and Longhill Road – East "Old" Longhill Road approach will be STOP controlled. Construct one exclusive northbound left-turn lane and one exclusive right-turn lane. Delineate a pedestrian crosswalk along the south leg of the intersection.	$151,000	2032 - 2034	VDOT/James City County
West "Old" Longhill Road and Longhill Road – West "Old" Longhill Road approach will be STOP controlled. Construct one exclusive northbound left-turn lane and one exclusive right-turn lane. Delineate a pedestrian crosswalk along the south leg of the intersection.	$151,000	2032 - 2034	VDOT/James City County
Longhill Road and Longhill Grove Apartment Entrance Driveway – Stripe/delineate one exclusive northbound left-turn lane and one exclusive right-turn lane. Construct one westbound exclusive left-turn lane. Delineate a pedestrian crosswalk along the south leg of the intersection.	$602,000	2032 - 2034	VDOT/James City County
Longhill Road and Centerville Road – Construct one exclusive northbound left-turn lane, one exclusive northbound right-turn lane, one exclusive eastbound left-turn lane, and one exclusive westbound left-turn lane. Restripe/delineate pedestrian crosswalks along the north and east legs of the intersection.	$379,000	2032 - 2034	VDOT/James City County

[A] Cost estimate includes estimated design cost and ten percent contingency. Probable cost estimate is engineer's approximation in 2014 dollars and is subject to change based on increased construction materials, design, or time of implementation.

[B] Timeframe for implementation is an estimate based on project need and available funding. Actual timeframe may vary based on externalities.



Chapter 10.0 Implementation Plan

Section 10.1 Introduction

The next key step in the planning process is to determine how the recommended improvements will be implemented. Both James City County and VDOT officials will need to determine implementation strategies as well as establish project priorities. Implementation strategies to consider include seeking and identifying funding streams, both public and private, to construct improvements. There are several potential public programs that may assist with funding projects. At the federal level there are earmarks, National Highway System funds, Congestion Mitigation Air Quality (CMAQ) funds, bridge funds, Regional Surface Transportation Program (RSTP) funds, Highway Safety Improvement Program (HSIP) funds, and Transportation Alternatives Program (TAP) funds, to name a few. At the state level there is the VDOT six-year improvement program (SYIP) can help define what alternative funding sources the project may qualify for such as; the Recreational Access Program, the Economic Development Access Program, or the Revenue Sharing Program.

It is recommended that proposed improvements be prioritized into projects with both County and VDOT input. Each project should be thoroughly evaluated then identified for priority order, time frame from implementation, and potential funding sources.

Section 10.2 Federal Funding Source Alternatives

To assist James City County, a review of available federal funding sources is provided with a summary of federal roadway/transportation alternative improvement funding programs.

10.2.1 Congestion Mitigation and Air Quality (CMAQ)

The CMAQ program, as continued under the "Moving Ahead for Progress in the 21st Century Act" (MAP-21), provides a flexible funding source to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. MAP-21, signed into law in July 2012, provided the first long-term surface transportation funding since 2005. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas).

By policy the CTB has delegated the authority to allocate CMAQ funds to the Metropolitan Planning Organization's (MPO) in nonattainment and maintenance areas, including the Hampton Roads Transportation Planning Organization (HRTPO). The Hampton Roads area was designated by the Environmental Protection Agency (EPA) as a nonattainment are for ozone in 2004 and re-designated in 2007 as a maintenance area. The CMAQ program supports two important goals of the Department of Transportation: improving air quality and relieving congestion.

Funds may be used for transportation projects likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution, and be included in the MPO's current transportation plan and transportation improvement program (TIP) or the current state transportation improvement program (STIP) in areas without a MPO.

Potentially eligible projects may include projects that improve traffic flow, including projects to improve signalization, construct HOV lanes, improve intersections, add turning lanes, improve transportation systems management and operations that mitigate congestion resulting in improved air quality, as well as implement ITS and other CMAQ-eligible projects, including projects to improve incident and emergency response or improve mobility, such as real-time traffic, transit, and multimodal traveler information.

http://www.fhwa.dot.gov/map21/factsheets/cmaq.cfm

FHWA's appropriations totaled $54.8M in FY 2013 and $54.9M in FY 2014 in CMAQ funds for Virginia. The VDOT CMAQ fund for FY 2015 totals $59,246,390, including $13,803,568 for the HRTPO. The FY 2015 – 2020 Six-Year Plan total CMAQ budget totals $362,478,535, including $84,884,738 for the HRTPO over those six years. The typical split for CMAQ projects between federal funding and the project sponsor is 80% federal and 20% state and/or local match.

10.2.2 Highway Safety Improvement Program (HSIP)

Safety throughout all transportation programs remains VDOT's number one priority. The Federal MAP-21 continues the successful HSIP, with average annual funding of $2.4 billion, including $220 million per year for the Rail-Highway Crossings program. The next round of HSIP funding will likely become available for use in FY17.

The HSIP emphasizes a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. The foundation for this approach is a safety data system, which each state is required to have to identify key safety problems, establish their relative severity, and then adopt strategic and performance-based goals to maximize safety. Every state is required to develop a Strategic Highway Safety Plan (SHSP) that lays out strategies to address these key safety problems. Every State now has an SHSP in place, and MAP-21 ensures ongoing progress toward achieving safety targets by requiring regular plan updates and defining a clear linkage between behavioral (NHTSA funded) State safety programs and the SHSP. Virginia's 2012-2016 SHSP identified seven emphasis areas for the updated plan including speeding, young drivers, occupant protection, impaired driving, roadway departures, intersections and data collection / management / analysis. The updated SHSP also initiates a comprehensive evaluation plan to track progress and effectiveness towards the plan's goal of reducing deaths and severe injuries by half by 2030.

FHWA's appropriations totaled $59.8M in FY 2013 and $59.9M in FY 2014 in HSIP funds for Virginia. The current VDOT Six Year Improvement Plan (SYIP) does not provide HSIP funding on the non-interstate system beyond FY 2014. The federal share for HSIP projects is 90%, with the remaining 10% typically being covered by VDOT. Where VDOT funding is limited, however, the locality could be required to cover this 10%.

http://www.fhwa.dot.gov/map21/factsheets/hsip.cfm



10.2.3 Surface Transportation Program (STP)

The Surface Transportation Program (STP) provides flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway (e.g., U.S. Route 60 –Richmond Road), bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. Federal-aid highways are defined as those highways on the Federal-aid highway systems and all other public roads not classified as local roads or rural minor collectors. The Federal-aid highway systems consist of the National Highway System and the Dwight D. Eisenhower National System of Interstate and Defense Highways (the "Interstate System").

Construction and operational improvements for a minor collector in the same corridor and in proximity to a National Highway System (NHS) route (e.g., I-64, U.S. Route 60, Route 199) if the improvement is more cost-effective (as determined by a benefit-cost analysis) than an NHS improvement and will enhance NHS level of service and regional traffic flow. This link provides NHS routes near the project locations.

FHWA's appropriations totaled $269.3M in FY 2013 and $269.6M in FY 2014 in STP funds for Virginia. The typical split for STP projects between federal funding and the project sponsor is 80% federal and 20% state and/or local match.

http://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/virginia/williamsburg_va.pdf

Additional STP facts: http://www.fhwa.dot.gov/map21/factsheets/stp.cfm

10.2.4 Transportation Alternatives Program (TAP)

The Transportation Alternatives Program redefines the former Transportation Enhancement (TE) Program and consolidates these eligibilities with the Safe Routes to School and Recreational Trails program eligibilities. The program is intended to help local sponsors fund community based projects that expand travel choices and enhance the transportation experience by improving the cultural, historical and environmental aspects of the transportation infrastructure.

The program does not fund traditional roadway projects or provide maintenance for these facilities. Instead it focuses on providing for pedestrian and bicycle facilities, community improvements and mitigating the negative impacts of the highway system.

The approved FY 2014 budget allocated $18.8M and has budgeted for $20.2M in FY 2015. The application cycle for FY 2016 TAP funding begins in early July, followed by applicant workshops in late July/August. The typical split for TAP projects between federal funding and the project sponsor is 80% federal and 20% state and/or local match.

http://www.virginiadot.org/business/resources/transportation_enhancement/Transportation_Alternatives_Program_Guide.pdf

Section 10.3 State Funding Source Alternatives

To assist James City County, a review of available funding sources is provided with a summary of state roadway/transportation alternative improvement funding programs.

10.3.1 Revenue Sharing

The "Revenue Sharing Program" provides additional funding for use by a county, city, or town to construct, reconstruct, or improve the highway systems within such county, city, or town. Locality funds are matched on a dollar-for-dollar basis with state funds, with statutory limitations on the amount of state funds authorized per locality. A locality may apply for up to a maximum of $10 million in matching allocations per fiscal year, with up to $5 million of these requested funds being utilized for maintenance projects. There is no limit to the amount of additional funds the locality may contribute. Priority will be given first to allocations that accelerate construction projects in the Commonwealth Six-Year Improvement Program or the locality's capital plan. Locality requests up to a total of $1 million will be evaluated first and funded first.

The Revenue Sharing Program is administered by the Virginia Department of Transportation, in cooperation with the participating localities, under the authority of Section 33.1-23.05 of the Code of Virginia and the Commonwealth Transportation Board's (CTB) Revenue Sharing Program Policy. Application for program funding must be made by resolution of the governing body of the jurisdiction requesting the funds. Applications for program funding are typically due by November for funding under the next fiscal year. Localities are typically notified by June prior to the effective fiscal year of application approvals.

The Revenue Sharing Program may be used to finance eligible work on highway systems within a locality. The Revenue Sharing Program is intended to provide funding for immediately needed improvements or to supplement funding for existing projects. Larger new projects may also be considered, provided the locality identifies any additional funding needed to implement the project. Revenue Sharing Program funds are generally expected to be used to finance project costs in the same fiscal year and projects should be in active development that is leading to their completion within the near term.

The total funds available each fiscal year will be determined by the Commonwealth Transportation Board. The maximum allocation the CTB may make to the Revenue Sharing Program is $200 million annually. The minimum allocation the CTB may make to the Revenue Sharing Program is $15 million annually. For fiscal year 2013, the CTB approved a state match of $132,017,616 for a total of 149 projects. For fiscal year 2014, the CTB approved a state match of $154,429,914 for a total of 197 projects. For fiscal year 2015, the CTB approved a state match of $180,753,471 for a total of 212 projects.

10.3.1.1 Recreational Access Program

The Recreational Access Program is a state-funded program intended to assist in providing adequate access to or within public recreational areas and historic sites operated by the Commonwealth of Virginia, or by a local government or authority. Federal sites are not eligible. Recreational Access funds, with the appropriate designation and concurrence of the Director of Conservation and Recreation or the Director of Historic Resources, are allocated by the Commonwealth Transportation Board (CTB) in accordance with its policy revised February 20, 2008 . While projects may qualify under either recreational or historic categories, the area may have both recreational and historic qualities.

It is recommended that localities consult with both DCR and DHR to ensure the access project design takes all values into account when requesting funding under this program. These funds may be used for financing the construction or improvement of secondary or local system roads within all counties and cities and certain towns that are part of the Urban System, hereinafter referred to as eligible localities. The Recreational Access Program is funding through an annual appropriation, with up to $3 million available for the program. Applications are considered on a first come, first served basis. Limitations to this funding specify that not more than $400,000 may be allocated for an access road or $75,000 for a bikeway project for any facility operated by a state agency. Additionally, not more than $250,000 may be allocated for an access road or $60,000 for a bikeway project to any facility operated by a locality, with an additional $100,000 available for the access road or $15,000 for the bikeway if matched dollar-for-dollar by the locality.

http://www.virginiadot.org/business/resources/local_assistance/Recreational_Access_Program_Guide_2009.pdf

10.3.1.2 Economic Development Access Program

The Economic Development Access Program is a state-funded incentive designed to assist Virginia localities in attracting sustainable businesses that create jobs and generate tax revenues within the locality. The program makes funds available to localities for road improvements needed to provide adequate access for new or substantially expanding qualifying establishments. These qualifying investments represent the cost of land, building and any manufacturing/processing equipment by an incoming establishment, including manufacturing, processing, research and development, distribution centers, regional service centers and corporate headquarters. Economic Development Access funds are allocated by the Commonwealth Transportation Board (CTB) in accordance with its policy revised on June 20, 2012 . These funds may be used for financing the construction or improvement of secondary or local system roads within all counties and cities, and certain towns that are part of the Urban System, hereinafter referred to as eligible localities. Ancillary improvements, such as turn lanes or intersection modifications may also be warranted as part of the access project, but are not to be considered as the primary objective of the project. The program is administered by the Virginia Department of Transportation (VDOT), Local Assistance Division. Subject to available funding, the maximum unmatched allocation to a locality within any one fiscal year is $500,000, which may be used for one or more projects. The maximum allocation to any one project is limited to the lesser of either the access road construction cost or 20% of the qualifying investment made. This guide describes the requirements, limitations and procedures of obtaining and utilizing Economic Development Access funds.

http://www.virginiadot.org/business/resources/local_assistance/EDA_Guide_July_2012.pdf

Section 10.4 Local Funding Source Alternatives

At the local level, James City County is a member of the Hampton Roads Transportation Planning Organization (HRTPO) which can assist local planning efforts by providing services and guidance on funding strategies/coordination with VDOT. Private funds may be realized through rezoning action and proffer contributions, as well as dedication of right-of-way. All the referenced funding programs and strategies require some portion of commitment and/or match at the local level but serve as a means for communities to increase the effectiveness of their budgetary dollars toward priority projects. One source of local match funding could be the inclusion of specific transportation-match funds in the County's Capital Improvement Program (CIP), or another dedicated local fund.

Local fund matches or the use of additional local funds for some components may be necessary if it is determined their inclusion in the roadway project is cost prohibitive, a significant addition to anticipated costs, or inconsistent with the intent of the project. The vision for the corridor is to provide an efficient transportation system that is multi-modal in nature, safe for all users, and aesthetically acceptable to the community. To achieve some of these objectives and based on the proposed typical section of the roadway it is anticipated that additional improvement and roadway attribute costs may include; the relocation of overhead utilities to underground, a multi-use path and the associated bicycle and pedestrian safety features (e.g., signage, pavement markings, pedestrian push buttons/ped displays at signalized intersections, pedestrian scale lighting, and flashing beacons), and landscaping (raised grass medians, trees, and/or shrubs). These features may require the County to identify and dedicate additional local funds to supplement traditional and alternative funding sources.

Section 10.5 Funding Summary

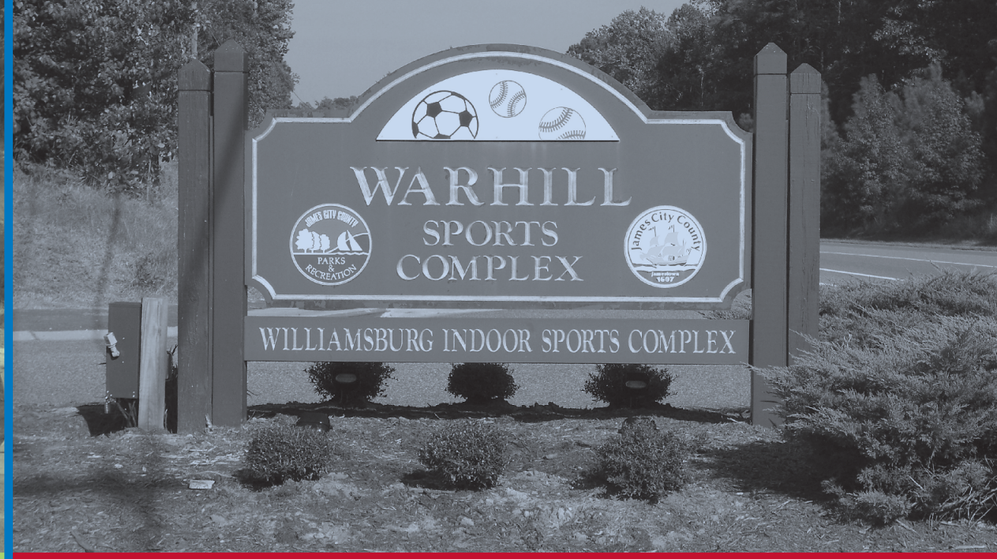
Each of the funding alternatives and funding sources described above present their own unique sets of challenges when it comes to their availability, application process and any strings that may be attached. Generally speaking, the pot of federal funding is much larger and requires a smaller state/local match (10-20% match typical) when compared to the alternative state funding sources (50% or more). The challenge with utilizing federal funding is the required compliance with the National Environmental Policy Act (NEPA) through the completion of an Environmental Impact Statement (EIS) and the required use of Davis-Bacon Act wage rates for construction. These can lead to impacts to project schedules and construction budgets. State funded projects over $500,000 are only required to complete the State Environmental Review Process (SERP), which typically has a much shorter and less exhaustive schedule, and does not require the use of Davis-Bacon wage rates. Both federal and state alternative funding sources typically have expiration dates based on when funds are first allocated, which is typically three years. Projects not being delivered in a timely manner risk losing funding and negatively impacting the state's ability to receive additional federal discretionary funds. All federal-aid or federal-aid eligible projects are required to be in the State Transportation Improvement Program (STIP). James City County should work with the Hampton Roads MPO to ensure that all projects under consideration are included in the STIP and SSYP. Regardless of the challenges, James City County should diligently pursue and consider all of these programs when strategizing on ways to fund each of the recommended improvement outlined in the report.



Appendices

Appendix A. Data Collection
Appendix B. Public Involvement
Appendix C. Environmental Screening
Appendix D. Traffic Projection Methodology Memorandum
Appendix E. Capacity Analysis
Appendix F. Lafayette High School and Season's Trace Site Access Options











A WILLIAMSBURG - JAMES CITY COUNTY PUBLIC SCHOOL

LAFAYETTE HIGH SCHOOL

PLANNING DIRECTOR'S REPORT
September 2014

This report summarizes the status of selected Planning Division activities during the past month.

- **New Town.** At the August Design Review Board meeting the DRB reviewed replacement street furnishings for Main Street, a conceptual layout for 80 lots in Section 8, color palettes for Village Walk townhomes, site plan and revised architectural renderings for an office building between Pecan Square and Bayport Credit Union in Section 2&4, a single-family layout and elevations in Section 7, and a proposed bus shelter for Watford Lane. The next regular DRB meeting is scheduled for November 13.

- **Longhill Road Corridor Study.** County staff provided an update on the study and received input on possible future access options for Lafayette High School at the School Board meeting on August 19, 2014. In addition, work is wrapping up on the report and recommendations document which are scheduled to be presented to the Planning Commission in September and to the Board of Supervisors in October.

- **Mooretown Road Corridor Study.** The next public meeting is anticipated to take place in September or October. At that time, VHB will present the first set of alignment alternatives.

- **Rural Lands.** The Rural Economic Development Committee (REDC) and the project consultant from ERM are currently finalizing the report on rural economic development opportunities and projects. The REDC will meet at the end of September to review the final draft. This report will also be used to inform the pertinent sections of the Comprehensive Plan and GSAs.

- **Comprehensive Plan.** The Planning Commission Work Group began meeting on August 7 and reviewed community input, Demographics and Population Needs. The August 21 meeting included review of Environment and Parks and Recreation. September meeting topics include:
  - Sept. 4 Public Facilities and Community Character
  - Sept. 18 Transportation and Housing

- **Monthly Case Report.** For a list of all cases received in the last month, please see the attached documents.

- **Board Action Results:**
  - August 12, 2014
    - Case No. ZO-0008-2013. Accessory Apartments (Approved, 5-0)
    - Case No. SUP-0006-2014. 2604 John Tyler Highway Public Sewer Connection (Deferred to September 9, 2014, 4-1)

New Cases for September						
Case Type	**Case Number**	**Case Title**	**Address**	**Description**	**Planner**	**District**
Conceptual Plans	C-0045-2014	Jacobs Industrial Park, Parcel 8	190 INDUSTRIAL BLVD	Proposal to construct a truck terminal	Luke Vinciguerra	01-Stonehouse
	C-0046-2014	New Town Sec. 8 Parcel D	5335 SETTLERS MARKET BLVD	Proposed development of 80 lots (single-family detached and townhome) and associated infrastructure behind Settlers Market	Leanne Pollock	04-Jamestown
	C-0047-2014	Wickre Street/Merrimac Trail, 107 Wickre St.	107 WICKRE STREET	Proposal requesting the parcel be utilized for commercial use	Jose Ribeiro	05-Roberts
	C-0048-2014	152 Tewning Road, Office and Warehouse	152 TEWNING ROAD	Proposal for an office, warehouse space and parking lot.	Jennifer VanDyke	04-Jamestown
	C-0049-2014	DEQ, Supplemental Programmatic Environmental Assessment		Supplemental Programmatic Environmental Assessment	Scott Whyte	
	C-0050-2014	3012 Jolly Pond Rd., Proposed Subdivision	3012 JOLLY POND ROAD	Proposal to construct a single-family dwelling	Jose Ribeiro	02-Powhatan
	C-0051-2014	4032 Ironbound Road BLE	4028 IRONBOUND ROAD	Proposal to consolidate of three parcels (4028, 4032, and 4038 Ironbound Road) into one parcel and adjust the boundary line between 4028 and 4024 Ironbound Rd..	Luke Vinciguerra	04-Jamestown
	C-0052-2014	2812 Chickahominy Rd., Proposed Subdivision	2812 CHICKAHOMINY RD	Proposed subdivision of the parcel into two, 3.75 acre lots.	Jennifer VanDyke	01-Stonehouse
Subdivision	S-0042-2014	4020 Colonial Crescent, Setback Line Adj.	4020 COLONIAL CRESCENT	Setback line adjustment to accommodate an existing screened porch and deck	Chris Johnson	03-Berkeley
Site Plan	SP-0059-2014	Sprint Ford's Colony Marriott Manor Club Tower SP Amend.	101 ST ANDREWS DR	Installing additional equipment cables and antennas to existing wireless telecommunications facility	Luke Vinciguerra	02-Powhatan
	SP-0060-2014	Williamsburg Landing, Sidewalk Improvement SP Amend.	5700 WILLIAMSBURG LANDING DR	Additional sidewalk near manor houses to improve interconnectivity and safety	Leanne Pollock	05-Roberts
	SP-0061-2014	Verizon Richmond Road Tower Antenna Swap SP Amend.	6487 RICHMOND ROAD	Antenna swap for nine antennas on existing tower. No changes to ground equipment	Luke Vinciguerra	01-Stonehouse
	SP-0062-2014	Tarleton Bivouac Sewer Reconstruction	205 TARLETON BIVOUAC	Clearing, removal and replacement of approx. 463 linear feet of sanitary sewer line.	Jennifer VanDyke	05-Roberts
	SP-0063-2014	New Town Sec. 12 (Founders Village) Propane Tank SP Amend.	3950 WINDSORMEADE WAY	Installation of underground propane tank to serve gas grill and firepits	Leanne Pollock	04-Jamestown
	SP-0064-2014	New Town Sec. 3&6 Block 20 (Discovery Park Place) SP Amend. 3	5416 DISCOVERY PARK BLVD	Amends rear parking lot lighting to change from dual-headed light fixtures to single-headed light fixtures in central island to match as-built conditions. Plan is to demonstrate that the revised fixture adequately lights the parking lot area. No new building or impervious square footage proposed.	Leanne Pollock	04-Jamestown
	SP-0065-2014	Sprint Longhill Road Tower SP Amend.	4451 LONGHILL ROAD	Upgrade of three existing antennas	Luke Vinciguerra	02-Powhatan
	SP-0066-2014	WindsorMeade Marketplace Wendy's (New Town Sec. 11)	4800 MONTICELLO AVENUE	Proposed building, pavement and utility service connections at WindsorMeade Marketplace for a Wendy's on the outparcel between Martin's Fuel and Monticello Ave.	Leanne Pollock	04-Jamestown
	SP-0067-2014	Ironbound Road Nursery SP Amend.	3000 IRONBOUND ROAD	Amendment to SP-0025-2014 for an additional .39 acres of clearing	Scott Whyte	03-Berkeley
	SP-0068-2014	Williamsburg Indoor Sports Complex (WISC), Driveway Installation, SP Amend. To SP-0065-2005	5700 WARHILL TRAIL	Installation of a 12 ft x 40 ft long driveway adjacent to new service door on side of structure facing grass soccer fields	Chris Johnson	02-Powhatan
	SP-0069-2014	Sprint Centerville Road Tower SP Amend.	4881 CENTERVILLE RD	Installation of additional equipment cables and antennas to the existing wireless telecommunication facility.	Luke Vinciguerra	02-Powhatan
	SP-0070-2014	New Town Sec. 9 (Settlers Market) Zoes Kitchen SP Amend.	4540 CASEY BLVD	Amendment to the lighting plan to shift the pole mounted lighting, add building mounted lights and rotate existing fixture heads	Leanne Pollock	04-Jamestown
	SP-0071-2014	Ford's Colony Sec. 3 Drainage Improvements SP Amend.	114 MOLESEY HURST	Amendment to approved plan for the removal of riprap around the upstream drop inlet and extension of the concrete surrounding the inlet	Luke Vinciguerra	02-Powhatan
Rezoning	Z-0005-2014	Peninsula Pentecostals, Kirby Tract	9250 POCAHONTAS TR	Rezoning of the property from M-2, General Industrial District to MU, Mixed Use District for a house of worship and commercial uses.	Ellen Cook	05-Roberts